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Gold Standard for the Global Goals
Key Project Information & Project Design Document (PDD)

Version 1 – July 2017

Gold Standard

KEY PROJECT INFORMATION

Title of Project:	LAKE NAIVASHA BASIN REFORESTATION PROJECT
Brief description of Project:	The Lake Naivasha Basin Reforestation Project has been funded as an insetting project by Coop Switzerland. The project is working with commercial flower growers and smallholding farmers located within the Lake Naivasha basin to promote new tree planting activities, the rehabilitation of natural vegetation, productive reconversion and improved water resource management. The project will last for 30 years from 2018 to 2048, however planting will only be conducted during the initial three years, from 2018 to 2020. The reforestation target area is 1,000 hectares of individually owned farms under both woodlots and agroforestry management systems. The selection of planting areas is based on land availability, eligibility, consent and commitment of the individual landowners, land tenure system and the capacity of the local WRUAs and CFAs to continually monitor and submit data during the project lifetime. The community institutions, together with their members, will decide on the specific clusters, vet individuals and establish landownership systems where farmers are going to grow trees. This will make it easier for them to link with individual participating farmers and maintain records for the purpose of monitoring. Planting will be done using two management systems: woodlot and agroforestry. Individual farmers and selected institutions will enter into a mutual agreement with WWF-Kenya, specifying the rules of engagement, confirming participation and accepting the gold standard terms.
Expected Implementation Date: Expected duration of Project:	2018 30 years
Project Developer:	WWF Kenya
Project Representative:	Swiss Carbon Value Ltd. (South Pole)
Project Participants and any communities involved:	Project Representative: Swiss Carbon Value Ltd. Contact: Tanushree Bagh Address: Technoparkstrasse 1, 8005 Zurich, Switzerland e-mail: t.bagh@southpole.com Phone: +41 43 501 35 50 (reception) Project Participant: WWF-Kenya Contact: Mohamed Awer Address: The Mvuli, Mvuli Road off Raphta Road, Westlands, PO Box 62440-00200, Nairobi, Kenya e-mail: mawer@wwfkenya.org Phone: +254(0)722203407+ 254(0)733333409 For other entities participating in the project, please refer to section A.1, 'Project participants and roles', Table 4. In addition, small and medium landowners that belong to Kikuyo and Masai communities will be directly involved in the reforestation activities in their areas.
Version of PDD: Date of Version:	1.1 November 2019
Host Country / Location:	Kenya/Nakuru County in the catchment for Lake Naivasha
Certification Pathway (Project Certification/Impact Statements & Products	Impact certification
Activity Requirements applied: (mark GS4GG if none relevant)	Land-use & Forests Activity Requirements
Methodologies applied:	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology

Product Requirements applied:	Gold Standard Emissions Reduction and Sequestration Product Requirements
Regular/Retroactive:	Regular
SDG Impacts:	#6 Clean water and sanitation #13 Climate action #15 Life on Land
Estimated amount of SDG Impact Certified	The project is not planning to issue Planned or Verified Emission Reductions (PERs/VERs) during Project Design Certification. The VERs will only be issued during Perfomance Certification. However, an ex-ante estimation was carried out for SDG 13 and a total of178,311 tCO_2 was estimated as the total carbon reduction generated by the project for the 30 year period. No other SDGs have been estimated at this time.
For Land-use & Forest Projects only – delete if irrelevant	
Size of the Project Area and Planting Area:	1,000 ha (estimated)
Risk of change to the Project Area during Project Certification Period:	The project implementer will identify at least 1,000 ha to be used to implement project activities in the initial three years, however there is a risk that the project area will not secure all 1,000 ha due to social risks. These risks could be caused by other programmes, projects or activities with different organizations. In addition, there are environmental risks. Long drought periods and landslides can affect the project area causing mortality of the trees planted.
Risk of change to the Project activities during Project Certification Period:	The main risk of change in the project activity is the opportunity cost. (i) Urban expansion: Some of the planting areas are close to urban centres. In this case there is a potential risk that the landowner may sell their land due to an increase in its price. Therefore, urban expansion (development) is the main potential problem. If owners sell the land, the new owner can harvest the trees on the property and implement different land use. Every county has a spatial plan (Territorial Ordering Plan), which is used to identify the land use in certain areas (for instance, to identify where to build infrastructure, plant crops or forests, etc.). This plan can be used to mitigate this risk. (ii) Other development opportunities: The opportunity cost of the land can also be a risk because the beneficiaries can change the land use activity to a more profitable one. This can be mitigated through the selection of agroforestry systems in small pieces of land instead of woodlots to increase the ability to produce a variety of goods from the same land.
Land-use history and current status of Project Area:	According with WWF (2012), land users in the Lake Naivasha Basin include traditional pastoralists to subsistence and smallholder farmers, dairy and beef farmers, and high-tech international commercial vegetable and cut flower farming operations. The lake itself is internationally renowned because of its biodiversity and natural beauty. It attracts thousands of local and international tourists. To the south of the lake, close to Hell's Gate National Park, geothermal steam is harnessed to drive electrical turbines, which contributes electricity to the national grid. The land cover types in the Lake Naivasha Basin are determined, to a large extent, by topography. Lower elevation areas surrounding Lake Naivasha are predominantly shrubland with extensive built up areas (including Naivasha town). There is also perennial cropland, including many commercial growers of horticultural and floricultural crops, which are sold in international markets. Smallholder farmers mostly use the middle elevation areas for annual cropland. The higher elevation areas support permanent natural and planted forest. This is found mostly on the eastern side of the catchment zone in the Aberdare Mountains. These mountains provide the source for many of the rivers that feed into Lake Naivasha such as the Malewa River, which provides up to 70% of the lake's water. The upper catchment of the basin, which has historically consisted of indigenous forest and open woodland, has also experienced significant changes in land use over the past 50 years. The forest has been converted into rainfed smallholdings. This has had a direct impact on the water resources of the lake. This deforestation has had a marked effect on the hydrology of the basin as flows have become more extreme with intense flooding in the wet season and low volumes in the dry season. This rapid runoff has led to higher rates of siltation, while water quality concerns have been further compounded by poor farming methods in the upper catchment zone. The use of fertilizers to improve crop production and

<table>
<tr><td></td><td>farming, and overgrazing of riparian areas has increased siltation, nutrient loads and turbidity.

A breakdown of land cover types in 2016 is shown in Table 1.

Table 1. Land Cover type by area in the Lake Naivasha Basin (2016)

<table>
<tr><th>Land Cover type</th><th>2016 area (ha)</th><th>Cover % (2016)</th></tr>
<tr><td>Annual cropland</td><td>155,320</td><td>45.2</td></tr>
<tr><td>Built up</td><td>2,720</td><td>0.8</td></tr>
<tr><td>Grassland</td><td>15,865</td><td>4.6</td></tr>
<tr><td>Natural forest</td><td>36,324</td><td>10.6</td></tr>
<tr><td>Perennial cropland</td><td>7,629</td><td>2.2</td></tr>
<tr><td>Planted forest</td><td>6,127</td><td>1.8</td></tr>
<tr><td>Shrubland</td><td>103,299</td><td>30.1</td></tr>
<tr><td>Waterbody</td><td>13,953</td><td>4.1</td></tr>
<tr><td>Wetland</td><td>2,066</td><td>0.6</td></tr>
<tr><td>Total</td><td>343,303</td><td>100.0</td></tr>
</table>
Source WWF-Kenya (2016)</td></tr>
<tr><td>Socio-Economic history:</td><td>The economy of the basin is based on the agricultural sector. The commercial horticultural sector in the Naivasha catchment area employs approximately 25,000 people directly and an additional 25,000 indirectly. Furthermore, in 2012, the Naivasha Basin area accounted for 20% (KSh 3.2 billion and 16,500 tons) of Kenya's vegetable export, the majority of which is used for domestic consumption. It contributes 70% of Kenya's cut flower exports. There are also currently three geothermal projects for electricity generation, construction and manufacturing activity is growing and, to some extent, the area has a developing tourism industry (WWF-World Wide Fund For Nature, 2012).</td></tr>
<tr><td>Forest management applied (past and future)</td><td>The project area did not have forest management applied before the implementation of the project because the project area cannot fall under the forest definition for the last 10 years. However, before that period, the forest areas that falls into the project areas have being converted to other uses such as grassland, cropland, urban settlements and were also used for firewood, which increased the deforestation and degradation in the area.
The area will be planted using two different management systems: woodlots and agroforestry. This will occur in the lower, middle and upper catchment areas. Planting of native and exotic species will happen in 2018, 2019 and 2020.
The rotation age and management will depend on the species and location of the plantation. For more details on the forest management applied, please refer to section A.5.</td></tr>
<tr><td>Forest characteristics (including main tree species planted)</td><td>The main tree species planted are: Casuarina equisitifolia, Grevillea robusta, Olea africana, Prunus africana, Mangifera indica, Persea Americana, Dombeya goetzenii, Hagenia abysinnica, Acacia xanthophloea, Cupressus lusistanica, Pinus patula, Juniperus communis, Ficus sycomorus, Juniperus procera and Podocarpus gracilior. Plantation density will be from 650 stems per ha for agroforestry to 1,100 stems per ha for woodlots.</td></tr>
<tr><td>Main social impacts (risks and benefits)</td><td><u>Risks:</u>
- In places where the land area per farm is very small such as in the upper catchment area, the family will probably need to discuss the type of land use they will implement on the farm (such as for livestock, crop growth or planting a forest). For most instances in this society, men are the ones that traditionally have the final word on the decision made. This can cause conflicts within the family and women and children are excluded from decision making.
- Acceptance of the community to changes in land use resulting from the project.</td></tr>
</table>

	Benefits: - Without the project, firewood is available but the forests are far from most of the houses and women are responsible for collecting the firewood. With the project activity, the community will have firewood available on their farms which means they will have more time to carry out other activities such as looking after children, raising chickens or growing crops. Also, carrying heavy loads of wood can cause health problems for the women, so having wood available in the farm will reduce these risks. Young girls also accompany their mothers to collect firewood. When they have to walk long distances this may result in girls missing school and having less time to complete schoolwork at the weekends. As a result of having firewood closer to the family home, family members are likely to have more time to complete other tasks. - With the project's activities (planting, pruning, and others) the family income increases and the family will have additional income in order to meet some unsatisfied basic needs.
Main environmental impacts (risks and benefits)	Risks: - The current productive activities carried out in the areas which are to be planted are transferred to other parts of the basin, and consequently impacts the natural ecosystems. Benefits: - Water retention, binding of soil particles, preventing soil erosion and improving the microclimate (as the temperatures get cooler). The trees also act as windbreaks.
Financial structure	For the first initial 7 years or until 42,000 tCO_2 are generated, Coop Switzerland will fund the reforestation project and the certificates will be used to offset their emissions. After this, the funding will come from the sale of the additional carbon credits generated by the project.
Project Area:	Not all of the project area has been defined yet because the project implementer is currently identifying project participants. However, it is estimated that 1,000 ha of land will make up the project area within Nakuru County in the catchment for Lake Naivasha
Planting Area:	To be defined, however the goal is to plant 1,000 ha, starting in 2018 with 199 ha, then 446 ha in 2019 and 355 ha in 2020 and 2021.
Eligible Planting Area:	According to the initial eligibility analysis, 263,840 ha of the basin area were non-forest land for more than 10 years prior to the project start date, and thus the area meets the eligibility criteria.
Modelling Units:	Modelling units (MU) are defined by the initial planting date, location in the catchment area (upper, middle or lower) and management selected (woodlots or agroforestry). This results in a combination of 18 MU. Below are tentative scenarios for the project, they are subject to change.

MU	*Planting Year*	*Catchment position*	*Management System*	*Potential planted area (ha)*
1	2018	Lower	Woodlot	10
2			Agroforestry	7
3		Middle	Woodlot	20
4			Agroforestry	33
5		Upper	Woodlot	69
6			Agroforestry	61
7	2019	Lower	Woodlot	28
8			Agroforestry	88
9		Middle	Woodlot	94
10			Agroforestry	67
11		Upper	Woodlot	134
12			Agroforestry	36
13	2020	Lower	Woodlot	15
14			Agroforestry	103

	15		Middle	Woodlot	15
	16			Agroforestry	103
	17		Upper	Woodlot	15
	18			Agroforestry	103
	Total				***1,000***

Infrastructure (roads/houses etc.):	The main infrastructure found in the project area is farmers' houses and any other smaller constructions for animals, firewood storage and boreholes. That said, there are also urban centres, greenhouses for flower and agriculture production, roads, three dams that are under construction in the upper catchment area, rail line construction, geothermal plants and a business park that is under construction.
Water bodies:	The lake is Kenya's second largest Ramsar site. This status demonstrates its international importance as a wetland. The lake also supplies drinking water to Nakuru and irrigation water to the horticulture and power generation industries, which are important nationally (Harper, 2002). Lake Naivasha is situated on the floor of the Eastern Rift Valley, at its highest elevation of 1,890 m. The valley floor is composed of a complex stratigraphy of volcanic and fiuvio-lacustrine deposits that were laid in Pleistocene times (Butzer, 1972) (Richardson, 1972). The underlying rocks are a complex and fractured mosaic as a consequence of this tectonic activity. They have a deep and wide aquifer. Water from the lake seeps into this aquifer (Gaudet, 1981) and moves through it, mostly likely southwards towards Longonot and northwards towards Gilgil (Clarke, 1990). The lake has no surface outlet. The catchment area on the north and north-eastern side consists of two long axial river systems: the Gilgil and Malewa (formerly Melewa). They drain into Naivasha as a result of past intra-rift faulting and of recent volcanic activity (Clarke, 1990). Their high altitude origin (> 2500 m; rainfall 1,100 mm ann -1 compared to 600 mm ann- 1 at Naivasha) makes them permanent, feeding Lake Naivasha mainly through surface flow (input calculated as 85% surface and 15% subsurface, (Gaudet, 1981)). On the eastern, western and north-western and southern side of the catchment area, no surface water reaches the lake (Figure. 2). Rivers, often clearly incised into the landscape, flow seasonally. Only the eastern stream, the Karati, reaches the lake during high rain. Other streams end before reaching the lake, such as the Marmonet from the Mau Escarpment on the western Rift flanks, which recharges the Ndabibi Plains (Clarke, 1990).
Sites with special significance for indige nous people and local communities - resulting from the Stakeholder Consultatio n:	According to the results from the LSC meeting, the stakeholders say that no such sites exist in the project area.
Where indigenous people and local communities are situated:	Even though traditional communities live in the project area, they are not considered, nor do they consider themselves, indigenous communities. The local communities are situated throughout the watershed.
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	N/A. The project will be carried out on private land, no such sites exist within the farmland. In addition, the stakeholders stated that no such sites exist inside the project area.
Evidence that Project Boundary is clearly distinguishable in the field:	The project boundary will be delimited using GPS to generate a polygon for each of the areas included in the project. In addition to this, we identify that demarcation of all reforestation areas is essential especially in areas where no fencing is erected (mostly in the middle and upper catchments). This is required to control the areas planted during establishment and to help identify sites later on for monitoring. For

	that reason, the landowners will demarcate using sticks, to differentiate the areas included in the project from the other areas of the farm.. More information can be found in the farmer agreement.

According to the Gold Standard land use and forest requirements[1] (Annex B - A/R smallholder & Microscale guidelines, the key project information shall include additional information, as follows:
The following additional information is required to support Key Project Information:

- Organizations involved in the project (including legal details of the Project Developer and its relationship to the local communities of the project):
  Project Developer: WWF – The Global Conservation Organization is one of the world´s largest and most experienced independent organizations dedicated to the conservation of the Earth´s natural environment with a network of National Organizations and Associates around the world. EEF – Kenya is registred with the Non-Governmental Organization Board Reg. No. OP.218/051/16-194/10357. This ONG has presence in the Lake Naivasha Basin for more than 5 years, carrying out watershed conservation projects and restoration of strategic ecosystems, as well as promoting the development of sustainable production projects and the marketing in fair markets.
  WWF-KENYA Certificate of Registration and its Reg. No. is available under the Supporting documents folder, WWF-K Certificate of Registration folder.

- Target smallholder groups that will be invited to participate
  The smallholder groups targeted for the project are all the people that live in Lake Naivasha Basin, that are part of a WRUA and are interested in preserving or restoring strategic areas for carbon catchment and water sustainability.

- Distribution of revenues (between the Project Developer and the smallholders)
  The project is funded by Coop Switzerland. The landowners will sign an agreement that gives Coop Switzerland rights to the carbon sequestered until 42,000 tCO2 emission reduction is reached.The payment will be based on trees per WRUA then up to the WRUA to decide how to use the money.

3.3 The Project Developer shall have a digital map with the location of all project areas All A/R projects involving smallholders and using the Smallholder and Microscale Guidelines shall be required to submit digital polygons of each plot area (as by Google Earth or other online tools, on-site GPS or Lidar measurements).

Below is a map of the general area of the project. The location of the planting areas involving smallholders within the first year is available on Figure **2**.

[1] https://globalgoals.goldstandard.org/200-gs4gg-land-use-forests-activity-requirements/

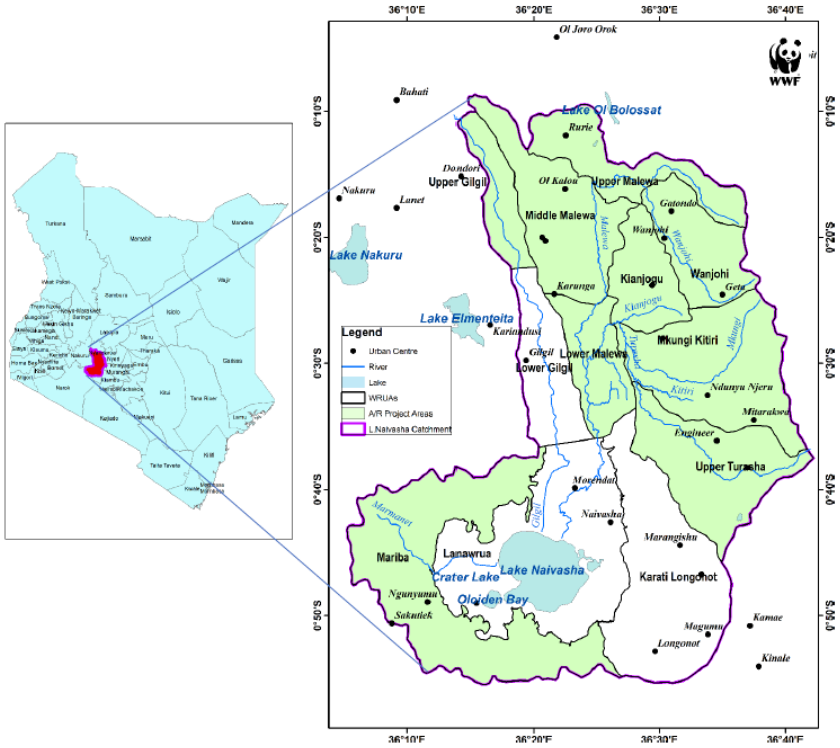

Figure 1. Project implementation area (borrowed from Lake Naivasha Basin Reforestation Project Annual Report. WWF. 2018)

The following is a map that identifies the location of the identified participating properties during the first year.

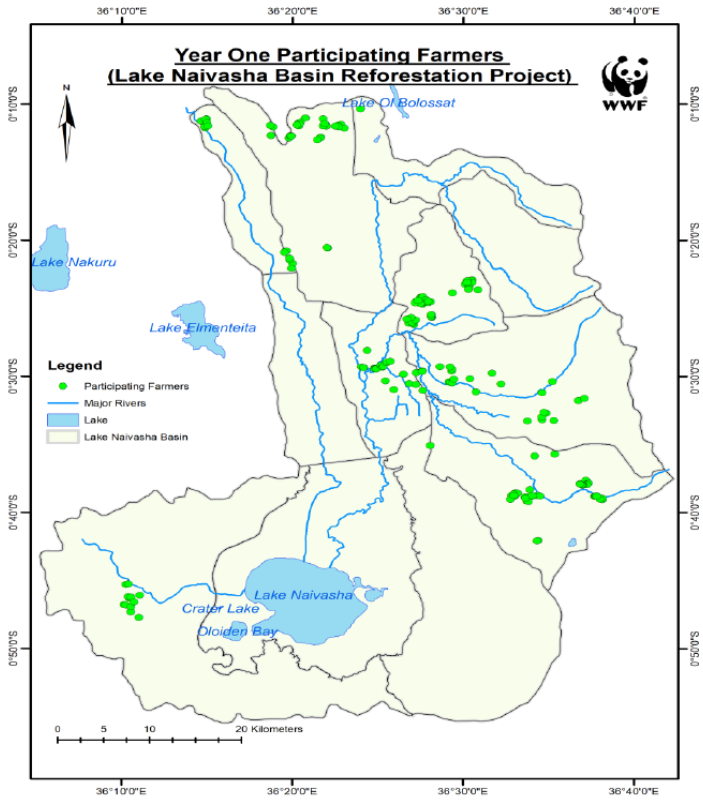

Figure 2 Landowners in the project area (borrowed from Lake Naivasha Basin Reforestation Project Annual Report. WWF. 2018)

According to the GS rules, each smallholder participating in the project shall:

- have a hand-drawn (or digital) map of this area that contains the size of his land and/or the number of trees."

Farmers will do their own hand-sketched farm maps during training to help filter out unsuitable sites and to focus on the purpose of reforestation systems on their farm. Example:

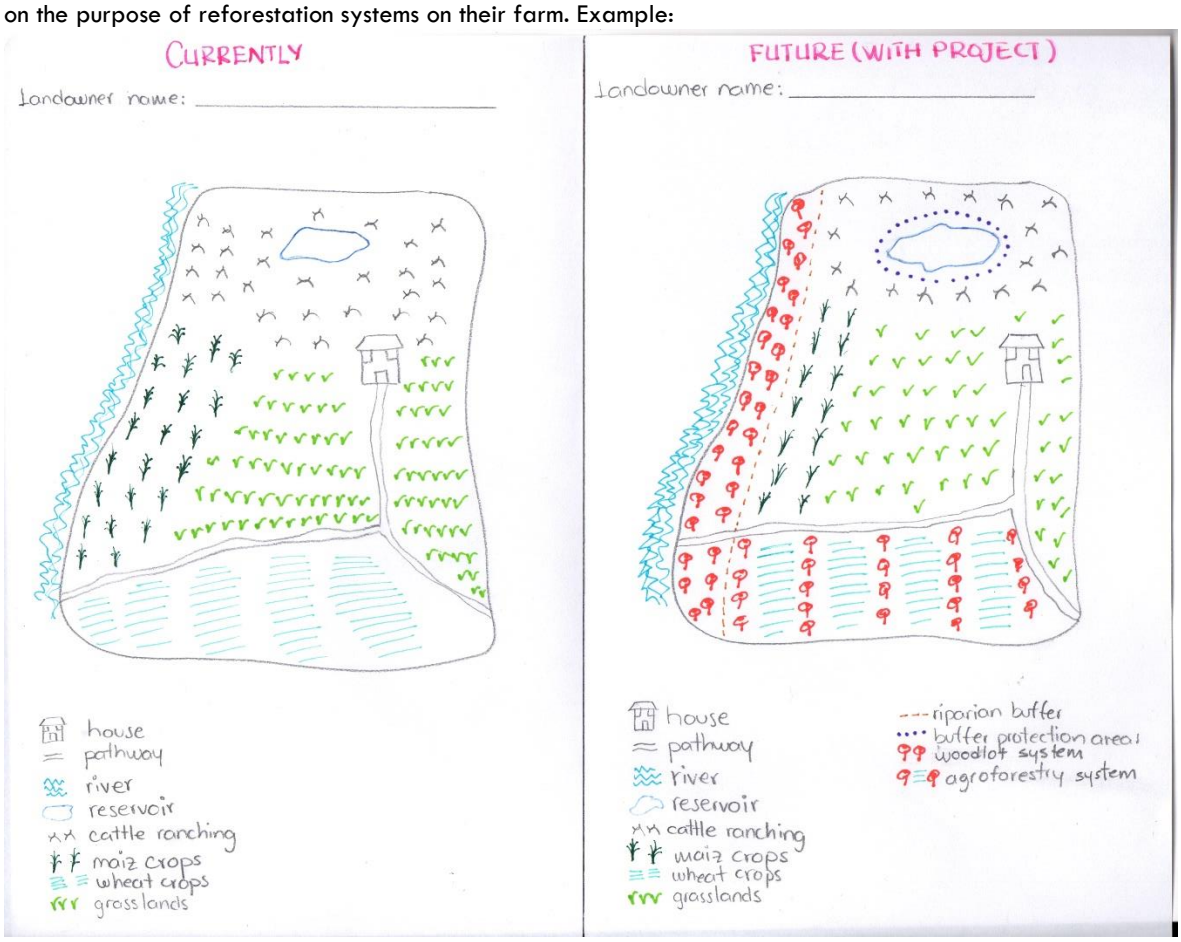

Figure 3. Format for social cartography

SECTION A. Description of project

A.1. Purpose and general description of project

The Lake Naivasha Basin Reforestation Project has been funded as an insetting project by Coop Switzerland. The project is working with commercial flower growers and smallholding farmers located within the Lake Naivasha Basin to promote new tree planting activities, the rehabilitation of natural vegetation, productive reconversion and improved water resource management. The project will last for 30 years from 2018 to 2048. The planting will be conducted during the initial three years starting of the project, from 2018 to 2020. The reforestation target area is 1,000 hectares of individually owned farmland under both woodlots and agroforestry management systems.

The selection of planting areas is based on land availability, eligibility, consent and the commitment of the individual landowners, land tenure system and the capacity of the local WRUAs and CFAs to continually monitor and submit data during the project lifetime. The community institutions, together with their members, will decide on the specific clusters, vet individuals and establish landownership systems where farmers are going to grow trees. This will make it easier for them to link with individual participating farmers and maintain records for the purpose of monitoring.

Planting will be done using two different management systems, woodlots and agroforestry throughout the catchment. Individual farmers and selected institutions will enter into a mutual agreement with WWF-Kenya, specifying the rules of engagement, confirming participation and accepting the terms of the Gold Standard.

For the purposes of planning activities for the Lake Naivasha Basin Reforestation Project the area is categorised into three catchment zones based on their elevation: lower, middle and upper. The key characteristics of each catchment zone are described in Table 2.

Table 2. Catchment zones in the Lake Naivasha Basin

Catchment zone	Elevation range	Description	Climatic considerations	WRUAs	CFAs	Population
Lower	Below 2,000 masl	The lower catchment zone is mostly located to the western side of Lake Naivasha.	This is a drought prone area with semi arid climate and annual precipitation less than 600 mm	Mariba	None	Relatively sparsely populated but mixed ethnicities
Middle	Between 2,000 masl and 2,500 masl	The middle catchment is mostly located in the hilly area east of Lake Naivasha (before rising to the upper catchment of the Aberdares Range)	There is a tropical humid climate with precipitation typically ranging between 800 to 1,200 mm per year. Some drought and limited frost risk.	Upper Malewa, Middle Malewa and Lower Malewa	None	Densely populated, predominantly smallholders of Kikuyu ethnicity
Upper	Above 2,500 masl	The upper catchment is mostly located towards the upper slopes of the Aberdares mountains on the eastern side of Lake Naivasha.	Cool climate with high frost risk. More than 1,200 mm of precipitation per year	Mkungi Kitiri, Upper Turahsa Kinji, Wajohi and Kianjogu	North Kinangop, Aberares Kiburu and Geta.	Predominantly smallholders of Kikuyu ethnicity

A precipitation map is shown in Figure 1. It illustrates the strong rainfall gradient increasing from the lower catchment in the west, which is very dry (semi arid), to the east, where annual rainfall levels increase with elevation (through the middle and upper catchment zones) as far as the Aberdares mountain range.

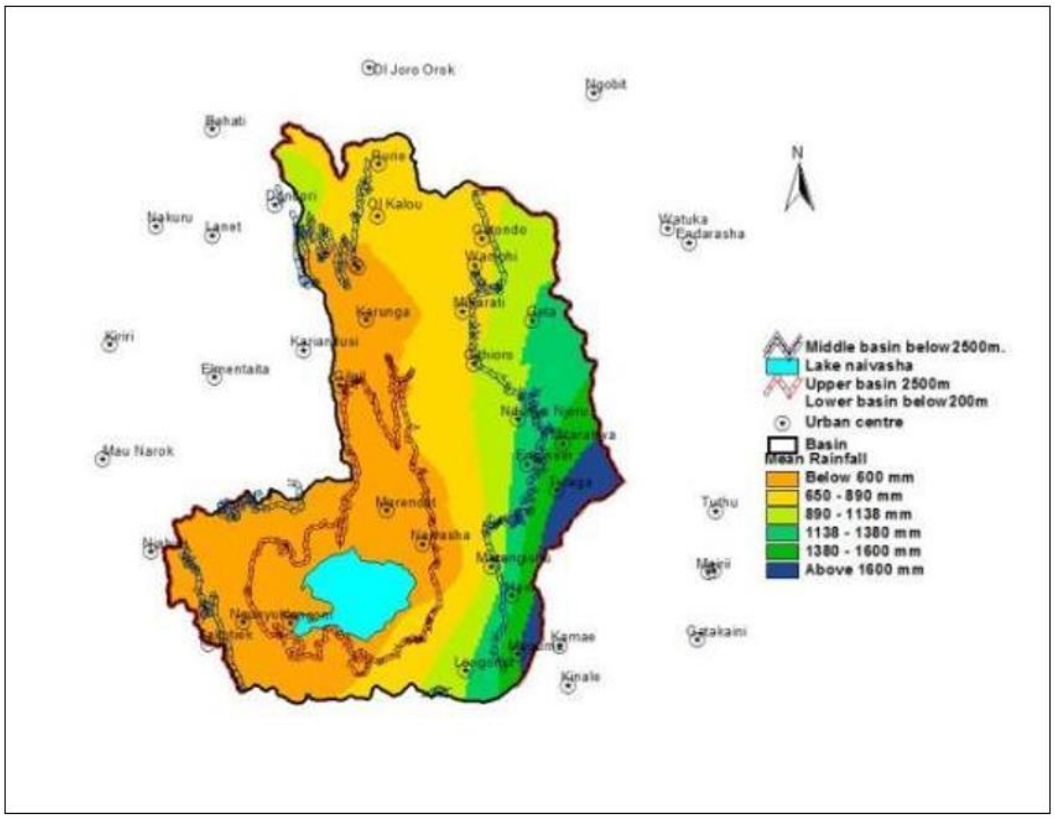

Figure 1. Lake Naivasha Basin Precipitation Map

Source WWF-Kenya

The land use that existed prior to the project's implementation consists of cropland, grassland and shrubland. The land cover types in the Lake Naivasha Basin are determined, to a large extent, by topography (see Figure 2). Table 3 provides a breakdown of land cover types for the Naivasha watershed in 2016. Lower elevation areas surrounding Lake Naivasha are predominantly shrubland with extensive built up areas (including Naivasha town). There is also perennial cropland, including many commercial horticultural and floricultural crop growers whose produces is sold to international markets. The middle elevation areas are mostly used for annual cropland by smallholding farmers whilst the higher elevations support permanent natural and planted forests. These forests exist mostly on the eastern part of the catchment area in the Aberdare Mountains. This area has the sources of many of the rivers that feed into Lake Naivasha for example the Malewa River, which provides up to 70% of Lake Naivasha's water. The project area will consist of small to medium landowners who will carry out the reforestation activities on land that was formerly cropland, grassland and shrubland.

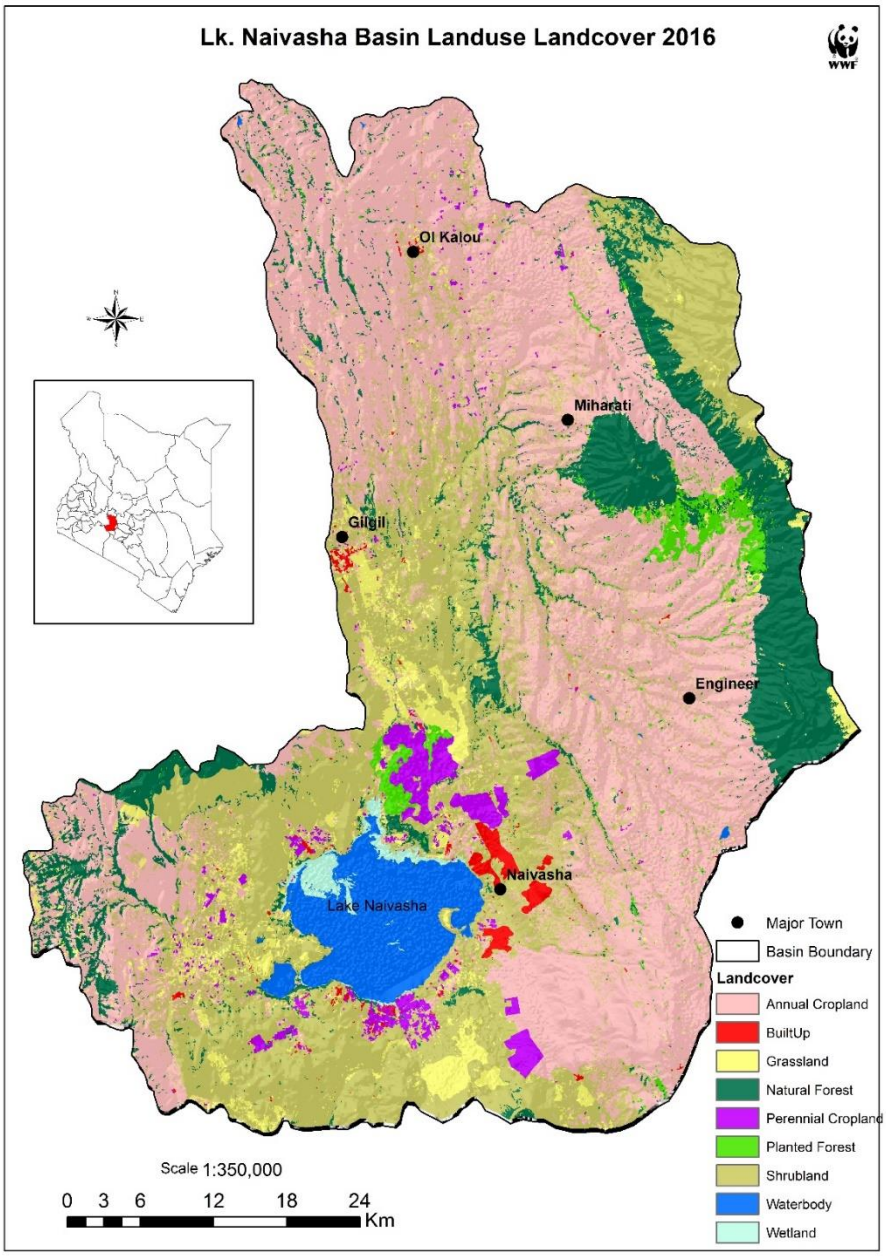

Figure 2. Lake Naivasha Basin Land Use and Cover 2016

Table 3. Land cover type by area in the Lake Naivasha Basin (2016)

Land cover type	2016 area (ha)	Cover % (2016)
Annual cropland	155,320	45.2
Built up	2,720	0.8
Grassland	15,865	4.6
Natural forest	36,324	10.6
Perennial cropland	7,629	2.2
Planted forest	6,127	1.8
Shrubland	103,299	30.1
Waterbody	13,953	4.1

Wetland	2,066	0.6
Total	343,303	100.0

Source WWF-Kenya (2016)

Project participants and roles

The project participants and their key roles in the project are described in Table **4.**

Table 4. Project participants and roles in the Lake Naivasha Basin AR project

Project participant	Description of role
South Pole	• International anchor and link to international corporates • Manage fund dispersal • Provide technical support to forest establishment, management and monitoring; • Carbon certification • Guidance on issues relating to Gold Standard and insetting
WWF-Kenya	• Local implementation anchor • Co-ordinate implementation activities with WRUAs and CFAs • Local stakeholder consultation • Farmer selection • Mapping of project areas • Procure and deliver tree seedlings to participating farmers • Farmer training (on tree establishment and management) • Monitoring • Annual reporting • Implement rewards mechanism
Kenya Forest Service	• Design of forest management systems • Training of participating farmers in forest management
WRUA	• Implementation partners • Farmer selection • Monitoring
CFA	• Implementation partners • Farmer selection • Monitoring
Imarisha	• Key stakeholder to facilitate community engagement activities • Maintain platform with monitoring data
Oserian	• Water management and monitoring activities • Riparian woodland rehabilitation around Lake Naivasha
Flamingo	• Water management and monitoring activities • Provision of seedlings

A.2. Eligibility of the project under Gold Standard

This project is eligible for Gold Standard Certification in accordance with the approved methodology: The Gold Standard A/R GHG emissions reduction & sequestration methodology [401.13 AR].

For GS an A/R project is eligible where trees are planted on land that does not meet the definition of a forest at the start of planting, and the planted area should not have been forest for at least 10 years prior to the start of planting. The eligibility analysis was performed based on cartographic information from the Global Forest Change 2000-2016 (Hansen et al., 2013[2]).

Global Forest Change is a global loss and gain coverage forest map for the 2000 to 2016 period, constructed by Department of Geographic Sciences at the University of Maryland (USA). It was created using on Landsat TM, ETM +, and OLI images with a pixel size of 30 m and a cartographic scale of 1: 100,000. The results of the map are temporal series of Landsat images that characterize the forest cover and the change that has occurred according to the following definitions:

- Forest cover: Trees with a minimum height of 5 m, expressed as percentage of crown density per cell for the year 2000.

- Annual loss of forest cover: The loss of forest area per year, from 2000 to 2016.

- Data mask: Values that represent continental areas and permanent waterbodies.

To perform the eligibility analysis, Global Forest Change information was downloaded. This information is divided into 10 by 10 cells ranging from 180W-180E to 80N-60S. The project area is located between cells 0N and 30E. Three raster layers were downloaded; the forest cover layer at the pixel level (0% to 100% of cover) for the year 2000, the annual forest loss layer for the 2000 to 2016 period, and the layer of permanent water bodies in the study area referred to as the data mask.

To obtain the Forest-Non-Forest layers for 2007 and 2016 (Figure 3), the following steps were taken:

- Reclassification of the forest cover layer of 2000 according to FAO Forest definition (30% canopy cover).

- Reclassification of annual forest loss layer 2000 to 2016 to obtain layers of forest loss accumulated in 2007 and 2016.

- Subtraction of forest losses to 2007 and 2016 from the Forest-Non-Forest layer of the year 2000.

Using the Forest-Non-Forest layers (from 2007 and 2017), a cartographic crossover of both periods was made to delimit eligible areas. The information was reclassified defining eligible areas as those areas that were maintained as non-stable forest in the period 2007-2016. With exceptions for populated centres and permanent water bodies. A scale of 1: 100,000 was used. Non-eligible areas were defined as areas with stable forest or with gains or losses of forest cover over the same period.

Finally, using the resulting raster information, a post-processing was carried out. This consisted of changing the WGS84 geographic coordinate projection system to the flat WGS84-UTM 37S system. Then, transforming the resulting layer (raster) to vector format, eliminating isolated polygons smaller than 0.1 ha, constructing a table of attributes with categories: eligible (1) and non-eligible (0), and cutting the layer with the boundaries of the project area.

According to the initial eligibility analysis, 264,044 ha of the basin area were non-forest land for more than 10 years prior to the project start date and thus the area meets the eligibility criteria. The eligible area accounts for 76.85% of the total basin area. The non-eligible area makes up 79,526 ha. Figure 3 shows the eligible area, it is marked in orange. i.e. the land area that has been non-forest for more than 10 years prior to the project start date. It is important to note that not all the eligible land is equally suitable for project implementation activities. Much of the area will be long established farmland, grassland, wetland and populated centres.

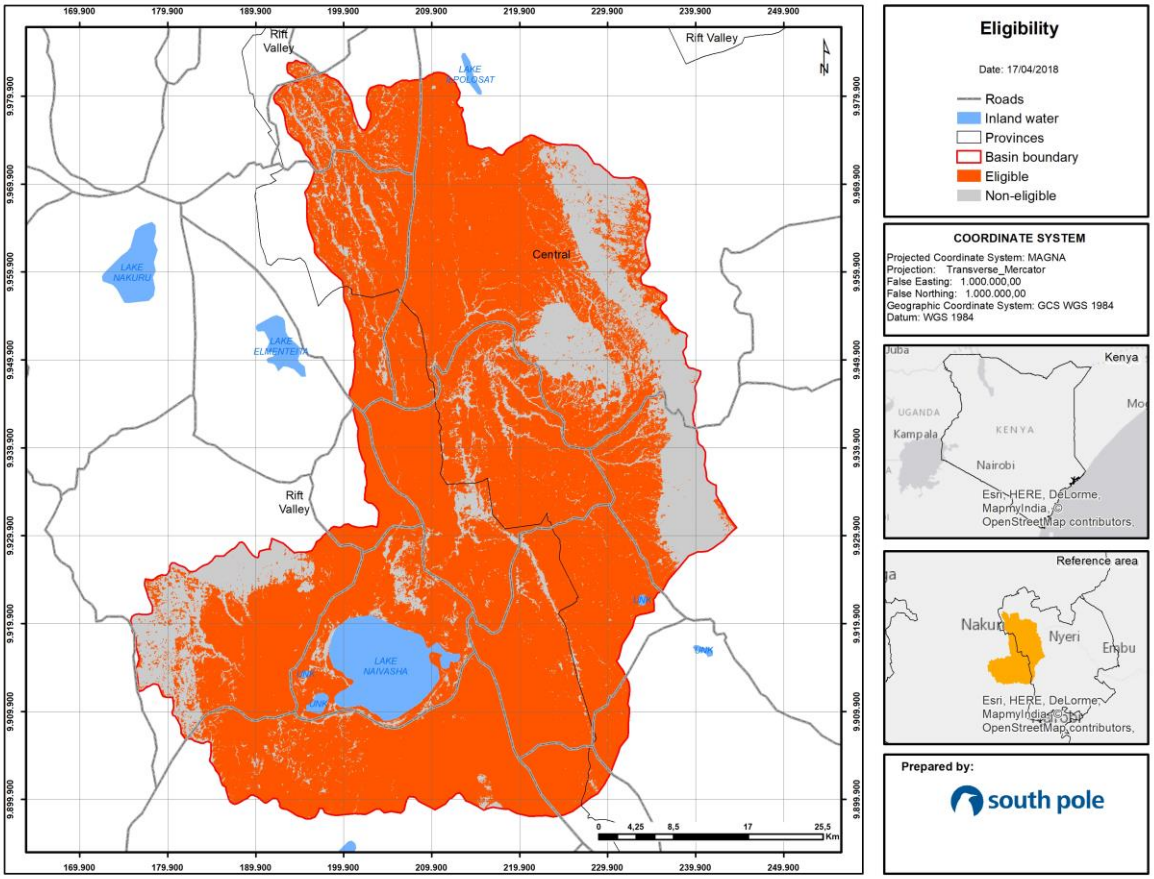

Figure 3. Eligibility map

In addition to that, as the methodology indicates, the project includes the activity of planting trees using two different management systems: woodlots and agroforestry systems. The project activity can also include single-species plantations on the woodlots. Also, projects can apply to any silvicultural system, such as conservation forests (no use of timber), forests with selective harvesting or rotation forestry. This project will use the silvicultural system of rotation forestry and also conservation forests (no use of timber).

A.3. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

The project is funded by Coop Switzerland. The landowners will sign an agreement that gives Coop Switzerland rights to the carbon sequestered until 42,000 tCO_2 emission reduction is reached. In order to ensure that all the landowners participating in the project are the true owners of the carbon and according with the methodology for Land registration data standards, interoperability and data access in Kenya[3] they are required to have at least one of the two types of registration in Kenya; title and deed registration. Also, each smallholder will sign an agreement with the Project Developer. The farmers pass the carbon rights of the carbon credits to Swiss Coop until 42,000 Gold Standard Verified Emission Reductions are generated. Beyond those 42,000 tCO_2, the farmers will have the CO_2 user rights. The contract with the landowners last for 30 years. In addition to this, as stated in the Farmer Agreement, the farmer does not lose any rights over the areas, therefore holds the necessary rights to implement the project.

[2] Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend. (2013). High-Resolution Global Maps of 21st-Century Forest Cover Change. Science, 342: 850–53. Available in: http://earthenginepartners.appspot.com/science-2013-global-forest.

[3] (Mburu, Ntonjira, & Njeri, March 20-24, 2017)

In Kenya, planting permits are not required and people must apply for a permit only if they are going to harvest timber. The Kenyan Forest Conservation and Management Act that describes the requirement of permits to harvest forest products. Please, refer to Part VI and Section 71 (h) of the Act which is available under the folder Supporting documents, Literature.

For more details of the contract, please refer to the landowner agreement in the folder Supporting documents; Agreements; Farmer Agreement.

A.4. Location of project

A.4.1. Host Country

Kenya

A.4.2. Region/State/Province etc.

Nakuru County

A.4.3. City/Town/Community etc.

Lake Naivasha Basin

A.4.4. Physical/Geographical location

The project is located in Nakuru County and includes the entire Lake Naivasha catchment area which is 3,433 km^2. The basin's altitude varies from 1,765 masl, the level of Lake Naivasha, rising to 3,982 masl at the top of the Aberdares mountain range. This is illustrated in the Lake Naivasha Topography map in Figure 4.

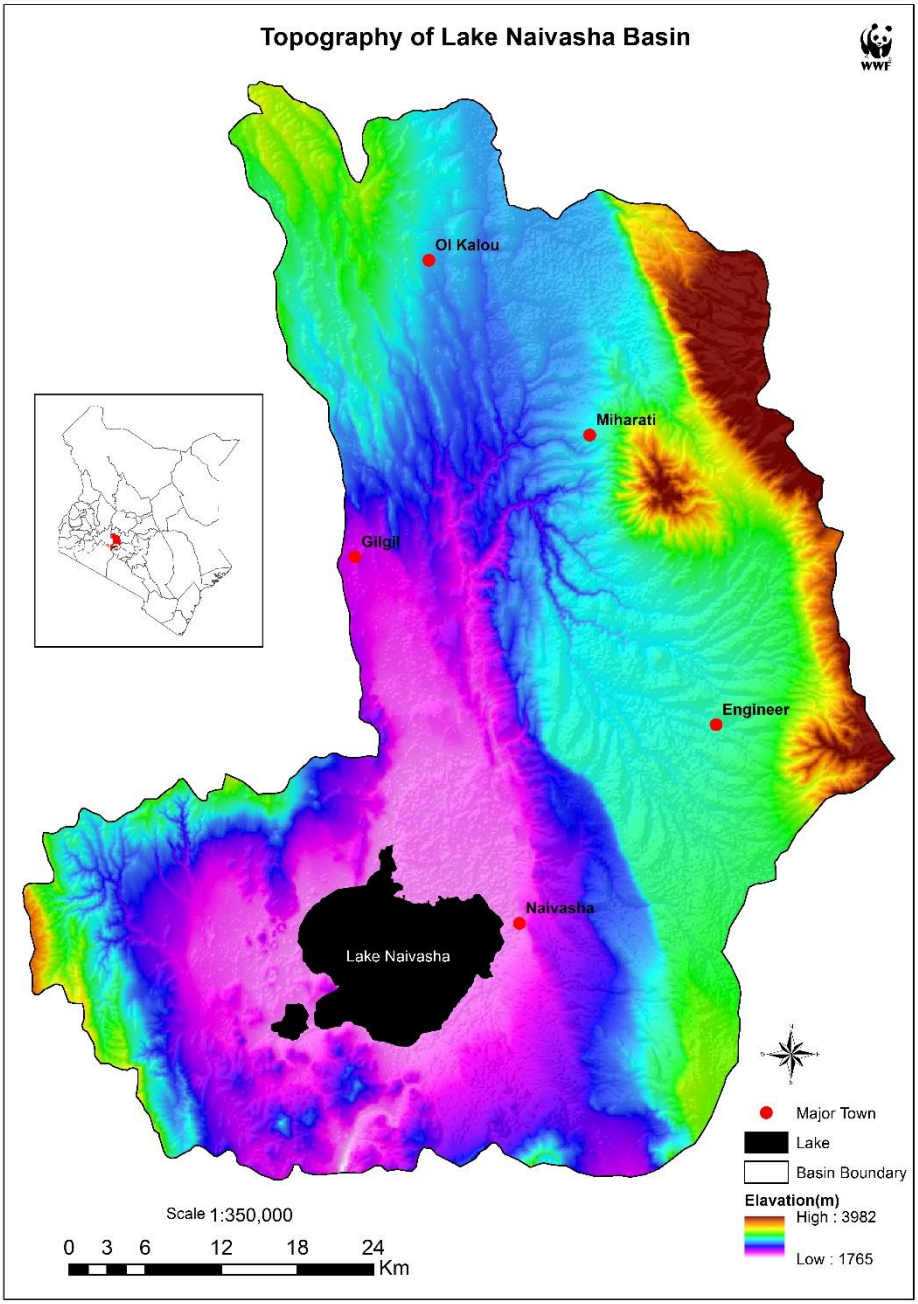

Figure 4. Lake Naivasha basin topography

A.5. Technologies and/or measures

The project is working with commercial flower growers and smallholding farmers located within the Lake Naivasha Basin to promote new tree planting activities, the rehabilitation of natural vegetation and improved water resource management. This will contribute to the following three SDGs: clean water and sanitation, climate action and life on land.

Farmers will be selected to implement reforestation activities through the WRUAs. Farmers must be selected through a fair and transparent process based on the principle of full, prior and informed consent (FPIC) achieved through the LSC process. The criteria for farmer selection may include: motivation of farmer and eligibility and hydrological benefits of the proposed reforestation site. Reforestation activities will be implemented by smallholders either through WRUAs or CFAs. All farmers should have a full understanding of the reforestation options that are available to them, the commitments required, the management operations required and the

benefits that they will derive from the implementation of the reforestation. All participants should demonstrate that they hold an uncontested land title for the area where they intend to implement project activities. Participating farmers will enter into a signed agreement with WWF-Kenya to implement reforestation activities. The agreement will specify what WWF-Kenya will provide to the farmers (training, tree seedlings), the length of the agreement (minimum 30 years), the management system to be adopted by the farmer and the location of the activity.

The area is categorised into three catchment zones based on elevation: lower, middle and upper. All trees planted (reforestation) should remain in place for a minimum period of 30 years from the time of planting. During this period it is possible for farmers to perform silvicultural operations including pruning, thinning and even rotational harvest. However, all management operations (which includes both tree establishment and subsequent long term management) should be done following a management plan. In each of the three catchment zones (lower, middle and upper) participants will have a choice of two reforestation options: agroforestry or woodlots. The reforestation target is to establish 1,000 ha from 2018 to 2020. A summary of the proposed reforestation schedule is shown in Table 5.

Table 5. Reforestation (target) area per WRUA from 2018 to 2020

Catchment zone	WRUA	Agroforestry planted area (ha)	Woodlots planted area (ha)	Total planted area (ha)
Lower	Mariba (Kongoni)	35	35	70
Middle	Lower Gilgil	40	35	75
	Middle Malewa	75	50	125
Upper	Mkungi Kitiri	90	50	140
	Upper Turasha Kinja	80	58	138
	Wanjohi	50	30	80
	Upper Gilgil	75	25	100
	Upper Malewa	50	35	85
	Mariba (Oltoroto)	45	57	102
	Kianjogu	50	35	85
Total		**590**	**410**	**1,000**

Over the three year period the target is to establish 590 hectares of agroforestry and 410 hectares of woodlots. So far 199 ha has been planted in 2018, 446 ha in 2019 and 355 ha will be planted in 2020.

The planted area to date for each WRUA is shown in Table 5.

Catchment zone	WRUA	Agroforestry planted area (ha)	Woodlots planted area (ha)	Total planted area (ha)
Lower	Mariba (Kongoni)	74	20	94
	Lower Malewa	21	16	37
	Lower Gilgil	1	1	2
Middle	Middle Malewa	99	114	213
Upper	Kianjogu	11	17	28
	Upper Turasha Kinja	31	55	86
	Mkungi Kitiri	3	71	74
	Upper Gilgil	49	57	105
	Wanjohi	3	3	6
Total		291	354	645

The project implementation team will provide training to all participants to help them select the reforestation system most suited to their needs. They will then receive further training in all aspects of tree establishment and the subsequent management of their selected A/R system.

Agroforestry systems involve managing trees and food production systems together on the same area of land. The implementation of agroforestry systems should bring multiple benefits to farmers through improved crop production, the diversification of land use and income earning opportunities. Agroforestry systems are typically very popular with smallholders (farmers that have less than 2 ha of land) and who may otherwise be unable to plant trees due to a lack of available land. Agroforestry systems can also play a key role in soil conservation in hilly and erosion prone areas. Agroforestry will include planting widely spaced interspersed trees with crops. These trees will be planted with a distance of 6 m by 8 m between them resulting in 208 trees per hectare. Trees can also be planted more closely together (2 m apart) in lines along property boundaries and along terraces to create windbreaks and reduce soil erosion. In some cases, farmers may also plant more than one row or use some trees to create mini-woodlots. Assuming that an average of 884 m of boundary or terrace is planted per hectare (equivalent to 442 trees per hectare) the total number of trees planted per hectare by farmers adopting the agroforestry system is 650. Figure 5 illustrates the agroforestry planting design.

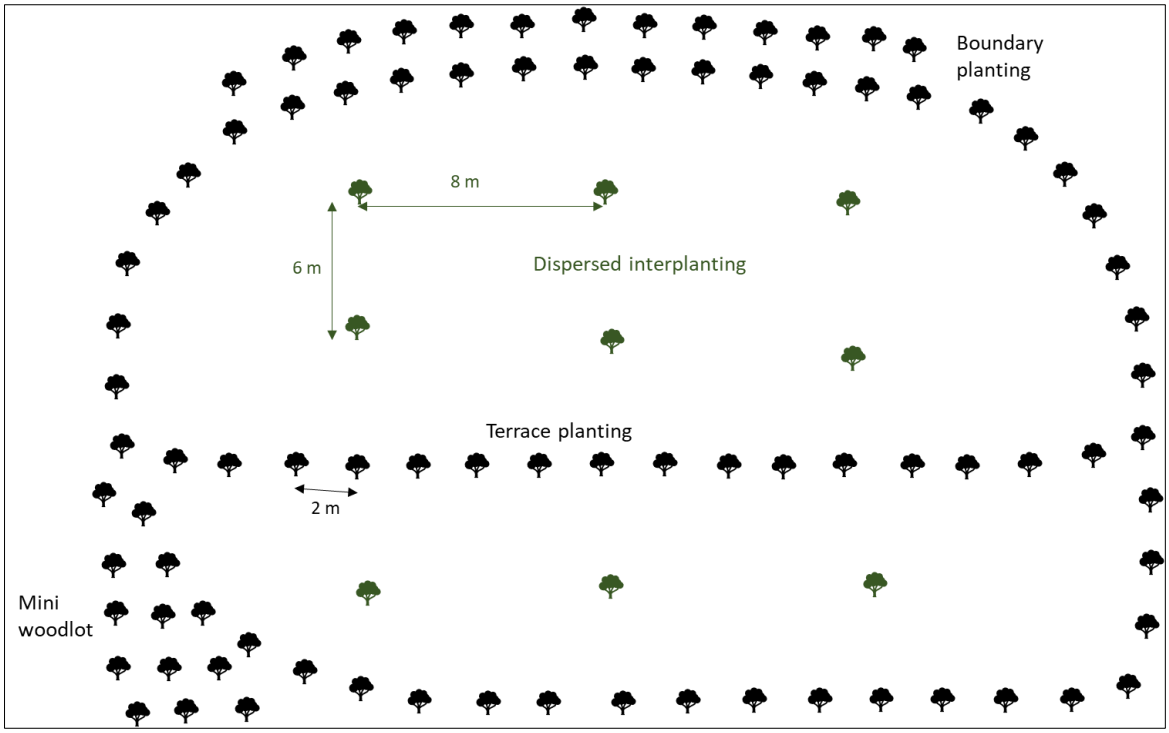

Figure 5. Illustration of agroforestry design

Table 6, Table 7 and Table 8 provide information on the key characteristics and management operations of each tree species used in agroforestry systems in the lower, middle and upper catchments zones of the Lake Naivasha Basin.

Table 6. Management operations for agroforestry reforestation in the lower catchment zone.

Tree species	Native / exotic	Growth habit	Proportion of planting (%)	Thinning	Rotation	Description of role
Casuarina equisitifolia	Exotic	Fast growing	30	Year 10 (25%) and 18 (25%)	25 years	Firewood, timber, fencing
Grevillea robusta	Exotic	Fast growing	20	Year 10 (25%) and 18 (25%)	25 years	Firewood, beekeeping, fodder and logs for timber.

Olea africana	Native	Slow growing	20	Year 40		Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Olea* has a very hard wood.
Prunus africana	Native	Slow growing	20	Year 40		Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Prunus* has a very hard wood.
Mangifera indica	Exotic	Medium growing	10	None		Fruit

Table 7. Management operations for agroforestry reforestation in the middle catchment zone.

Tree species	Native / exotic	Growth habit	Proportion of planting (%)	Thinning	Rotation	Description of role
Casuarina equisitifolia	Exotic	Fast growing	30	Year 10 (25%) and 18 (25%)	25 years	Firewood, timber, fencing
Grevillea robusta	Exotic	Fast growing	30	Year 10 (25%) and 18 (25%)	25 years	Firewood, beekeeping, fodder and logs for timber.
Olea africana	Native	Slow growing	15	Year 40		Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Olea* has a very hard wood.
Prunus africana	Native	Slow growing	15	Year 40		Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Prunus* has a very hard wood.
Persea americana	Exotic	Slow growing	10	None		Fruit

Table 8. Management operations for agroforestry reforestation in the upper catchment zone.

Tree species	Native / exotic	Growth habit	Proportion of planting (%)	Thinning	Rotation	Description of role
Casuarina equisitifolia	Exotic	Fast growing	5	Year 8 / 13 and 18	28 years	Firewood, timber, fencing
Dombeya goetzenii	Native	Medium growing tree	20			Beekeeping, soil conservation and improved soil fertility
Grevillea robusta	Exotic	Medium growing	10	Year 8 / 13 and 18	28 years	Firewood, beekeeping, fodder and logs for timber.
Hagenia abysinnica	Native	Fast growing up to 30 metres	30			Best for soil fertility, beekeeping (lots of flowers)
Olea africana	Native	Slow growing	15	Year 8 / 13 and 18		Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Olea* has a very hard wood.
Prunus africana	Native	Slow growing	15	Year 8 / 13 and 18		Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Prunus* has a very hard wood.
Persea americana	Exotic	Slow growing	5	None		Fruit

Woodlot systems involve planting trees for permanent reforestation. The woodlot system may be used for the production of timber and non-timber forest products. The woodlot system is best adopted by farmers with more land availability (typically more than 2 ha). However, there are some landowners in the lower catchment zone

with smaller farms who may wish to manage the entire landholding as a woodlot. To establish woodlots 1,100 trees per hectare are planted where the trees are spaced 3 m by 3 m apart. Except for *Acacia xanthophloea* trees which are planted in the lower catchment zone 4 m by 4 m apart. During the establishment phase, up to year three or four after planting, intercropping between the trees until canopy closure is encouraged. This is the most effective method of performing the management operations required for successful tree establishment. Weeding and the use of organic fertilisers, which are intended for the food crops, also benefit the young trees during this critical phase of their establishment.

Table 9, Table 10 and Table 11 provide information on the key characteristics and management operations required for woodlot systems in the lower, middle and upper catchment zones of the Lake Naivasha Basin.

Table 9. Management operations for woodlot reforestation in the lower catchment zone.

Tree species	Native / exotic	Growth habit	Proportion of planting (%)	Thinning	Rotation	Description of role
Acacia xanthophloea	Native	Fast growing (only in areas with raised water table)	30			Firewood, medicinal for treatment of malaria, charcoal, beekeeping
Casuarina equisitifolia	Exotic	Fast growing	20	Year 12 (25%) and 18 (25%)	28 years	Firewood, timber, fencing
Grevillea robusta	Exotic	Fast growing	40	Year 12 (25%) and 18 (25%)	28 years	Firewood, beekeeping, fodder and logs for timber.
Olea africana	Native	Slow growing	5			Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Olea* has a very hard wood.
Prunus africana	Native		5			Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Prunus* has a very hard wood.

Table 10. Management operations for woodlot reforestation in the middle catchment

Tree species	Native / exotic	Growth habit	Proportion of planting (%)	Thinning	Rotation	Description of role
Casuarina equisitifolia	Exotic	Fast growing	20	Year 12 (25%) and 18 (25%)	28 years	Firewood, timber, fencing
Cupressus lusistanica	Exotic		40	Year 6 (20%), 10 (20%) and 18 (20%)	28 years	Firewood, fencing, timber – furniture
Grevillea robusta	Exotic	Fast growing	15	Year 12 (25%) and 18 (25%)	28 years	Firewood, beekeeping, fodder and logs for timber.
Pinus patula	Exotic		10	Year 6 (25%) and 12 (25%)	28 years	Firewood, fencing, timber – construction
Prunus africana	Native		5			Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing a *Prunus* has a very hard wood.
Olea africana	Native	Slow growing	5			Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as *Olea* has a very hard wood.

Juniperus communis	Native	Medium / slow – naturally matures in 100 years	5			Firewood, fencing,

Table 11. Management operations for woodlot reforestation in the upper catchment

Tree species	Native / exotic	Growth habit	Proportion of planting (%)	Thinning	Rotation	Description of role
Casuarina equisitifolia	Exotic	Fast growing	5	Year 12 (25%) and 18 (25%)	28 years	Firewood, timber, fencing
Cupressus lusistanica	Exotic	Fast growing	25	Year 6 (20%), 10 (20%) and 18 (20%)	28 years	Firewood, fencing, timber – furniture
Dombeya goetzenii	Native		10			Beekeeping, soil conservation and improved soil fertility
Ficus sycomorus	Native		5			
Grevillea robusta	Exotic	Fast growing	10	Year 12 (25%) and 18 (25%)	28 years	Firewood, beekeeping, fodder and logs for timber
Hagenia abysinnica	Native	Fastest growing up to 30 m	5			Best for soil fertility, beekeeping (lots of flowers)
Juniperus procera	Native	Medium / slow – naturally matures in 100 years	5			Firewood, fencing
Pinus patula	Exotic	Fast growing	20	Year 6 (20%), 12 (20%) and 18 (25%)	28 years	Firewood, fencing, timber – construction
Podocarpus gracilior	Native		10			
Olea africana	Native	Slow growing	5			Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing since as *Olea* has a very hard wood.

No cultivation of food crops is permitted in riparian areas. Furthermore, woodlots in riparian zones must only have native tree species and no harvesting activities are permitted for the duration of the project (minimum of 30 years). A minimum of 10% of the project area will be identified and managed to protect or enhance the biological diversity of native ecosystems.

To ensure the quality of the seedlings, seven tree nurseries were identified in March 2018 across the basin. The nurseries were requested to source certified seeds from the Kenya Forestry Research Institute and provide official receipts as evidence. WWF technical team have also engaged a Kenya Forest Service Forester to oversee seedling development at the nurseries and also during collection to ensure good quality.

All participating farmers will be given full training on all aspects of both the establishment and long term management of their reforestation system. The training includes workshops, practical demonstrations and one to one guidance on land specific issues, which will be covered during site monitoring visits. The specific items that should be covered during the training are:

<u>Establishment phase</u> - before planting and up to year 3 after planting

1. Site preparation
2. Land demarcation
3. Handling of tree seedlings
4. Preparation of planting pits
5. Inter-cropping options and management of crops between trees
6. Tree planting design (which tree species go where)
7. Spacing between trees

8. Timing of planting to minimise risk of mortality
9. Tree seedling protection
10. Organic fertilization
11. Irrigation and watering
12. Weeding
13. Formative pruning
14. Replacement of dead trees

Management phase - years 4 to 7 after planting

1. Tree protection
2. On-going inter-cropping for agroforestry
3. Pruning
4. Thinning operations
5. Community monitoring

The monitoring system will be constructed with the community and is expected to increase capacity for project participants through supporting the monitoring of plantations, impact on water resources and impact on land use (in accordance with the indicators described below for each SDG).

A.6. Scale of the project

The project is small scale. The farmers selected will have more than 50% of farm work done by family members, cooperative members or neighbours.

A.7. Funding sources of project

The project will be initially funded by Coop Switzerland for 7 years or until 42,000 tCO_2 emission reductions is reached. It will then be sustained through the sale of carbon credits gained throughout the project lifetime.

A.8. Assessment that project complies with 'gender sensitive' requirements

Question 1: Does the project reflect the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy? Explain how.

In April 2011 WWF published its gender policy. For WWF gender "refers to socially constructed roles, responsibilities and opportunities associated with women and men in specific societies, times and places". In this sense, several commitments are determined for the development of its programs and projects, which are summarized below:

- Include a gender perspective and analysis in the project development cycle, including design and implementation, monitoring and evaluation.

- Evaluate the potential impact of programmes and projects on gender equity.

- Consider and respect, within programmes and projects developed in local communities, the cultural differences, roles, responsibilities, established rights, and knowledge of women and men.

- Examine how community policies, processes, and institutions affect gender equity to identify how they operate in relation to programs and projects to provide options that promote equity within them.

- Expand WWF's knowledge of and commitment to social equity through training and sharing of lessons learned with WWF staff.

WWF has been responsible for complying with its gender policy and the requirements of the Gold Standard related to the topic. The risk analysis of the gender-related project was carried out in a participatory manner in the local consultation meetings with local actors, where mitigation measures were determined and included in the monitoring plan.

At the meetings in Tumaini, Wanjohi, Murwaki, Captain, Wanjohi, the limited access to resources, rights and benefits to women was mentioned as a potential risk; the participants also see the potential risk in the recurring discrimination against women, especially during harvest periods when men can take all the earnings obtained from the harvested trees and other benefits of the project.

As a measure to mitigate this risk, the stakeholders proposed opening dialogue between the husbands and the wives in order to reach consensus on where to implement the plantations, how to distribute their benefits, and how to include of all the members of the family in the activities of the project. Additionally, WWF will propose to the families the elaboration of a family investment plan in which the investment in collective benefits for all can be reflected.

At the meetings in Wanjohi and Ngonji, attendees considered the increase in women's work a potential risk caused by the implementation of project activities. The mitigation measure proposed is related to the intervention of the WWF in strengthening the dialogue within family institutions so that they can reach agreements on the work distribution. Families will also be provided with an occupational safety and health protocol that gives safety guidelines for field work and for the distribution of project activities according to the capacity and availability of men, women and children.

It must be said that according to its principles, the WWF will provide opportunities for people to engage in open discussions on gender issues and then agree on the most appropriate conditions for everyone.
In relation to this same principle, on whether there is a possibility that the project exposes women to additional risks or dangers, it was considered in the evaluation that the project could expose women or girls to injuries that could be caused by pruning and thinning activities.

However, at the meetings in Ndunyu Njeru, Tumani, Cereas-Leleshwa, Captain, Njabini, Wanhoji and Lower Gilgil, the stakeholders also considered that there is a potential possibility of exposing women and girls to dangers when the plantations grow and forest areas are established parallel to the routes taken by women to get to the shopping centers. Indeed, forest areas could harbor bad people, exposing women who, in most cases, are the ones who go to shopping centers to buy household items. The aforementioned mitigation measures will help to select the plantation sites appropriately in order to avoid the formation of dense wooded areas with poor visibility alongside common routes. It is preferable to have plantations far from the road and to carry out regular pruning to allow visibility through the forest. Additionally, it was mentioned that, in the event of a security breach due to these variables, the number of Kenya World Life (KWS) officers in the affected areas will immediately be increased to mediate the issue.

In the other meetings where this risk was not clearly identified, it was mentioned that women are usually accompanied. At the meeting in Olturonto, attendees said that over the years there has been an increase in awareness around gender issues, where respect for women and girls in the community has improved drastically. This area does not have situations of risk such as insecurity or abuse. In case there is any, security will be reinforced.

Question 2: Does the project align with existing country policies, strategies and best practices? Explain how.

WWF adopts a more respectful and inclusive way of managing women's opinion and participation, in order to benefit all employees, not only to women. The programs and projects managed and developed by WWF match its gender policy and the national Constitution of Kenya, passed in 2010, which addresses gender inequality and ratifies the right to equal opportunities for men and women, seeking to remedy the traditional exclusion of women and promote their full participation in all dimensions of social development.

WWF takes into account and respects all cultural differences, roles and responsibilities, as well as statutory rights; therefore, throughout the development of the project, it will promote a gender approach among partner families so that results achieved are equitably reflected both on men and women.

Question 3: Does the project address the questions raised in the Gold Standard Safeguarding Principles & Requirements document? Explain how.

The participants were taken through the meaning and importance of this exercise to the project. Each of the three categories (Environment, Social and technological and Economic) were explained in detail. Each and every

question was read out to them and elaborated in the language they understood better while giving them relevant examples. The participants were given time to internalize and critically evaluate the question prior to giving their response. At this point, the participants were also given a chance to seek for clarification on questions that were not clear before their individual responses. In cases where there was no consensus, the plenary was opened for further discussions among themselves until a collective agreement was reached. In cases where the response to the assessment question was affirmative and in favour of both the project and the community, only the justification was recorded. Otherwise, a justification and mitigation measure suggested by the community was agreed and recorded. The responses were recorded as "Yes", "Potentially" or "No" depending on the assessment question.

It was not possible to insert the entire conversation in the matrix, but audio recordings were taken to ensure accurate documentation after each meeting. Generally, in all the meetings, heated discussions pitted women against men and vice versa. During such times, as mentioned earlier, the debate was allowed to continue until an agreement, or a mitigation measure was obtained.

Question 4: Does the project apply the Gold Standard Stakeholder Consultation & Engagement Procedure, Requirements & Guidelines? Explain how.

Working through the WRUAs, CFAs, a forester and the local administration across the basin, stakeholders were invited to the LSC meetings by Text messages, phone calls, emails and public notices one month prior to the meetings. Follow up phone calls were made to confirm participation. The choice of the venues, dates and times was made by the lead institutions in consultation with the local administration as the period during which the LSCs were conducted there was political instability in Kenya and therefore the government needed to be aware of all the public meetings. All the guests and their relevant details were recorded in the Invitation tracking table as suggested by The Gold Standard.

All formats and evidence from the consultation process are described and listed in the LSC report.

SECTION B. Application of selected approved Gold Standard methodology

B.1. Reference of approved methodology

The methodology selected for the calculation of GHG Sequestration is "Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology, Version 1 – Published in July 2017".

B.2. Applicability of methodology

1. Planting of trees on land that does not meet the definition of forest.

To comply with this condition, an eligibility analysis was performed for the planted area up to 2017 and the projected area to be planted.
For additional information on planting trees on land that does not meet the definition of forest, refer to section A.2 of this document.

2. Project areas shall not be on wetlands

This category includes "land that is covered or saturated by water for all or part of the year (e.g. peatland) and that does not fall into the forest land, cropland, grassland or settlements categories" (IPCC, 2014).
The project area mainly consists of grassland and cropland. Only 0.6% of the catchment zone is wetland and will not be included in the project area.
Kenya has an official wetland identification, as shown in the map below (see Figure 6). However, the scale is so large that it does not reflect small wetlands, for which, with the help of the coordinators, community and WWF staff, a questionnaire has been developed to fill out on siteto assist in the identification of the wetlands at the local level. Please, refer to the format used titled 'Wetland identification' located under the Supporting documents folder.

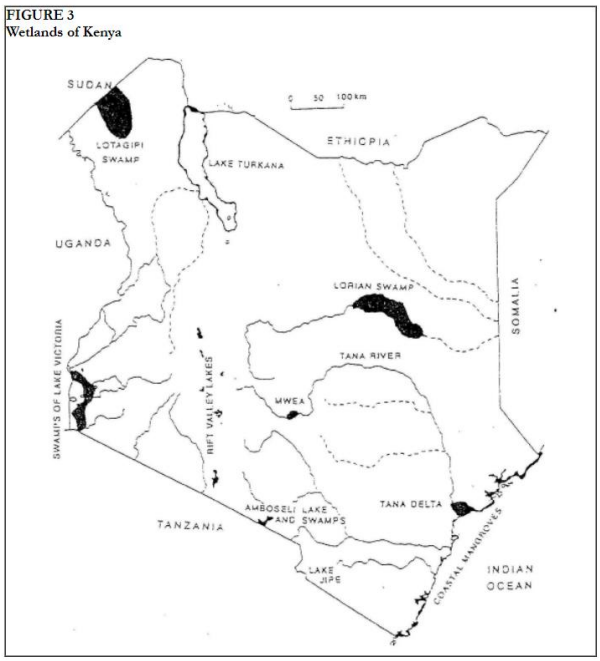

Figure 6. Wetlands of Kenya[4] (FAO 2013)

3. Project areas with organic soils shall not be drained or irrigated (except for irrigation for planting)

The methodology defines organic soils as follows:

1. If the soil is never saturated with water for more than a few days and contains more than 20% organic carbon in terms of weight (35% organic matter).
2. If the soil is subject to water saturation episodes and has either:
   - 12% (by weight) organic carbon (20% organic matter) if it has no clay
   - 18% (by weight) organic carbon (30% organic matter) if it has more than 60% clay
   - A proportional lower limit of organic carbon content between 12 and 18% if the clay content of the mineral fraction is between 0 and 60%.

4 http://www.fao.org/docrep/003/X6611E/x6611e02a.htm

According to the definition and based on the soil type map of the catchment presented below, the soil types present in the project area are not organic and thus, this requirement is met.

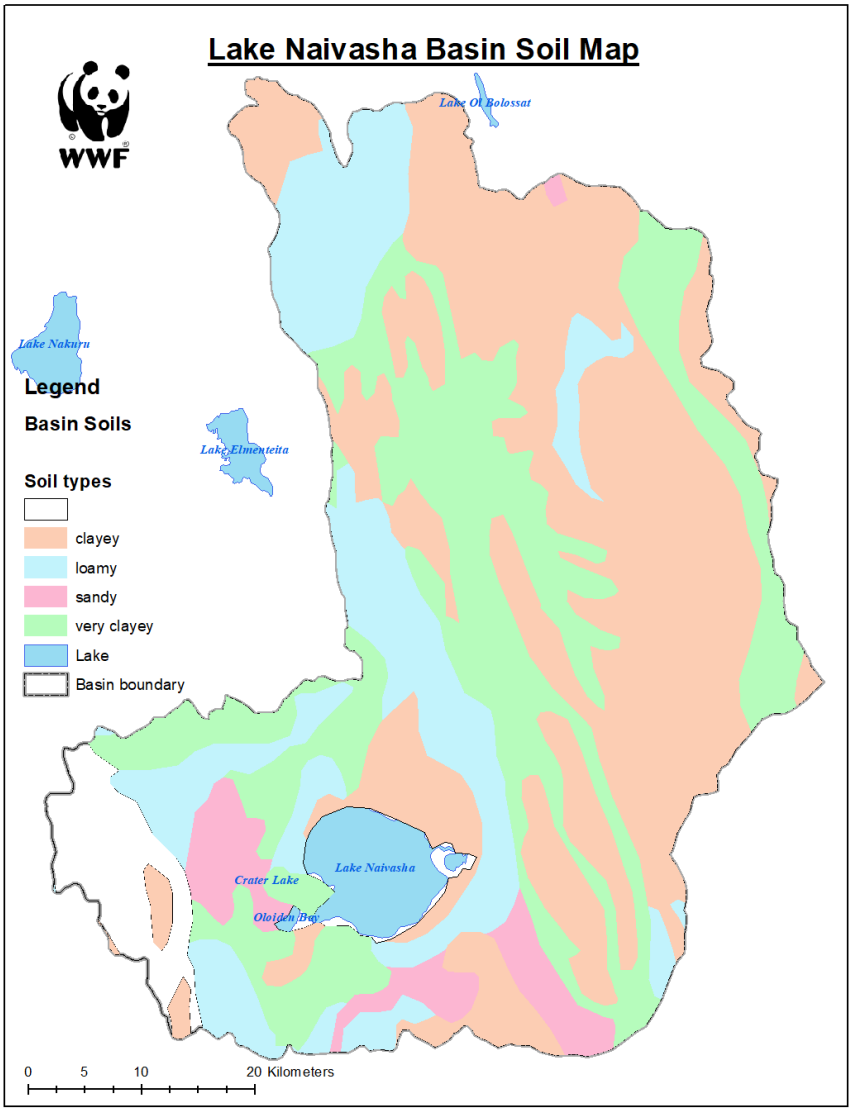

Figure 7. Lake Naivasha basin soil types

In addition to this, soil disturbance will take place in less than 10% of the area that is submitted for certification. Given the information outlined in above, this requirement does not apply.
Also, the project areas identified to be planted have livestock and agriculture as the land use for the baseline, which does not cause an increase of the biomass due to the management of such areas.

B.3. Project boundary

The project is being established in land that belongs to the local community. The landowners can voluntarily join the project. The portions of the property that are going to be planted are marked using sticks and the polygons are also recorded as already presented in the section Key Project Information. A summary of the activities is presented on Figure 8.

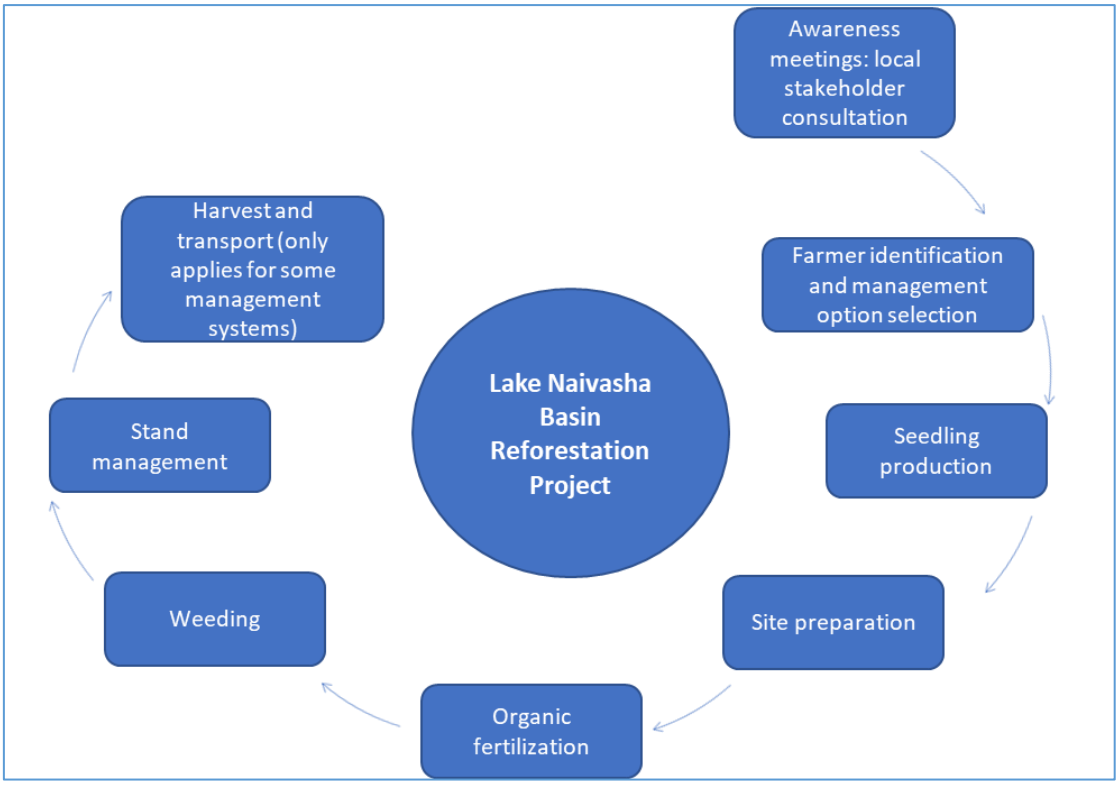

Figure 8. Flow diagram of the activities of the project

For the purpose of GHG mitigation/sequestration following table shall be completed (delete if not required)

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Source 1: Aboveground biomass	CO_2	Yes	All grass and shrubs existing in the plantable area will be accounted for following the requirements for baseline carbon stocks estimation put forward by the methodology.
		CH_4	No	N/A
	Source 2: Belowground biomass	CO_2	Yes	Belowground biomass will be included in the baseline estimations in accordance with the applied methodology.
		CH_4	No	N/A
		N_2O	No	N/A
	Source 3: Soil	CO2	No	The project does not include disturbance of organic soils. Emissions are not expected in this compartment, however this source can be included in the future.
	Source 4: Other sources	N_2O	No	Using a conservative approach, it was assumed that the baseline scenario does not include the use of fertilizers. Emissions are not expected from this activity.
Project scenario	Source 1: Aboveground biomass	CO_2	Yes	During each cycle, trees will grow, sequester and stock carbon on their trunk, branches and leaves.
		CH_4	No	N/A
	Source 2: Belowground biomass	CO_2	Yes	While trees are growing there will be capturing and stocking carbon on their roots. Those roots will not be removed; as a result, the carbon will remain stored.
		CH_4	No	N/A
		N_2O	No	N/A
	Source 3: Soil	CO_2	No	Soil was not included, but this source might be included in the future.
	Source 4: Other sources	N_2O	No	No fertilization using nitrogenated sources will be used.

B.4. Establishment and description of baseline scenario

The baseline scenario was developed in accordance with the GS4GG Principles & Requirements. Please, refer to fold Supporting documents, Additionality document, section Step 1 for the full development of the baseline scenario.

B.5. Demonstration of additionality

For demonstration of additionality, please refer to fold Supporting documents, Additionality document.

Specify the methodology or activity requirement or product requirement that establish deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	**Combined tool to identify the baseline scenario and demonstrate additionality, Version 7.0**
Describe how the proposed project meets the criteria for deemed additionality.	The Lake Naivasha area is a prime area for agriculture development and urban expansion. This is due to a mix of availability of resources and foreign investment in the horticulture/floriculture business, which represents an extremely vigorous exportation market. The cut flower industry has seen its market value expanding 6 times its value from 1995 to 2014, being the biggest exporter country worldwide (Adeya, 2006). Also, the horticulture activities represent a good business opportunity, for small scale and industrial producers as well. The financial opportunities motivate the influx of people to the Lake Naivasha area, which is reflected in the vigorous urban expansion. The rising population exacerbates the need for agricultural land and livestock rearing in order to sustain the internal market. There is access to credit and funding and incentives to develop these activities. In the case of floriculture and horticulture, there is foreign investment and the market for these products is prominent, domestically but mostly internationally. These activities do not encounter any substantial barrier that impedes its continuous establishment. On the other hand, forestry activities seem to find several constraints. It finds strong competition from the other land uses, namely a higher opportunity cost, as the financial return is much longer. Furthermore, the market for forest products is not as developed as for the floriculture/horticulture products. This also makes these areas prone to encroachment or clearing, with the objective to establish other land uses. It also faces lack of investment or other types of financial incentives. It is virtually impossible to landowners establish forested areas without financial support. Finally, the strong demographic pressure in the area causes over use of the forestry resources, causing forest degradation and deforestation. These particularities represent real barriers to the development and thriving of this land use, putting the forest cover conservation and development at risk in this area. Please, refer to the Gold Standard for the Global Goals - Additionality Requirements for Afforestation/Reforestation Projects – Version 1 (July 2017) to see the full additionality analysis development.

B.6. Sustainable Development Goals (SDG) outcomes

B.6.1. Relevant target for each of the three SDGs

SDG	Target
6 (Clean water and sanitation):	1. By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes. 2.Support and strengthen the participation of local communities in improving water and sanitation management .
13 (Climate action)	1. Improve education, awareness-raising and human and institutional capacity for climate change mitigation, adaptation, impact reduction and early warning. 2. Promote mechanisms for raising capacity for effective climate change-related planning and management in the least developed countries and small island developing states, including focusing on women, youth and local and marginalized communities
15. Life on land	1. By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally. 2. By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

B.6.2. Explanation of methodological choices/approaches for estimating the SDG outcome

All the SDGs will be monitored, however only the effects on SDG 13 will be estimated using a methodology presented in the Gold Standard Afforestation/Reforestation (A/R) GHG Emissions (Reduction & Sequestration Methodology).
SDG #6. Clean water and sanitation
There is not a Gold Standard methodology for estimating the outcome of this SDG. According to GS Methodology for Accreditation of Water Benefit Certificates, monitoring must follow the procedures for sustainable development, and do-no-harm impact assessment specified in the Gold Standard Foundations Requirements documents. Particular attention should be paid to ensuring the project does not conflict with the human right to access to clean water; also, to maximization of equitable benefit without large disparities in WBCs generated by project population sub-groups. The following methodology will be applied to estimate the contribution of the project to this SDG:

Protect and restore water-related areas:
The protected and restore water – related areas will be monitoring each verification period and perform a historical hedge comparison, as well as monitor progress in the net gain cover associated with project activities.

The indicator is: Change in the extent of water-related ecosystems over time and will be measure: Hectares conserved in a year X1/ Hectares in conservation coverage at baseline, where X1 is the year of the verification.

This analysis will be used for monitoring mountains, forests, wetlands, rivers, aquifers and lakes, inside the project area.

Participation of local communities

The indicator is: Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.

To monitor the impact of the project in support and strengthen the participation of local communities in improving water and sanitation management, the WWF-K or the organization that will be in charge during the performance certification and the WRUAS will develop a survey during each performance certification period that include questions about the benefits of the project in terms of activities to improve the watershed and to build capacities that the project support, in relation with quality and quantity of the water.

The survey will include at least the following questions:
- Do you understand the relationship between forest and water quality and quantity?
- How do you perceive the water quality of the basin? Bad, regular or good
- Do you consider your basin to be water-scarce?
- Have you identified improvements in water quality and quantity after the implementation of the reforestation project?

The answer to the survey will be compared through the time and the measure of this indicator is qualitative.

SDG #13. Climate action
The proposed project activity is a mechanism for raising capacity for effective climate management in the country. The suggested way of measuring the contribution of the project to this SDG and specific target is estimating the amount of CO2 removed by the project activities. The methodology used for its estimation is presented in the Gold Standard Afforestation/Reforestation (A/R) GHG Emissions (Reduction & Sequestration Methodology). It is summarized below.

Calculation of CO_2 certificates
The number of CO_2-certificates is determined for every year (t) of the crediting period for each Modelling Unit using the following formula:

$$CO_2 certificates = \left(CO_{2-fixation} - Baseline - Leakage - Other\ Emissions\right) * Elegible\ planting\ area$$

Baseline and leakage are deducted in year 1, the other emissions are deducted over time. The baseline for the agroforestry system is zero because the farmers will establish the agroforestry systems in areas where they used to produce crops in the baseline and they will continue to growth those crops during the project crediting period.
The total CO_2 certificates for the project area are estimated as follow:

$$CO_{2-certificates\ Project\ area} = \sum_{MU=1}^{MUs} \sum_{t=1}^{CP} CO_{2\ certificates\ MU,t}$$

Where:
CO_2-certificates Project area, t = [tCO_2] CO_2-certificates of a project area in year t
CO_2-certificates MU,t = [tCO_2] CO_2-certificates of a MU in year t
MUs = 1, 2, 3, … MUs of a project area
t = 1, 2, 3, … Years of the crediting period
CP = [ ] Year the crediting period ends
The carbon pools taken into account are shown in Table 12.

Table 12. Carbon pools accounted for in the project

Carbon Pools		**Includes**	**CO_2-Fixation**	**Baseline**	**Leakage**
Tree biomass	Aboveground	Stem, branches, bark	Yes	Yes	Yes
	Belowground	Tree roots	Yes	Yes	Yes
Non-tree biomass	Aboveground	Grass, herbs, etc.	No	Yes	No
	Belowground	Roots of grass, herbs, etc.	No	Yes	No
Soil		Organic material	No[5]	No	No
Harvested wood (timber & energy wood)		Furniture, construction material, etc.	No	No	No
Litter & lying dead-wood		Leaves, small fallen branches, lying dead wood	No	No	No

- CO_2 fixation

Aboveground tree biomass was estimated with the following formulas:

$$CO_{2-fixation} = (Aboveground\ tree\ biomass + Belowground\ tree\ \ biomass) * CF * C\ to\ CO_2 factor$$

[5] Soil carbon was not included in this version, but might be included in the final version of the PDD for the Design Certification.

$$Aboveground\ tree\ biomass = Stem\ volume * BEF * W_d$$
$$Stem\ volume = MAI * t$$
$$Belowground\ tree\ \ biomass = aboveground\ tree\ biomass * (1 + R)$$

Where:
MAI= Mean Annual Increment in m^3/ha
t= time in years
BEF= Biomass Expansion Factor (value specified in section B.6.3)
W_d= Wood density in (t/m^3) (value specified in section B.6.3)
CF= Carbon Fraction (value specified in section B.6.3)
$C\ to\ CO_2\ factor$= value specified in section B.6.3
R=Root-to-shoot ratio (value specified in section B.6.3)

- Baseline: The eligible area was stratified according to the land cover (Table 13). As all the areas that will be planted have not been identified yet, a conservative approach was used where a land use with high carbon stock is used for the ex ante estimations. This will be updated once the areas have been identified.

Table 13. Land cover type by area in the Lake Naivasha Basin (2016)

Land cover type	2016 area (ha)	Cover % (2016)
Annual cropland	155,320	45.2
Built up	2,720	0.8
Grassland	15,865	4.6
Natural forest	36,324	10.6
Perennial cropland	7,629	2.2
Planted forest	6,127	1.8
Shrubland	103,299	30.1
Waterbody	13,953	4.1
Wetland	2,066	0.6
Total	343,303	100.0

The equation used was:

$$Baseline_{stock} = Area_{stratum,i} * Carbon\ stock_{stratum,i}$$

- Leakage: Leakage is not expected to occur due to the project activities and is deemed to be zero. The main activities that could cause leakage are agriculture and livestock. The land where the plantations will be established was chosen with the landowner by identifying areas that were not previously productive. For livestock, the landowner will move the livestock to within the area and once the trees reach a certain height, livestock will be allowed in the plantation areas. Therefore, leakage will not occur in the project area.

- Other emissions: No emissions are generated by site preparation as no trees or bushes are being burned for site preparation. Other emissions could be generated by the use of nitrogen (N) fertilizers, however this is not common practice and will be monitored if adopted by the farmers.

SDG #15. Life on land
There is not a Gold Standard methodology for estimating the outcome of this SDG. The indicator that will be evaluated will be the 15.1.1: Forest area as a proportion of total land area. The following methodology will be applied to estimate the contribution of the project to this SDG:

$$FAP_i = \frac{TA_{forest_i}}{PA} * 100$$

Where,

FAP_i = Forest Area Proportion at year i (%)

TA_{forest_i} = Total Area covered by forest at year i (ha)

PA = Project Area (ha)

TA_{forest_i} and PA_i must be measured annually using the data from the Geographical Information System (GIS). Forest definition is taken from the UNFCCC official website (http://cdm.unfccc.int/DNA/index.html).

The net benefit of this SDG is estimated as follows:

$$NB_{SDG15,i} = FAP_{PS,i} - FAP_{BS,i}$$

Where:

$NB_{SDG15,i}$ = Net benefit for SDG#15 at year i

$FAP_{PS,i} = FAP_i$ in the project scenario at year i

$FAP_{BS,i} = FAP_i$ in the baseline scenario at year i

In this case $FAP_{BS,i}$ is estimated as zero because without the implementation of the project activities, there would not be new planted areas in the region.

B.6.3. Data and parameters fixed ex ante for monitoring contribution to each of the three SDGs

SDG #6

Relevant SDG Indicator	Change in the extent of water-related ecosystems.
Data/parameter	Time series of land cover use. Hectares conserved in a year X1/ Hectares in conservation coverage at baseline, where X1 is the year of the verification. Conservation include: natural ecosystems and restoration areas inside the project area that will management and impact for the project.
Unit	Hectares
Description	Hectares in conservation (protection and rehabilitation) compared with baseline cover.
Source of data	Lake Naivasha Basin Land Use and Cover 2016. WWF Kenya Figure 2.
Value(s) applied	N/A
Choice of data or Measurement methods and procedures	The data used was based on primary and secondary information
Purpose of data	Estimation of conservation cover in watershed
Additional comment	

SDG #13

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	Wood density
Unit	kg/m3
Description	Mass per unit volume of wood
Source of data	Global wood database. Chave J, Coomes DA, Jansen S, Lewis SL, Swenson NG, Zanne AE (2009) Towards a worldwide wood economics spectrum. Ecology Letters 12(4): 351-366. https://doi.org/10.1111/j.1461-0248.2009.01285.x. Available at: http://bit.ly/1LA74HB.
Value(s) applied	Depends on the species, more information is available in the ER estimation excel document.
Choice of data or Measurement methods and procedures	The data used was based on the literature consulted.
Purpose of data	Estimation of GHG Emission Reductions and Removals
Additional comment	

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	Biomass Expansion Factor (BEF1)
Unit	Dimensionless
Description	Ratio of aboveground oven-dry biomass to the oven-dry biomass of the steam.
Source of data	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology
Value(s) applied	1.1
Choice of data or Measurement methods and procedures	The aboveground tree biomass is calculated using the BEF1 in connection to Increment in Volume.
Purpose of data	Estimation of GHG Emission Reductions and Removals
Additional comment	

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	Root-Shoot-Ratio (R)
Unit	Dimensionless
Description	Ratio of the weight of the roots to the weight of the top of the tree. Used for belowground tree biomass estimation.
Source of data	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology
Value(s) applied	0.2
Choice of data or Measurement methods and procedures	Belowground biomass is usually estimated as sampling is destructive and expensive.
Purpose of data	Estimation of GHG Emission Reductions and Removals

Additional comment	

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	tC/t d.m.
Unit	Percentage
Description	Percentage of the biomass of the tree that is carbon
Source of data	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology
Value(s) applied	0.5
Choice of data or Measurement methods and procedures	Estimation of GHG Emission Reductions and Removals and Baseline emissions.
Purpose of data	Carbon Fraction (CF)
Additional comment	

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	CO2e
Unit	tCO2/tC
Description	Factor applied to convert the tree carbon sequestered to tree CO2e sequestered.
Source of data	Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology
Value(s) applied	44/12
Choice of data or Measurement methods and procedures	IPCC default value.
Purpose of data	Estimation of GHG Emission Reductions and Removals and Baseline emissions.
Additional comment	

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	Plot area
Unit	m2
Description	Total area of the plots used for forest inventories.
Source of data	PDD document
Value(s) applied	250 m2 or 500 m2 (depending on the management system used)
Choice of data or Measurement methods and procedures	Circular plots of 250 m2 will be used for collecting data on woodlot systems. Rectangular plots of 500 m2 will be used for collecting data in agroforestry system.
Purpose of data	Estimation of GHG Emission Reductions and Removals and Baseline emissions.
Additional comment	Plot size might change if a new forest inventory procedure is established.

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	Sampling error
Unit	%
Description	This refers to the estimated sampling error in the forest inventory, estimated as presented in section B.7.2.

Source of data	Gold Standard AR methodology
Value(s) applied	20
Choice of data or Measurement methods and procedures	The values are established by the GS4GG
Purpose of data	Estimation of GHG Emission Reductions and Removals and Baseline emissions.
Additional comment	If the error is greater than the value applied, a deduction of CO2 certificates will be done according to the GS rules.

Relevant SDG Indicator	tCO2 emission reduction
Data/parameter	Carbon stock shrubland
Unit	tC/ha
Description	Average carbon stock of the land cover in the baseline scenario.
Source of data	Data from the literature. Please, refer to ER estimation' folder; 'Supporting documents'; 'Baseline', Pellikka et al, page 5.
Value(s) applied	2.6
Choice of data or Measurement methods and procedures	The value is presented for the region and it is based on an extensive literature.
Purpose of data	Estimating baseline carbon emissions.
Additional comment	

SDG #15

Relevant SDG Indicator	FAP_i
Data/parameter	PA
Unit	Ha
Description	Project Area as per Gold Standard definition
Source of data	GIS
Value(s) applied	
Choice of data or Measurement methods and procedures	See section B.6.2.
Purpose of data	Estimation of the Forest Area Proportion
Additional comment	

Parameters associated with the safeguarding principles assessment

Relevant indicator	Families who meet the family investment plan
Data / Parameter	Proportion of family investment plans implemented
Unit	%
Description	Number of investment plans implemented compared to the number of families participating in the project
Source of data	Surveys and field visit
Value(s) applied	At each performance certification
Measurement methods and procedures	The data will be collected during the field visit using a survey and visual verification.
Monitoring frequency	At each performance certification

QA/QC procedures	
Purpose of data	Monitoring the compliance of the safeguarding principle 2: Gender Equality and Women's Rights, assessment question "Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits?"
Additional comment	

Relevant indicator	Farmers who state that the family investment plan allowed them to better manage the profits obtained from the project's plantations.
Data / Parameter	Proportion of farmers surveyed who answered yes to this question (See survey format item 1. family investment plans - Question 1.9)
Unit	%
Description	Number of affirmative answers vs. number of people surveyed
Source of data	Surveys
Value(s) applied	At each performance certification
Measurement methods and procedures	The data will be collected during the field visit using a survey and visual verification.
Monitoring frequency	At each performance certification
QA/QC procedures	
Purpose of data	Monitoring the compliance of the safeguarding principle 2: Gender Equality and Women's Rights, assessment question "Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits?"
Additional comment	

Relevant Indicator	Number of persons attending awareness training related to Safety and occupational health
Data/parameter	Number of persons attending awareness training related to Safety and occupational health
Unit	Number of persons
Description	Number of persons attending to the awareness training related to Safety and occupational health
Source of data	Attendance list
Value(s) applied	To be monitored at each performance certification
Measurement methods and procedures	The awareness trainings will have a strategy to verify if the attendants understood the topics presented.
Monitoring frequency	At each performance certification
QA/QC procedures	For all performed workshops, it will be verified that all the attendants fill out the attendance lists and that all the fields of this list are completed for each person. The original attendance lists will be kept in case any inconsistency is detected when estimating this indicator.
Purpose of data	Monitoring the compliance of the safeguarding principle 2: Gender Equality and Women's Rights, assessment question "Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities? – and the principle 3: Community health, safety and working conditions, mandatory requirement: The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community "
Additional comment	All trainings must have a section in which the comprehension of the topics explained is evaluated.

Relevant SDG Indicator	Farmers comply the “Farmers Contract Agreement” obligations
Data/parameter	Proportion of farmers who comply with the "Farmers Contract Agreement" obligations
Unit	%
Description	Number of signed agreements in 2019 vs. number of homeowners who continue to be bound to the project in 2024.
Source of data	Farmers Contract agreement
Value(s) applied	To be monitored at each performance certification
Measurement methods and procedures	Monitoring of compliance with signed agreements.
Monitoring frequency	At each performance certification
QA/QC procedures	
Purpose of data	Monitoring the compliance of the safeguarding principle 2 Gender Equality and Women’s Rights through the fulfilment of the obligations signed in the “Farmers Contract Agreement"
Additional comment	

Relevant SDG Indicator	Number of grievances received associated with access to land
Data/parameter	Number of grievances received associated with access to land
Unit	Number
Description	Number of grievances received through the Community Grievance Mechanism associated with access to land. For instance: - Workload caused by project activities - Inequitable distribution of benefits - Loss of crops caused by project activities - Loss of cultivation land
Source of data	Record book of comments received through the complaints and grievances mechanism
Value(s) applied	To be monitored at each performance certification
Measurement methods and procedures	The procedures to receipt and process the grievances are stated in the Community Grievance Mechanism.
Monitoring frequency	At each performance certification
QA/QC procedures	
Purpose of data	Monitoring the compliance of the safeguarding principle 3.2: Gender Equality and Women’s Rights, assessment question “Is there a possibility that the Project might reduce or put at risk women’s access to or control of resources, entitlements and benefits? - Does the Project design contribute to an increase in women’s workload that adds to their care responsibilities or that prevents them from engaging in other activities? - Would the Project potentially limit women’s ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services? - ”
Additional comment	

B.6.4. Ex ante estimation of outcomes linked to each of the three SDGs

SDG 13 was the only SDG considered for monetization and consequent ex ante estimation. As such, CO_2 emission reduction was estimated for the forest plantations for both the agroforestry and woodlots management systems that will be used in the project.

Carbon estimations were developed following the AR methodology. The process is described briefly in section B.6.2. The detailed estimations are presented in the supporting folder ER estimations.

B.6.5. Summary of ex ante estimates of each SDG outcome

SDG #6

Although the project will not claim any certificate from this SDG , the SDG outcomes corresponding to the SDG 6 and its two indicators will be reported during the next stages when the project activities are implemented (the ex-ante estimations are included under section B.6.2).

For the indicator **Change in the extent of water-related ecosystems,** the baseline is 1100 Ha, of which 10% are in a state of conservation and 90% in a state of restoration through tree planting.

For the indicator **Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management,** the baseline is not determined because, currently we do not have identified the total number of families involved in the project. The baseline will be presented for the first performance certification.

SDG #13

The outcomes corresponding to the SDG 13 are presented in Table 14. After estimating the long-term average according to the GS methodology, a total of 178,347 tCO_2 was estimated as the total carbon reduction generated by the project.

Table 14. SDG 13 Outcomes

Year	Baseline estimate (tCO_2)	Project estimate (tCO_2/year)	Net benefit[6] (tCO_2)
Year 1	-4,690	0	0
Year 2	0	5,037	4,281
Year 3	0	10,133	8,613
Year 4	0	10,133	8,613
Year 5	0	10,133	8,613
Year 6	0	10,029	8,524
Year 7	0	9,472	8,051
Year 8	0	8,611	7,320
Year 9	0	8,635	7,340
Year 10	0	8,069	6,859
Year 11	0	7,026	5,972
Year 12	0	6,542	5,561
Year 13	0	6,952	5,909
Year 14	0	7,905	6,719
Year 15	0	6,905	5,869
Year 16	0	6,789	5,771
Year 17	0	6,349	5,396
Year 18	0	6,235	5,300

[6] For details about these estimations see the supporting folder ER estimations.

Year	Baseline estimate (tCO_2)	Project estimate (tCO_2/year)	Net benefit[6] (tCO_2)
Year 19	0	6,235	5,300
Year 20	0	6,235	5,300
Year 21	0	6,133	5,213
Year 22	0	6,337	5,387
Year 23	0	6,235	5,300
Year 24	0	6,235	5,300
Year 25	0	6,235	5,300
Year 26	0	6,235	5,300
Year 27	0	6,235	5,300
Year 28	0	6,235	5,300
Year 29	0	6,235	5,300
Year 30	0	6,235	5,300
Total	--	--	178,311
Total number of crediting years	30		
Annual average over the crediting period			5,944

SDG #15

Although the project will not claim any certificate from this SDG, the SDG outcomes corresponding to the SDG 15 will be reported during the next stages when the project activities are implemented (the ex-ante estimations are included under section B.6.2). The baseline is zero because all the eligible areas are non-forest, therefore the forest area as a proportion of total land area is zero for the baseline because the project are can only included non-forest land.

B.7. Monitoring plan

This monitoring plan provides guidance on monitoring and standard operational procedures for the reforestation project activity. This monitoring plan fulfils the requirement that the project activity should have credible and accurate monitoring procedures in place to enable the evaluation of project performance and verification of the net anthropogenic GHG emission removals.

During the monitoring process, the senior personnel overseeing the project activity will verify the data collected by field staff. The project will implement procedures that ensure independent verification. Attention will be paid to monitoring and measurement errors. This issue will be addressed through mandatory data checks and training of field personnel.

Only the aboveground biomass of trees and shrubs will be measured. Therefore, only the individual growth of trees will be monitored in the inventory plots.

The belowground carbon content and standing dead wood will also be assessed. These will be estimated by using default values and suggested methods as per Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology. Root-to-shoot ratio (R) will be used for estimation of belowground biomass given the aboveground measures.

B.7.1. Data and parameters to be monitored

Monitoring of SDG indicators:

SDG#6: Clean water and sanitation

Relevant SDG Indicator	Change in the extent of water-related ecosystems
Data/parameter	Time series of land cover use. Hectares conserved in a year X1/ Hectares in conservation* coverage at baseline, where X1 is the year of the verification. *Conservation include natural ecosystems and restoration areas inside the project area that will management and impact for the project.
Unit	Hectares
Description	Hectares in conservation (protection and rehabilitation) compared with baseline cover.
Source of data	Lake Naivasha Basin Land Use and Cover 2016. WWF Kenya Figure 2.
Value(s) applied	Not applicable
Measurement methods and procedures	The data will be collected based on primary and secondary information
Monitoring frequency	For every Performance Certification
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures.
Purpose of data	Estimation of conservation cover in watershed
Additional comment	
Relevant SDG Indicator	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.
Data/parameter	Time series of surveys in relation with community's participation.
Unit	Number of families with a representative that participate in local administrative units for decision making.
Description	WWF-K or a similar organization that will be in charge during the performance certification and the WRUAs will develop a survey each performance certification period that includes questions about the benefits of the project in terms of activities to improve the watershed and to build capacities that the project support, in relation with quality and quantity of the water.
Source of data	Surveys developed with local stakeholders
Value(s) applied	N/A
Measurement methods and procedures	Primary information
Monitoring frequency	Annual
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures.
Purpose of data	To know and measure the theory of change in communities in relation to the good administration of water resources in the watershed.
Additional comment	

SDG#13: Climate action

Relevant SDG Indicator	Number of people form the local community attending awareness sessions on the environment and climate change
Data / Parameter	Number of people attending the meetings
Unit	Number
Description	Number of people from the local community attending awareness sessions on the environment and climate change.
Source of data	WWF-Kenya
Value(s) applied	To be determined in the first year after validation.
Measurement methods and procedures	Number of people from the local community attending awareness sessions
Monitoring frequency	Annually
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures
Purpose of data	To record the number of people attending these sessions.
Additional comment	

Relevant SDG Indicator	Basal area
Data / Parameter	Basal area (π (DBH/2)2)
Unit	m^2/ha
Description	The sum of the basal area of all live trees in a forest stand. The basal area of a tree is the cross-sectional area of its trunk measured at 1.3 m height, over the bark.
Source of data	WWF-Kenya
Value(s) applied	Dependent on the age of the stand and the date of the inventory.
Measurement methods and procedures	This value depends on the DBH.
Monitoring frequency	At least once every 5 years
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures
Purpose of data	To use this information on the carbon estimations.
Additional comment	

Relevant SDG Indicator	Volume per hectare
Data / Parameter	Volume
Unit	m^3/ha
Description	Volume of wood
Source of data	Forest inventory
Value(s) applied	Depend on the age of the stand and the date of the inventory.
Measurement methods and procedures	The measurement method is presented in the section Monitoring Plan below.
Monitoring frequency	At least once at every 5 years
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures
Purpose of data	To estimate the carbon emission reduction at each performance certification
Additional comment	

Relevant Indicator	Diameter at breast height (DBH)
Data/parameter	DBH
Unit	cm or m

Description	The DBH of a tree is the diameter of its trunk measured at 1.3 m height, over the bark.
Source of data	Forest inventory
Value(s) applied	NA
Measurement methods and procedures	The DBH will be measured using a measuring tape in each forest inventory plot
Monitoring frequency	For every Performance Certification
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures
Purpose of data	To use the information for carbon estimations.
Additional comment	

Relevant Indicator	Tons of CO_2 captured per period
Data/parameter	Tons of CO_2 captured per period
Unit	tCO_2/period
Description	Quantity of CO_2 captured per period. Each period corresponds to the number of years between Performance Certifications.
Source of data	Forest inventory and literature
Value(s) applied	To be determined at each Performance Certification.
Measurement methods and procedures	This calculation will be performed taking into account the GS Afforestation/afforestation (A/R) GHG Emissions Reduction & Sequestration Methodology
Monitoring frequency	To be determined at each Performance Certification.
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures
Purpose of data	To assess the emission reduction potential of the project by capturing carbon through the establishment of forest plantations.
Additional comment	

SDG#15: Life on Land

Relevant SDG Indicator	Forest area as a proportion of total land
Data / Parameter	Planted area
Unit	Percentage
Description	Planted area per year
Source of data	Satellite imagery and registration of implemented forest areas with the project activities.
Value(s) applied	To be determined annually.
Measurement methods and procedures	Annually records of the planted area will be consulted. GIS information could also be consulted.
Monitoring frequency	Annually
QA/QC procedures	See section B.7.3. Other elements of the monitoring plan, QA/QC procedures. In addition to this, for every monitoring the planting area database will be reviewed.
Purpose of data	To monitor the expansion of the plantation and to estimate GHG emission reductions and removals.
Additional comment	

B.7.2. Sampling plan

SDG # 6

The SDG #6 outcomes for its two indicators are going to have individual sampling plans.

For the indicator **Change in the extent of water-related ecosystems,** all the polygons of the planted areas and 10% of conservation areas will be analysed.

For the indicator **Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management,** to determine how many people you need to interview in order to get results that reflect the target population as precisely as needed, the sampling size will be defined for each WRUA using the following equations:

$$n_0 = \left[\frac{Z^2 qp}{e^2}\right] \qquad n' = \left[\frac{n_0}{1+(\frac{n_0-1}{N}}\right]$$

Where:

N = population size, in this case, total # families per WRUA in partner with the project.

e = Margin of error (percentage in decimal form), in this case 10%

q= 0,5

p= 0,5

z= 1.96 with a confidence level of 95%

SDG #15

For this SDG, all the land where reforestation is carried out will be included in the analysis, therefore this is a census and not a sample. To estimate the forest area as a proportion of total land area, all the polygons of the planted areas will be analysed.

SDG # 13

The data sampling will be designed according to strata defined for the project according to the planting date and to the different forest stand models. Therefore, the sample plots will be established in each stratum (Table 15).

Table 15. Modelling units

MU	*Planting Year*	*Catchment zone*	*Management System*	*Potential planted area (ha)*
1	2018	Lower	Woodlot	10
2			Agroforestry	7
3		Middle	Woodlot	20
4			Agroforestry	33
5		Upper	Woodlot	69
6			Agroforestry	61
7	2019	Lower	Woodlot	28
8			Agroforestry	88
9		Middle	Woodlot	94
10			Agroforestry	67
11		Upper	Woodlot	134
12			Agroforestry	36
13	2020	Lower	Woodlot	15
14			Agroforestry	103
15		Middle	Woodlot	15
16			Agroforestry	103
17		Upper	Woodlot	15
18			Agroforestry	103
Total				***1,000***

The strata will be monitored in order to identify different growth patterns inside each stratum that can lead to unification between strata or a most detailed stratification. An annual update of the project area is suggested given the gradual process of intervention, this allows for permanent control and monitoring of the area. The areas will be periodically monitored using the monitoring criteria established for the project boundaries. The process seeks to identify if the stratum defined ex ante need to be changed. According to changes in the accumulation of carbon during each monitoring period, a new stratification that groups based on biomass growth can be created. The findings from each monitoring period will allow a restratification for the next one, within the following parameters:

- Age
- Silviculture management
- Carbon capture
- Cost-effectiveness of the monitoring process
- Disturbances (plagues, fire, pathologies, etc.)

Plot type and size

Temporal plots will be used for sampling carbon stock in all the areas. The sample plots will be used to take measurements such as diameter at breast height (DBH) as well as list species type. For all trees, the DBH measurement will be taken at a height of 1.3 m. For woodlots, circular temporal plots of 250 m^2 will be used for collecting data. For agroforestry, rectangular temporal plots of 20 m by 25 m will be measured before each Performance Certification, and recorded and kept in a plot file. Temporal plots will be geo-referenced.

Number of sample plots

The number of sample plots for the forest inventory will meet a MU precision with minimum errors of +/-20% with a 90% confidence level. To do so, a sampling error will be estimated using the following equation[7]:

$$E^2 = \left[\frac{\left(\sum_{h=1}^{L} N_h * S_h\right)^2}{n} - \left(\sum_{h=1}^{L} N_h * S_h^2\right)\right] * \frac{t^2}{N^2}$$

Where:

[7] Pearson, T., Walker, S., & Brown, S. (2005). Sourcebook for land use, land-use change and forestry projects. Winrock International and the BioCarbon Fund of the World Bank, 57.

E = allowable error. Calculated by multiplying the mean carbon stock by the desired precision (0.2 as per Gold Standard rules)
T = the sample statistic from the t-distribution for the 90% confidence level.
Nh = Number of sampling units for stratum h (=area of stratum in hectares or area of the plot in hectares)
N = Number of sampling units in the population
Sh = Standard deviation of stratum h.

Where the error is above 20%, the additional difference shall be deducted as per GS AR Methodology.

Standard operating procedure

The plots will be systematically located with a random start in each stratum to avoid the subjective choice of plot locations and interventions such as moving plot centres and plot reference points to more "convenient" positions. In order to do this, Geographical Information Systems (GIS) tools will be used so that the centre of the plot can be easily identified on a map for each stratum. The systematic location of plots within each stratum will be achieved by overlaying a grid on the project map and allocating plots in a regular pattern across the strata. The plot locations will be identified with the help of the Global Positioning System (GPS) device in the field. For each plot the geographic position (GPS coordinates), administrative location and stratum code will be recorded and archived. The plots will be established before any monitoring takes place. In the case of exceptional circumstances in temporal plots (such as forest fires or uneven growth), additional plots may be laid out. In addition, a Standard Operation Procedure (SOP) will be used to make sure the measurements are consistent throughout different teams.

i) Access to plots

The plots will be located using cartography tools. Some reference points that facilitate orientation in the field will also be identified on the maps. The local members of the field crew will help to access the plots easily. Orientation in the field will be facilitated by using GPS where the central points of each plot have been registered as waypoints. To ensure the use of the exact same point, an average position is taken with the GPS. When the GPS reading indicates that the point is within a few meters (closer than 10 m distance). Then, the compass and measuring tape might be used for the last few meters instead of the GPS. The order of the plots for data collection, decided during the preparatory phase, should be followed and the plot code and orientation must be respected.

While accessing each plot, a field sheet must be filled in. The coordinates of the departure location on foot towards the first plot must be read on GPS (or on the map, if the GPS does not have a signal). The coordinates of each reference point are read on the GPS and reference photographs will be taken. The unique photograph codes will be reported in the field sheet.

ii) Establishment of temporal plots

When arriving at the point selected based on GIS methods for the location of the plot, a temporary marker, such as a wooden stake, is positioned. The marker must be positioned exactly at the point indicated by the GIS analysis. This is the centre of the plot. In cases where obstacles obstruct the exact location (such as the presence of trees, rocks, rivers, etc.) the marker will be positioned as close as possible to the GIS point selected as the plot location. The location marker data must be collected together with a description of the plot.

The coordinates of plot marker positions are determined using GPS, as an average position. An identification number (ID) will be assigned to each of the points recorded by the GPS. The distance and direction (measured using a compass bearing in degrees, 360°) of the temporary marker from the actual location marker must be measured. This is done in case the two positions do not coincide. This information is recorded in the form under observations.

iii) Data collection in the field

The data collection begins at the plot starting point and continues in a predefined direction. From the plot centre, the northern bearing will be identified (0°). From there the trees will be measured in a clockwise direction.

Tree measurements

The DBH of all trees over 5 cm will be measured, and these data will be recorded in a field sheet section "Recording the data". Trees located on the border of the plot will be considered as being inside the plot if at least half of the stem diameter at breast height is with the limit of the plot. Data collected include records of plant species that have been identified (common and scientific name) and diameter. Tree diameter measurement methods are crucial for the accurate reporting of data.

Tree DBH measurement

Tree diameter is measured over bark at breast height, which is 1.3 m above the ground, except in the cases mentioned below. The measurement can be carried out with a diameter tape or with the use of a caliper (as shown in Figure 9 below).

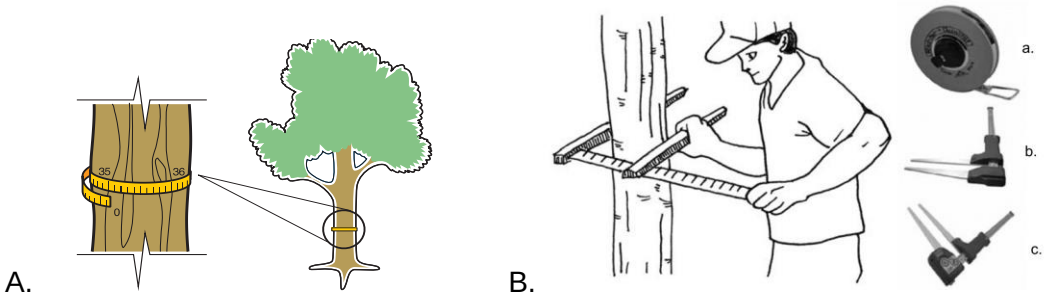

Figure 9. Illustration of diameter measurement methods (A. diameter tap, B. manual clipper) and possible measurement devices: a. diameter tap, b. and c. manual and digital callipers (Source: (Yepes et al., 2011)

Some precautionary measures must be taken into account (Figure 10. Correct ways for diameter measurement at breast height (Source: Lema, 2003)Figure 10):

- Measurement instruments are to be used in such a way that they perpendicularly cut the tree axis at 1.3 m.
- If diametric tape is used, ensure it is not twisted and is well positioned around the tree, perpendicular to the stem. Nothing must prevent direct contact between the tape and the bark of the tree being measured.
- On inclined terrain, DBH tree measurement at 1.3 m is taken from the highest part of terrain.
- For forked trees (where the stem or trunk divides), measuring varies depending on to the point at which the stem forks. If the fork begins below 1.3 m height, each stem diameter will be considered as a tree and will be measured. Diameter measurement of each stem will be taken at 1.3 m height. If the fork begins at 1.3 m or higher, the tree will be counted as a single tree. The diameter measurement is thus carried out below the crotch intersection point, just below the bulge that could influence the DBH.
- Trees with an irregular stem at 1.3 m (such as bulges, wound, hollows, branches, etc.), are to be measured just above the irregular point, there where the irregular shape does not affect the stem.

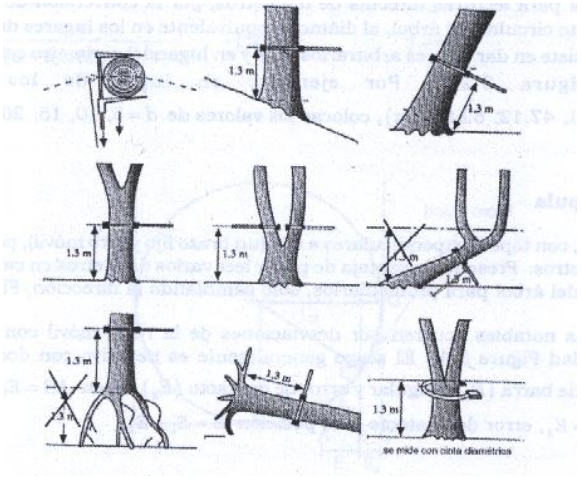

Figure 10. Correct ways for diameter measurement at breast height (Source: Lema, 2003)

Recording the data

The field data collected will be done using ODK[8] to keep records of all data collected. Community members will be identified and trained to perform the data collection using the ODK.

The data collected, calculations and related outputs will be recorded and backup copies will be made. The variations observed by the field staff are monitored again, thus becoming the subject of new processing and reporting activities.

Monitoring intervals and frequency

According to the GS rules, the project will be monitored at least once every 5 years.

Analysis of the monitored data and parameters

The data recorded in the forest inventory (DBH) will be the input used for the growth models that will define the total biomass accumulated for the project at the time of monitoring.

The ex post estimates, default parameters and equations, will be the same as those used for the ex ante. Unless better values exist at the time of verification, they must always comply with the requirements. The conservative default approach may be selected.

In the case of SDG 6 and 15, the monitoring system will be defined once the plots of land associated with the project are defined, establishing correlations between the project activities and the water flows and coverage in the corresponding basin. The monitoring will be carried out at least twice a year, in the rainy season and the dry season, and will be linked to the WRUAs and the community.

B.7.3. Other elements of monitoring plan

Procedures for internal auditing and QA/QC

QA/QC procedures will be implemented to ensure that net GHG removals are measured and monitored precisely, credibly, verifiably, and transparently. The project will follow the IPCC GPG method, using two types of procedures, to ensure that the inventory estimates and their contributing data are high quality. As a QA/QC plan is fundamental to create credibility, an appropriate plan will be developed that outlines QA/QC activities. It will include time frames and outline steps from preparation to final reporting. The plan will describe specific QC procedures in addition to special QA review procedures. The QA/QC plan is an internal document used to organize, plan, and implement QA/QC activities and will be demonstrated here only in as a summary. Below are abstracts from the QA/QC plan:

- Standard Operating Procedures (SOP) will be established for all procedures such as GIS analysis, field measurements, data entry, data documentation and data storage.

- Training courses will be held for all relevant personnel on all data collection and analysis procedures.

- Steps will be taken to control errors in sampling and data analysis. This is done in order to develop a credible plan for measuring and monitoring carbon stock change in the project context. The same procedures will be used throughout the project life to ensure continuity.

[8] O.D.K. (Open Data Kit): Is a suite of tools that allows data collection using mobile devices and data submission to an online server, even without an Internet connection or mobile carrier service at the time of data collection. You can collect data remotely without an Internet connection or cell carrier access. Gather text, numeric data, media and more with a mobile device. Then, host your data online using Google's powerful hosting platform, Google AppEngine, and visualize your data as a map using Google Fusion Tables and Google Earth. https://opendatakit.org/

The personnel involved in the measurement of carbon pools will be fully trained in field data collection and analysis. SOPs will be developed for each step of the field measurements and followed so that measurements are comparable over time. If different interpretations of the SOPs exist among the field teams, they will be jointly revised to ensure clear cohesive guidance. This procedure will be repeated during the field data collection stage.

To verify that plots have been installed and the measurements are taken correctly, a 10% minimum of randomly selected plots will be remeasured by a supervisor and a team that was not involved in the initial measurement sampling.

The remeasurement data will be compared with the original measurement data. Any errors found will be corrected and recorded. The level of errors recorded will be calculated and reported using the following equation:

$$Error\ (\%) = \frac{Estimate1 - Estimate2}{Estimate2} * 100$$

The proper entry of data into the data analyses spreadsheets is required to produce reliable carbon estimates. All data sheets will include a "Data recorded by" field. Communication between all personnel involved in measuring and analysing data will be used to resolve any apparent anomalies before final analysis of the monitoring data can be completed. If there are any problems with the monitoring plot data that cannot be resolved, the plot will not be used in the analysis. Expert judgment and comparison with independent data will be used to ensure data results are in line with expectations. Additionally, field data will be reviewed by the leader of the monitoring team, further ensuring that the data and analysis are accurate.

Due to the long length of the project and the speed at which technology changes, raw data archiving is essential. Data will be archived in several forms and copies of all data will be provided to each project participant. Original copies of the field measurements (data sheets and electronic files) will be stored in a secure location. Copies of all data analysis and models, the final estimate for the carbon sequestered, any GIS products and the measuring and monitoring reports, will be stored in a dedicated safe place (preferably offsite). Electronic copies of all data and reports will be updated periodically and converted to any new format required by future software or hardware. An employee involved in the field measurements will be tasked with implementing this update. The data collected shall be archived for a period of at least two years after the end of the last crediting period of the project activity. The main activities to be developed for the QA/QC process are described in the Table 16.

Table 16. Verification and checklist used to guarantee the quality of information gathered and its management.

QC activity	Procedures
Check that assumptions and criteria for the selection of activity data, emission factors and other estimation parameters are documented.	Crosscheck descriptions of activity data, emission factors and other estimation parameters with information on source and sink categories and ensure that these are properly recorded and archived.
Check for transcription errors in data input and reference.	Confirm that bibliographical data references are properly cited in the internal documentation. Crosscheck a sample of input data from each source category (either measurements or parameters used in calculations) for transcription errors.
Check that emissions and removals are calculated correctly.	Reproduce a representative sample of emission or removal calculations. Selectively mimic complex model calculations with abbreviated calculations to judge relative accuracy.
Check that parameter and units are correctly recorded and that appropriate conversion factors are used.	At each design certification check that: - Units are properly labelled in calculation sheets and are correctly carried through from beginning to end of calculations. - Conversion factors are correct. - Temporal and spatial adjustment factors are used correctly.
Check the integrity of database files.	At each field data collection: - Confirm that the appropriate data processing steps are correctly used in the database. - Confirm that data relationships are correctly represented in the database.

QC activity	Procedures
	- Ensure that data fields are properly labelled and have the correct design specifications. - Ensure that adequate documentation of database, model structure and operation are archived.
Check for consistency in data between categories.	Identify parameters, such as activity data and constants, that occur in multiple categories of sources and sinks, and confirm that the values used for these parameters are consistent in the emissions calculations.
Check that the movement of inventory data among processing steps is correct	At each design certification check that: - Emission and removal data are correctly aggregated through lower reporting levels to higher ones, when preparing summaries. - Emission and removal data are correctly transcribed between different intermediate products.
Check that uncertainties in emissions and removals are estimated or calculated correctly.	At each design certification check: - That the individuals providing expert judgment for uncertainty estimates are suitably qualified. - Qualifications, assumptions and expert judgments are recorded. Check that calculated uncertainties are complete and calculated correctly.
Undertake review of internal documentation	At each field data collection check that: - There is detailed internal documentation to support the estimates and to enable reproduction of the emission, removal and uncertainty estimates. - Inventory data, supporting data and inventory records are archived and stored to facilitate detailed review.
Check time series consistency.	At each field data collection check that: - Check for temporal consistency in time series input data for each category of sources and sinks. - Check for consistency in the algorithm and method used for calculations throughout the time series.
Undertake completeness checks	At each design certification: - Confirm that estimates are reported for all categories of sources and sinks and for all years. - Check that known data gaps that may result in incomplete emissions estimates are documented and treated conservatively.
Compare estimates to previous estimates.	For each category, where available, current inventory estimates should be compared to previous estimates. If there are significant changes or departures from expected trends, recheck estimates and explain the difference.

Uncertainty assessment

The project follows methods from IPCC GPG for LULUCF (GPG 2003) and procedures for A/R project activities to estimate baseline net GHG removal. This covers removals by sinks, leakage, actual net GHG removal by sinks and net anthropogenic removal by sinks. In the context of this methodology, the major sources of uncertainties are related to changes in carbon stock in the living biomass pool. They include natural factors such as fire and pest outbreaks, stand variables such as variation in the yield tables, allometric equation, biomass expansion factor (BEF), wood density, carbon fraction and the errors in measurement. Uncertainty estimates will be developed for all land-use categories in the inventory part of the monitoring.

Verification of project emissions

The project will quantify and monitor the non-CO_2 GHG emissions resulting from (forest) fire within the project boundary. The accumulated area affected by such fires in a year is less than 5% of the project area. These events will be monitored and the affected area will be recorded.

Emission of non-CO_2 GHGs resulting from the loss of aboveground tree biomass due to fire will be calculated in each verification period. The aboveground biomass of trees belonging to relevant strata, calculated in the previous verification, and the default values for the combustion factor, the emission, will be used.

SECTION C. Duration and crediting period

C.1. Duration of project

C.1.1. Start date of project

The start date of the project is defined as the initial planting date, which is 28th of April 2018

C.1.2. Expected operational lifetime of project

The expected operational lifetime is 30 years.

C.2. Crediting period of project

C.2.1. Start date of crediting period

28th April 2018.

C.2.2. Total length of crediting period

The total length of crediting period is 30 years, ending in 27th April 2048.

SECTION D. Safeguarding principles assessment

D.1. Analysis of social, economic and environmental impacts

Safeguarding principles	Type (Q/MR/R)[9]	Assessment questions	Assessment of relevance to the project (Yes/ potentially/no)	Justification	Mitigation measure (if required)
Principle 1 - Human Rights	MR	The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights.		The project is in compliance with all the stated in the Universal Declaration of Human Rights. The WWF social and policies principles consider respect for human rights in accordance with customary, national and international human rights laws. WWF recognizes human rights as central to achieving effective and equitable conservation and development outcomes.	
	MR	The Project shall not discriminate with regards to participation and inclusion.		The WWF social politics and principles prove its ongoing commitment to equity, integrating a gender perspective in its projects with no discrimination.	
Principle 2 - Gender Equality and		1. Is there a possibility that the Project might reduce or put at risk women's access	Potentially	The project is designed to benefit households – including both genders	Both the husband and wife should come to a consensus on

[9] Q=Question, MR=Mandatory Requirement, R=Requirement. Note that MR and R do not have an assessment question and therefore, not an answer, but the explanation of how the project complies with the requirement, is presented.

Women's Rights		to or control of resources, entitlements and benefits?		through sustainable Natural Resource Management. However, this might arise when the husband, who in most cases is the custodian/ owner of the farm, might decide to have the piece of land dedicated for crop production for tree planting for the project, leaving the woman with no place for planting crops or denying her access to the benefits of the project.	where to plant the trees for the project. This clause is included in the agreement. During the plantation establishment, WWF will ensure that sowing trees is not done in spaces intended for family/community garden. The grievance mechanism will be used to identify any potential land use conflicts, especially on subsistence to make sure the reforestation activities are not implemented in food production areas.
		2. Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on	Potentially	Youths and women are isolated in some areas especially in land ownership. However, there are some isolated cases, especially where there are no men in the family, where women have full ownership of the land.	In the farmers contract agreement a clause was included about the inclusion of all the family members in

		women or social isolation of men)?			the project implementation and its benefits.
		3. Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)?	No	Women are very active members of community and most of the labour comes from women, going from planting activities to weeding. In addition, WWF has a strong presence in the project area with vast experience on the differences between the roles between genders.	
		4. Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)?	Yes	The project provides an opportunity for people to engage in open discussions on matters regarding gender and agree on the most appropriate conditions for everyone. Since we have been working together, the locals here understand that WWF policies takes into account gender roles and the abilities of both men and women to benefit from its projects. The Lake Naivasha Basin Reforestation project is not an exemption. Again, they will all benefit from the planted trees. In addition to that, the invitation for the meeting and participation of the stakeholders in the meeting guaranteed the inclusion of both genders.	

		5. Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities?	Potentially	Tree planting is not labour intensive. They are not being told to move to a foreign land – they have ownership of the trees for their own benefit. Women and kids are responsible to collect firewood and the project activities will guarantee easier access to firewood in their own property, which reduces their workload comparing to the situation before the project implementation. However, in some cases especially during the draught it might lead to additional work of watering the seedlings, which will be on done by the women.	Families will be trained on the distribution of tasks in the implementation of the project. Duty sharing will help address the issue and reduce the load and is addressed in the Health and Occupational Safety Protocol.
		6. Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits?	Potentially	The project activities aim to benefit women and reduce reliance on their spouses. Therefore, they will also benefit from the activities and be more independent, and therefore be respected in the household. However, discrimination might arise especially during the harvesting periods. Men might take all the money gained from the harvested trees. Men traditionally own property and will control the sale of timber products	Since everyone in the family is included in the initial phase of the project, the same will happen during the harvest time. In the agreement signed with the farmers there is an obligation the equitable distribution of the benefits obtained from the plantation in the future. They will distribute

					different benefits amongst different family members and the Family Investment Plan will be used by the project participants to guarantee the access to opportunities and benefits.
		7. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?	No	The implementation of the project activities is carried out in areas without crop production or in areas where agroforestry systems could be adopted, aiming to increase the yield of that area. This would not limit in any manner the ability of women related to the use, development and protection of the natural resources. Also, women are fully engaged and included in the full process of the project.	
		8. Is there likelihood that the proposed Project would expose women and girls to further risks or hazards?	Potentially	When the trees planted grow up, they might form forests with thick canopies that can attract bad people who can hide in them. This can put the women, who are in most cases the ones who go to shopping centres to buy household items, into potential risk of being mugged or raped.	This can be mitigated through regular pruning. Thinning and felling off of some trees will also help by availing spaces in which one can clearly see through the

					woods. The complaint and grievance mechanism will serve communities to denounce any risk situation caused by the project.
	MR	9. The Project shall not directly or indirectly lead to/contribute to sexual harassment and/or any forms of violence against women - address the multiple risks of gender-based violence, including sexual exploitation or human trafficking.		The Project might fall into the risk of enticing dangerous situations (sexual harassment and/or any form of violence) for girls and women who walk to the mall to buy household items, especially when the trees grow and obstruct visibility.	Regular pruning that favours visibility through forests is included in the project activities.
	MR	10. The Project shall not directly or indirectly lead to/contribute to slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls.		The Project does not expose girls or women to situations of slavery, labour exploitation or punishments. Family members will participate in the activities of the project. Furthermore, families shall agree on the tasks to be performed among men, women and children according to their skills and time availability.	
	MR	11. The Project shall not directly or indirectly lead to/contribute to restriction of women's rights or access to resources (natural or economic)		The project shall not restrict in any way the access of women to the resources, quite the opposite, the Project will enable women to easily access both firewood and fruits. Additionally, landowners who join the project recognize and understand that WWF	

				policies take into account gender roles as well as the capabilities of men and women in the development of its projects.	
	MR	12. The Project shall recognize women's ownership rights regardless of marital status - adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources.		The Kenyan political Constitution of 2010 and different national laws provide for the right of women to land and property. Traditional practices, however, keep on ignoring these rights. Women rarely inherit land in their own right. In this sense, the Project will respect family decisions related to the assignment of tasks within the project activities and the distribution of its benefits, provided that the right of women to access natural resources is respected. WWF shall ensure that the Project benefits both men and women.	
	MR	13. Where appropriate for the implementation of a Project, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities		The activities of the Project are mainly performed by the community. Men and women will both work on the project, tasks will be assigned based on their skills and time availability. WWF will provide all the necessary inputs to develop the activities of the project, labour will be provided by the families within their property and they will be able to take advantage of the benefits from plantations once they have grown.	
	MR	14. Introduce conditions that ensure the participation of women		The activities of the Project are mainly performed by the community. Both men and women work on the Project on	

		or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status. Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits.		a voluntary basis. Furthermore, WWF will ensure that project conditions do not limit the participation or access to the benefits to any family member through the Family Investment Plan and the Occupational Safety and Health Protocol.	
		15. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks		The Project respects and embraces the national gender strategy. WWF as the entity implementing the project will ensure its completion through its gender policy (please refer to Section A8 of PD).	
Principle 3 - Community Health, Safety and Working Conditions	MR	1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community.		The project activities like pruning, thinning and harvest could put people in the community at risk.	The people of the community will be trained to carry out the project activities adequately and to prevent accidents. The Health and Occupational Safety Protocol will be used as guiding material for the training sessions.

Principle 4 - Cultural Heritage, Indigenous Peoples, Displacement and Resettlement	Q	1. Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)?	No	The establishment of the plantations will be carried out within the community premises, where there is no presence of places of cultural or religious importance for the community.	
	R	2. The Project shall not involve or be complicit in the alteration, damage or removal of any sites, objects or structures of significant cultural heritage.		The Lake Naivasha was designated as a Ramsar Site in 1995. According to the Ramsar Convention, representative lakes or wetlands, which are rare or unique for the conservation of world´s biodiversity, have been recorded on the List of Ramsar wetlands of international importance. In addition to this Ramsar site, no other place of cultural importance was identified. During the local stakeholder consultation, the communities did not identify such places. The project activities are carried out on private land where there are no places or structures of cultural importance.	
	R	3. Where a Project proposes to utilise Cultural Heritage, including the knowledge, innovations, or practices of local communities, affected communities shall be informed of their rights, the scope and the		The project will not utilise Cultural Heritage Sites for project activities	

		consequences of the activity.			
	R	4. The Project shall provide for equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions.		The project will not commercialise Cultural knowledge	
	R	5. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design		The project area don`t include areas of cultural, therefore no issues regarding it occur in the project area.	
	Q	6. Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The reforestation will be implemented on private land and includes a component of sustainable agriculture. In addition, the project will only include landowners that are willing to join the project.	
		7. Does the Project require any change to land tenure arrangements and/or other rights?	No	All the participating farmers must be the actual land owners and should provide sufficient authority over the land, including title deeds and/or allotment letters.	
	R	8. The Project shall not involve and shall not be complicit in the		The participating farmers are land owners. They have titles deeds and/or allotment letters and therefore no	

		involuntary relocation of people		involuntary relocation of people will occur.	
	R	9. Projects shall avoid physical and economic displacement, and mitigate displacement impacts on displaced persons and host communities when displacement cannot be avoided. In such cases, the Project shall integrate into the Project documentation a Resettlement Action Plan or Livelihood Action Plan as appropriate. Please refer to UNDP Standard 5: Displacement and Resettlement requirements for further details in this regard.		Landowners participate voluntarily. The economic displacement was not identified as a probable effect of the project. The project activities will be carried out within the private property of landowners who voluntarily join the project.	
	R	10. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design.		The project participation is voluntary and the activities will be carried out in the property of the farmer, so no displacement or relocation of people will happen.	
	Q	11. Does the Project require any change to land tenure arrangements and/or other rights?	No	Landowners will join the project on a voluntary basis depending on their interests in the project.	

	Q	12. For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	Potentially	Only land owners with title deeds allotment letters will participate in the exercise especially because it is a long-term project. However, in some cases, the owner (father) might have subdivided the land to children but not given them a title deed. Therefore, there might be no clear agreements about who owns the project.	As the project starts, the rightful owner of the land (with the title deed) should give the permission to participate in the project
	R	13. The Project Developer shall identify all such sites/matters potentially affected by the Project. For all such sites/matters identified the Project shall respect and safeguard: (a) Legal rights, or (b) Customary rights, or (c) Special cultural, ecological, economic, religious or spiritual significance of people shall be demonstrably promoted/protected.		The Project respects both the customs and traditions of the communities. In addition to that, the Project has a voluntary participation, which shows that the landowner is respected as they are completely free to join the project. The landowner participating in the project should adopt one of the management options presented according to the land features, but they have freedom, so they are not affected by the project.	
	R	14. Changes in legal arrangements must be in line with relevant law and regulation and must be carried out in strict adherence with such laws. All legal disputes		The implementation of the project does not involve any legal change to the land tenure system. There are no currently legal disputes within the project area, landowners who have voluntarily joined the project have the	

		must be resolved prior to Project being carried out in such areas. All such changes must be demonstrated as having been agreed with free, prior and informed consent.		corresponding title deeds or allotment letters.	
	R	15. The Project Developer must hold uncontested land title for the entire Project Boundary to complete Project Design Certification.		The operation of the Project is ruled by agreements signed between landowners and WWF. With this instrument, landowners agree to participate during the entire life cycle of the Project and grant forest carbon rights. It states the eligibility conditions of the property, the planting system, and the obligations of the parties (Farmers – WWF).	
	R	16. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design.		The participation in the project is voluntary and only the landowners that can prove the land tenure through the title deeds can participate in the project, reducing the risk to disputes. The participants are allowed to continue with other practices and the access to rights and resources will be the same as before starting the project activities.	
	Q	17. Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on	NA	There are no people who fit the definition of "indigenous peoples" within the project area. All the residents are immigrants from different parts of Kenya	

		land/territory claimed by indigenous peoples?			
	R	18. The Project Developer shall identify all communities of Indigenous Peoples within the Project area of influence who may be affected directly or indirectly by the Project.		Even though traditional communities live in the project area, they are not considered, nor do they consider themselves, indigenous communities. The local communities are situated throughout the watershed.	
	R	19. The Project Developer shall recognise and respect the indigenous people's collective rights to own, use, and develop and control the lands, resources and territories that they have traditionally owned, occupied or otherwise used or acquired, including lands and territories for which they do not yet possess title.		N/A. The project will be carried out on private land, no such sites exist within the farmland. In addition, the stakeholders stated that no such sites exist inside the project area.	
		20. The Project Developer shall respect, protect, conserve and shall not take the cultural, intellectual, religious and spiritual property of indigenous peoples		Customary owned land is respected by the project. The land owners sign participation agreements in the project voluntarily	

		without their free, prior and informed consent			
	R	21. The Project Developer shall ensure that the indigenous people are provided with the equitable sharing of benefits to be derived from utilisation and/or commercial development of natural resources on lands and territories or use of their traditional knowledge and practices by the Project.		No communities of indigenous peoples were identified within the Project area. It is important to note, however, that the benefits derived from the project (inputs, short and long-term technical assistance, firewood and wood of the trees) will favor and be used by all family members.	
	R	22. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design		Expert stakeholder opinion from the WWF Kenya and the South Pole team were taken into account for the project design.	
Principle 5 - Corruption	MR	1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects. 2.		"WWF International has a zero-tolerance principle to fraud and corruption. As an organization that condemns and fights corruption as one of the key drivers of poverty, environmental degradation and bad governance, it requires its own staff and co-contractors at all times to act and comply with its zero-tolerance principle by fully conforming to all	

				procedures and policies adopted to prevent corruption and fraud in our offices." (World Wildlife Fund (WWF), 2012) (See annex 6) Additionally, the entire project was informed by Free Prior and Informed Concept (FPIC) and all the participants agree that the process was transparent.	
	R	1. The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions.		None of the land owners have employed workers. All the tasks will be performed by the family members. Many farmers will work (casual labour) for each other based on traditional arrangements which is effectively a reciprocal agreement between communities to work for each other. In addition, all the employees working for the project participant institutions are working under conditions in compliance with the ILO fundamental conventions.	
	R	2. Workers shall be able to establish and join labour organisations.		None of the land owners have employed workers. All the tasks will be performed by the family members. In addition, employees from the project participant institutions have no restrictions to join and establish labour organizations.	

	R	3. Working agreements with all individual workers shall be documented and implemented. These shall at minimum comprise: (a) Working hours (b) Duties and tasks, AND (c) Remuneration (d) Modalities on health insurance, AND (e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND Provision for annual leave of not less than 10 days per year, not including sick and casual leave.		The traditional arrangements between farmers are based on informal agreements. All the labour will be provided voluntarily by the family members and their neighbours and therefore the conditions are not applicable. In addition, the project participants institutions have working agreements with all the workers and they make sure that the minimum stated in the assessment question will be met/respected.	
	R	4. The Project Developer shall justify that the employment model applied is locally and culturally appropriate.		The land owners and family members will carry out the Project activities, therefore no additional labour force is required, and no additional workers will be hired.	
	R	5. Child labour, as defined by the ILO Minimum Age Convention is not allowed. The Project Developer shall use adequate and verifiable mechanisms for age verification in recruitment procedures.		By traditional and cultural practices, children should help the family in their productive activities and household chores. Children over 12 years of age will help planting trees on weekends, because it is illegal to deprive them of schooling. The tasks carried out by children include planting activities and weeding.	

	R	6. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures		Training is delivered to family members before starting planting activities.	
	R	7. The Project Developer shall demonstrate the financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period.		For the first seven initial years or until the project reaches 42,000 tCO2, the project relies on funds from Coop Switzerland. After that period, the project relies on the sale of carbon credits. Therefore, the project is financially sustainable.	
	R	8. The Projects shall consider economic impacts and demonstrate a consideration of potential risks to the local economy and how these have been taken into account in Project design, implementation, operation and after the Project. Particular focus shall be given to vulnerable and marginalized social groups in targeted communities and that benefits are socially-inclusive and sustainable.		The goods and services resulting from the diverse project activities will increase the income of the families involved with the project as well as enhance the climate and biodiversity. Hence, there are no risks to the local economy for the project.	

	ENVIRONMENTAL & ECOLOGICAL SAFEGUARDING PRINCIPLES				
Principle 1 - Climate and Energy	Q	1. Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	GHG emissions will be reduced because of carbon sequestration. No use of fertiliser. Soil preparation is the same as baseline.	
	R	2. Projects shall not increase emissions over the Baseline Scenario unless this is specifically allowed within Activity Requirements or Gold Standard Approved Methodologies.		The project activities don't involve increase in the emissions when comparing to baseline emissions.	
	Q	3. Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	No power or fuel source will be required to plant the trees or other project activities. On the contrary, the project activity will increase the availability of firewood in the participant's land.	
	R	4. The Project shall not affect the availability and reliability of energy supply to other users.		Not applicable	
Principle 2 - Water	Q	1. Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	Yes	Project is intended to have positive impact on water resources through improved filtration and reduced soil erosion, reducing the flooding potential, high seasonal flow variability and water scarcity.	

	R	The opinions and recommendations of an Expert Stakeholder (or multiple experts if appropriate) shall be sought and demonstrated as being included in the Project design and Monitoring Plan		The opinions of experts in watershed management and conservation were taken into account to define the appropriate areas for planting. A guide was constructed for the identification of wetlands, so that these zones would be identified and excluded within the areas eligible for the project.	
	R	The Project shall ensure that water resources are conserved. For surface waters this means: (a) Maintaining credible environmental flows demonstrated by providing a verifiable calculation demonstrating that conservation is maintained at a level as advised by the independent Expert Stakeholder, and (b) Ensuring that wastewater discharged is of a high enough standard to allow beneficial reuse. For groundwater, this means limiting abstractions to levels less than or equal to rates of recharge. Managed aquifer recharge may be used to conserve groundwater resources.		Tree planting areas are not found in wetland areas and are mostly not near surface streams or are planted as riparian buffer. The selection of species near water bodies is of native species and during the negotiation process with the owners, it is made clear that these trees may not be cut and used, since it is expected that in the future its will be the protective forest cover that fulfils the function of riparian buffer. a) The plantations will not be implemented in areas sensitive to water regulation (wetlands, springs or streams); the size of the project only corresponds to 0.3% of the size of the basin and is distributed throughout it; and in most cases, the farms where the project is implemented are supplied with water from the WRUA and have their reservoirs.	

				Taking into account the reasons mentioned above, the project is designed so that it does not affect the environmental flows of the basin, but rather contributes to improving soil conditions, in such a way that infiltration is favoured and therefore subsurface flows are enhanced. b) The project activities will not generate direct discharges to the basin, and the plantations will not contaminate the diffuse discharges since the use of agrochemicals is not contemplated.	
	R	At each Performance Certification the Project shall assess whether it is in an area of physical water stress or scarcity.		It is planned to continue using global databases to evaluate physical water stress or scarcity, while developing area-specific information, which will be continuously searched.	
	R	The risk(s) of the Project negatively impacting the catchment shall be assessed and addressed to ensure its ongoing, long-term viability and impact on surrounding social-economic and environmental assets.		The project activities are designed to avoid any negative impact to the catchment. However, potential risks that negatively impact the watershed will be identified and evaluated during the entire project execution period. If one is detected, mitigation or correction measures will be designed.	

	R	Where the Project is involved in abstraction from water resources required to support biodiversity and other ecosystem services, an eflow assessment consistent with good practice, including a modern method must be undertaken.		The project does not contemplate carrying out activities associated with abstraction from water resources required to support biodiversity and other ecosystem services.	
	Q	2. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to next question	No	The project will enhance water holding capacity of the soil and also bind the soil together. The tree cover will also reduce wind and raindrop erosion.	
	Q	3. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	Yes	Some portions of the project area are susceptible to erosion and water body instability. However, the project activities will reduce the erosion risks and water body instability.	In the project area, some of the project participants may join this project to control erosion (through planting of native trees along riparian zones).
	R	The risk of the Project negatively impacting the catchment and risks impacting Project success shall be assessed and addressed to ensure its ongoing, long-term viability and impact on surrounding social-economic and environmental assets		With the implementation of project activities associated with reforestation, it is expected to positively impact the watershed, increasing coverage, reducing the risk of erosion by winds and trampling of animals and improving soil structure which in turn, improves infiltration.	

		through an assessment of the sensitivity of physical area of influence due to low percentage of impervious cover in a Project's physical area of influence (e.g., basin, catchment), susceptibility to erosion and water body instability, and lack of terrestrial habitat connectivity.			
	R	The Project shall demonstrate that measures to ensure soil protection and minimised erosion are in place prior to the commencement of the Project.		To reduce the risk of erosion, prior to planting, a technical visit is made to identify areas suitable for planting trees, including areas where slopes do not exceed the load capacity of the soil. Also, the tree planting itself is an activity that ensure soil protection and minimise erosion, especially if compared with the baseline scenario.	
	R	The Project shall demonstrate that measures will be undertaken to ensure that surface and ground waters are protected from the impact of erosion are in place prior to the commencement of the Project.		Surface and groundwater will not be susceptible to any erosion caused by the project. On the contrary, tree planting is expected to reduce the potential erosion caused by wind and cattle trampling.	
	R	Measures shall be incorporated to reduce soil erosion on slopes (e.g., hedge and tree rows, natural terracing, infiltration strips, permanent ground cover). For these measures, the concept of		During the field visit prior to sowing, the slopes and characteristics of the fields are identified. And the forest arrangements design oriented in the direction of the contour lines and with densities of trees corresponding to the load capacity of the soil.	

		the effective slope length shall be taken into account.			
	R	Impact shall be reassessed at a frequency appropriate to the context of the ecosystem affected. The monitoring approach and frequency shall be justified by reference to natural patterns and variations.		The increase in coverage will be monitored according to the monitoring plan. In addition, during the follow-up visits, it will be checked if there are changes in the soil that need to be managed. Also, the natural variations and patterns are covered because the visits to the farms are quite frequent.	
	R	Where the Project takes place in a water scarce or water stressed area (see Assessment Question 5.2.1), the opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being considered and incorporated into the Project design.		According to the Aqueduct Water Risk Atlas tool, the basin is in the Low category (<10%) in relation to water stress, so project activities are expected to contribute to improving soil infiltration by improving coverage (Refer to the Supporting Documents, Water Risk)	
Principle 3 – Environment, ecology and land use	Q	1. Does the Project involve the use of land and soil for production of crops or other products?	Yes	Crop production is envisioned within the agroforestry system.	Farmers with sufficient land will establish woodlots while those with less land will use agroforestry systems to combine tree planting with crop production
	R	2. The Project shall identify the functions and services provided by the landscape and demonstrate no net		All the project activities will be implemented in land that was not forested before tree planting, especially land dedicated to crop production or grazing. The land uses	

		degradation in existing landscape function and services.		previous to tree planting are activities that have a higher potential of degradation when comparing to the management systems established by the project. Therefore, no net degradation will occur in existing landscape function and services. On the contrary, the landscape function and services will improve through the project activities - the soil porosity will increase, the connectivity will be enhanced, habitat for fauna is created and the erosion will decrease.	
	R	3. To ensure healthy soils the following aspects shall be identified and appropriate measures shall be put in place to protect them: Soil types, AND Biota, AND Erosion		The selection of the species used in the project were based in the necessity of the communities benefiting from the project as well as the environmental benefits, which includes improvement of soil conditions. Soil types, biota and erosion risk was also identified and considered for species selection to ensure healthy soils. Also, the project activities adopted are more sustainable when comparing to the land uses before the project start and this also cause and improvement on the soil conditions such as increase soil porosity, increase soil organic contents, decrease erosion and soil compaction.	
	R	4. Measures shall be incorporated to minimise soil degradation (e.g., through crop rotation, composting, no use of		Measures to minimized soil degradation were incorporated. Agroforestry systems are implemented in areas where only crop production was implemented in the past. Also, tree	

		heavy machinery, use of N-fixing plants, reduced tillage, no use of ecologically harmful substances).		planting can be done in agricultural fields and grazing fields, therefore enhancing the soil conditions, especially when comparing with the land use practices before the implementation of the project activities. The project activity itself minimize soil degradation when comparing with the baseline.	
	R	5. Projects that involve the production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities shall adopt the appropriate and culturally sensitive sustainable resource management practices.		The land owners participating in the project are familiar with the project activities and this was also taking into consideration for the design of the same, aiming to adopt appropriate practices that are culturally and sensitive sustainable resource management practices.	
	Q	6. Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The trees will help reduce the adverse effects of weather and natural disasters.	
	R	7. The Project shall avoid or minimise the exacerbation of impacts caused by natural or man-made hazards, such as landslides or floods that could result		The project activities itself minimize the impacts caused by natural and man-made hazards. Therefore, the tree planting activity in areas that had other land use in the past serve as a	

		from land use changes due to Projects. The Project Developer shall include mitigation measures (if possible), the emergency preparedness plan and response strategies. The Project Developer shall disclose appropriate information about emergency preparedness and response Projects, resources, and responsibilities to affected communities.		mitigation measure to minimize the natural and man-made impacts.	
	Q	8. Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	No	Only certified seeds from a single known source (KEFRI) will be used and no GMOs will be used in the project activities.	
	R	9. Projects involving the use of GMOs[6]are not eligible for Gold Standard Project Design Certification		The project activity does not involve the use of GMOs.	
	R	10. An assessment of the risk of GMO contamination from outside the Project area and reasonable and appropriate		The risk of GMO contamination from outside the project area is minimal. According to Kenya Forest Service (KFS) reports, there are no reports of GMO species in the area of the species to be used in the project, so the probability of contamination is low.	

		countermeasures should be taken.		However, as assessment of the risk of GMO contamination will be developed if necessary.	
	Q	11. Could the Project potentially result in the release of pollutants to the environment?	No	There will be no use of machinery, fertilizer or other agrohemical.	
	R	12. The Project shall avoid the release of pollutants. This applies to the release of pollutants to air, water, and land due to routine, non-routine and accidental circumstances		There will be no use of machinery, fertiliser or other agrochemical.	
	R	13. The Project Developer shall ensure that pollution prevention and control technologies and practices consistent with national regulation or international good practice are applied during the Project life cycle.		From the initial phase with the owners, they are informed that the use of agrochemicals is not allowed, a message that is repeated by field technicians during visits.	
	R	14. All potential pollution sources that may result from the Project that cause the degradation of the quality of soil, air, surface and groundwater within the Project's area of influence shall be identified. Appropriate mitigation measures and		It has been identified that one of the potential pollutants are the bags that are used for the production of the seedlings, however, from the project promotes a campaign for owners to make the collection and proper disposal.	

		monitoring shall be implemented to ensure the protection of resources.			
	Q	15. Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No	No chemicals are used to grow or manage most of the trees.	
	R	16. Projects shall avoid or, when avoidance is not feasible, minimize and control release of hazardous materials resulting from their production, transportation, handling, storage and use in the Project. Where avoidance is not possible, the health risks, including potential differentiated effects on men, women and children, of the potential use of hazardous materials shall be addressed appropriately.		Not applicable.	
		17. Projects shall consider the use of less hazardous substitutes for such chemicals and materials and will avoid the manufacture, trade, and use of chemicals and hazardous materials		Not applicable	

		subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer			
		18. All sources of waste and waste products shall be identified and classified. Waste products include amongst others: Chemical wastes, AND Containers, AND Fuels and oils, AND Human waste, AND Rubbish (including metals, plastics, organic and paper products), AND Abandoned buildings, machinery or equipment.		It has been identified that one of the potential pollutants are the bags that are used for the production of the seedlings, however, from the project promotes a campaign for owners to make the collection and proper disposal.	
		19. Where waste generation may not be avoided, the Project shall reduce the generation of waste, and recover and reuse waste in a manner that is safe for human health and the environment.		It has been identified that one of the potential pollutants are the bags that are used for the production of the seedlings, however, from the project promotes a campaign for owners to make the collection and proper disposal.	
		20. Where waste may not be recovered or reused, it shall be treated,		Not applicable	

		destroyed, or disposed of in an environmentally sound manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material.			
		21. If the generated waste is considered hazardous, reasonable alternatives for its environmentally sound disposal will be adopted while adhering to the limitations applicable to its transboundary movement		Not applicable	
		22. The Project shall not make use of chemicals or materials subject to international bans or phase-outs. For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol.		Not applicable	
		23. Will the Project involve the application of pesticides and/or fertilisers?	Potentially	*Cupressus lusitanica* can be infested by aphids and pesticides are used to control it. This has only occurred once during the last 3 decades in the project area. However, the use of	

				agrochemicals will be considered the last option.	
		24. Projects involving pest management, the integrated pest management (IPM) and /or integrated vector management (IVM) approaches shall be adopted and aim to reduce reliance on chemical pesticides.		Integrated pest management is proposed, starting with the cultural practices traditionally used by farmers. Also, due to the small area size and use of diverse tree species, chemical pesticides are not necessary and the potential for a disease or pest outbreak are reduced. Therefore, the farmers don't rely on the use of chemical pesticides.	
		25. The health and environmental risks associated with pest management should be minimised with support, as needed, to institutional capacity development, to help regulate and monitor the distribution and use of pesticides and enhance the application of integrated pest management.		The project does not promote the use of agrochemicals and has developed indicators on the health status of the trees. It is planned to have a technical accompaniment that allows making recommendations to the farmers in case it is necessary.	
		26. When Projects include pest management or the use of pesticides, pesticides that are low in human toxicity, known to be effective against the target species and have minimal effects on non-		The project does not promote the use of agrochemicals and has developed indicators on the health status of the trees. It is planned to have a technical accompaniment that allows making recommendations to the farmers in case it is necessary	

		target species and the environment shall be selected.			
		27. There shall be a 'Chemical Pesticides Policy' that is documented, implemented and regularly updated. This policy shall include at a minimum: (a) Provisions for safe transport, storage, handling and application, AND (b) Provisions for emergency situations		Not applicable	
		28. The Project Developer shall not purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous) of the World Health Organization Recommended Classification of Pesticides by Hazard		Not applicable	
		29. Fertilisers shall be avoided, or their use shall be minimised and justified. If the aerial application of fertiliser is used, then		The project does not promote the use of commercial fertilisers. It is planned to have a technical accompaniment	

		measures shall be put in place to prevent drift.		that allows making recommendations to the farmers in case it is necessary.	
		30. Will the Project involve the harvesting of forests?	Yes	The project only includes areas that have had no trees for at least ten years, but harvest will be accepted.	Areas where harvest will occur, the project participants need to replant those areas after harvest to make sure the area will be covered by trees for the whole project crediting period.
		31. The Project shall: (a) Enhance the sustainable management of forests, including the application of independent, credible certification for commercial, industrial-scale timber harvesting, AND (b) Maintain or enhance biodiversity and ecosystem functionality in areas where improved forest management is undertaken.		With agroforestry systems and woodlots, the project aims to reduce the pressure on natural ecosystems. Areas where harvest will occur, the project participants need to replant those areas after harvest to make sure the area will be covered by trees for the whole project crediting period.	
	Q	32. Does the Project modify the quantity or nutritional	Yes	One of the management systems adopted is agroforestry and this	In case this arises, land use zoning

		quality of food available such as through crop regime alteration or export or economic incentives?		alteration has a positive impact. Agroforestry systems in the region lead to an increase in soil fertility, resulting in increased crop yields (approximately 15% according to WWF-Kenya experience in this area). In the event that we have many people opting for woodlots and replacing crops with trees, there might be a reduction in the annual crop production.	and agroforestry planting regime will be encouraged to the farmers.
	R	33. The Project activity shall not negatively influence access to and availability of food for people affected		Crop production is envisioned within the agroforestry system, and food production is always considered as one of the safeguards to define the project implementation areas.	
	Q	34. Will the Project involve animal husbandry?	Potentially	Some grazing will be allowed in the reforestation areas once trees have established i.e. beyond 5 years.	
	R	35. The welfare of animals shall be ensured.		The project will not impact the welfare of wild or domestic animals.	
		36. Excessive or inadequate use of veterinary medicines shall be avoided.		Not applicable	
	Q	37. Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key	No	All the reforestation will take place on private land and no trees will be planted in protected areas or wetlands. Also, planting is only allowed in areas that were no forest for at least 10 years before the project start date.	

		biodiversity areas or sites identified?			
	R	38. No Project that potentially impacts identified habitats as identified above shall be implemented.		The project will not impact on natural ecosystems and HCV zones.	
	R	39. Within the Project the area that is managed by the Project Developer and the area of impact downstream, the following shall be identified and protected/enhanced. In the case of downstream impacts, the Project shall ensure mitigation is in place within the Project Boundary such that the Project shall not adversely affect these areas: (a) Existing patches of native tree species, AND (b) Single solitary stems of native tree species, AND (c) All freshwater resources including rivers, lakes, swamps, ephemeral water bodies and wells		Through agroforestry systems and woodlots, soil conditions are being improved, which can be seen reflected in improved watershed downstream water regulation. In addition, within the farms where we are working, we promote the protection of natural ecosystems, the recognition and care of wetlands, the generation of riparian buffers in natural currents and reservoirs.	

		(d) Habitats of rare, threatened and endangered species, AND (e) Areas relevant for habitat connectivity shall be identified and managed to protect or enhance biological diversity.			
	R	40. If the Project is located in such habitats; the Project Developer shall: (a) Minimise unwarranted conversion or degradation of the habitat. (b) Identify opportunities to enhance the habitat as part of the Project.		Not applicable	
	R	41. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design.		The recommendations of two experts in watershed, biodiversity and water resource management were considered. Summaries can be found in Section D of the PDD	
	Q	42. Are there any endangered species identified as potentially being present within the Project boundary	Yes	These include: mitamaiyo, mitarakwa,munderegu, mukeu,mucerage, muiri, muringa,Muu, muthiga, mikurue. The presence of Mwiri, mutarakwa, muthiga, muhugu (teclea dignorum)	

		(including those that may route through the area)?		mitamaiyu have reduced in the project area and they used to be there. *Acacia xanthophloea, Olea africana, Prunus africana*, Sisigium, Fig trees, *Juniperus procera.* Much of the endangered species are nearly finished. They are so much valued and won't be affected at any time.	
	Q	43. Does the Project potentially impact other areas where endangered species may be present through trans-boundary effects?	No	The project will be implemented in areas degraded and no endangered species are present on those areas.	
	R	44. Under no circumstances shall the Project lead to the reduction or negative impact of any recognized Endangered, Vulnerable or Critically Endangered species		Endangered species have been identified in the project area. These species will not be affected by the project activities, on the contrary, reforestation will attract wildlife and form biological dens.	
	R	45. Habitats of endangered species shall be specifically identified and managed to protect or enhance them		Within the farms where we are working, we promote the protection of natural ecosystems, the recognition and care of wetlands, the generation of riparian buffers in natural currents and reservoirs.	
	R	46. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being		The recommendations of two experts in watershed, biodiversity and water resource management were	

		considered and incorporated into the Project design.		considered. Summaries can be found in Section D of the PDD	

For the Principle 2 - Water, 4.2.1 Impact on Water Patterns/Flows, we use the opinions and recommendations of two Experts to support the analysis and impacts from the activities of the project in Water resources.

Bellow, we annex the Resume of the experts and attached is the CVs:

Name	Resume
DR. WILLIAM OWEKE OJWANG (PhD)	His skills and experiences over the last two decades span academia, research, natural resource management, policy development, community outreach, resource mobilisation and management of partnership/donor relationships. The experience of William in public service delivery has largely shaped his approach to leadership and public management. Over last 15 years, he worked as a senior scientist/senior Assistant Director with the Kenya Marine and Fisheries Research Institute (KFMRI). His work entailed coordination (designing, implementing & managing) multidisciplinary research in Kenyan main freshwater systems and facilitating integration of ecological, economic, social and institutional issues in strategic decisions. Currently, William work for World Wide Fund for Nature (WWF) as the Freshwater Lead Expert and Manager of Africa Rift Lakes multi-thematic landscapes programmes. Working at WWF, a Global Conservation Organisation has not only given him the opportunity to address diverse and often conflicting challenges of natural resource use and human needs in a more holistic and integrated manner but also proven his strong strategic leadership through effective planning (including support to both Narok and Bomet Counties to develop spatial plans), prudent use of

	funds and strong mobilisation of resources from development partners and other donors.
Liliana Andrea Martinez Sarmiento (MSc)	Liliana is an expert in the integrated management of strategic ecosystems (especially páramos, Andean forests, and wetlands), protected areas, and watersheds. She graduated from the Militar University as a biologist and holds a master's in environmental management from The Andes University. As the Lead Expert for Biodiversity and Ecosystem Services, Liliana currently leads the development of compensation schemes for environmental services and biodiversity, including the development of monitoring systems, and she is promoting the integral water use in productive projects. As manager of the Bogota´s Water Fund, she leads a group of professionals and together they worked with private companies, communities, and the public sector, in promoting the conservation of supply water systems for the Bogota city and its area of influence, through the establishment of alliances between main users whose demand for water resources increases constantly and the communities in the upper watersheds. She leaded the design of monitoring system for the Water Fund, including social, environmental and economic indicators. In addition, she has experience in public relations, social management, social investment, and climate finance. Liliana has promoted and led the design and implementation of territorial planning instruments, focused on the sustainability of ecosystems, risk management, distribution of ecosystem services, and implementation of incentives for conservation, monitoring systems and identification of challenges to

	face climate change, for both the public and private sectors. She has a basic knowledge in the management of ArcGIS. In an initiative funded by the Climate and Development Knowledge Network (CDKN), Liliana coordinated the Colombian analysis of incentive schemes for conservation which was done for 6 Latin American countries to assess their potential as a model of development compatible with climate (DCC). For the particular case of Colombia, it has knowledge and active participation in regional groups for the shared management of strategic ecosystems, protected areas, and watersheds. She also supported the design of a climate change decision-making tree, in the adaptation component, for the Ministry of Environment and Sustainable Development, through the company ECONAT.

SECTION E. Local stakeholder consultation

E.1. Solicitation of comments from stakeholders

Thirteen meetings were carried out as part of stakeholder consultation. Working through the WRUAs, CFAs, a forester and the local administration across the basin, stakeholders were invited to the LSC meetings through Text messages, phone calls emails and public notices one month prior to the meetings. Follow up phone calls were made to confirm participation. The choice of the venues, dates and times was made by the lead institutions in consultation with the local administration as the period during which the LSCs were conducted there was political instability in Kenya and therefore the government needed to be aware of all the public meetings.

The objective of the meeting and the overview of the discussion are explained to the participants as part of climate setting and as a request to participate as individuals and or families who own land and can make independent and honest decisions without being coaxed to do so. The language (Kukuio, Massai or Swahili) to be used was decided by the participants, including the need to use a translator when they consider it appropriate. The report presented during the LSC meeting was in English and Swahili. The Gold Standard Procedure Requirements and Guidelines were followed for the local consultation design.

E.2. Summary of comments received

The most relevant comments taken from the local consultation with stakeholders are presented below. The complete information on the comments and assessments collected during this process are included in the final LSC report.

Why should the community use the credit money in building a communal project while the trees will be planted on individual land? There was a concern that the farmers planting the trees on their own farms should receive the full benefits, have liberty to choose what to do with the money or receive a percentage of the money for personal use rather than being compelled as a community. (Murwaki-Upper Turasha Kinja, Aberdare-Kiburu, Lower Malewa, Upper Malewa, Ngondi, LSCs)

The individual farmers have liberty to choose what to do with the money and therefore the community was made to understand the comment given by raising the question. This was provided just as an example of what they can decide as a community and also what they can do with the money gained from the carbon credits, if they are willing to go in that direction.

Is it allowed to cut a full-grown tree for firewood or selling? (All the LSCs)

Yes, once the tree has grown and requires pruning, you can prune and use the branches as firewood or cut a few trees, but in that case you need to replace the trees immediately so that the project remains viable.

What kind of trees should be planted/are acceptable by the project? (All the LSCs)

The species to be planted depend on the farmers' preferences, tree species available and the planting mode selected by the participating farmers. E.g. a farmer doing agroforestry might consider planting species such as gravellier, prunus, casuarina, Olea, etc. while those doing woodlots might consider cypress and pine. The overall objective is to have a Native: Exotic ratio of 51: 49. All trees seeds should be certified by KEFRI.

Will the project include those that have already established woodlots and are interested in the project? (upper Turasha kinja, Wanjohi, Middle Malewa, Upper Gilgil and Aberdare-Kiburu CFA LSCs)

The project does not provide for this. It requires that the land should be bare for about 10 years before being eligible for the program.

GPS will be used to record the positions of the farms interested in the project and then they will be overlaid with the eligibility map to determine whether they are eligible or not. In addition, the seedlings to be planted on the farms for this project need to be certified.

How long is the contract; since one might think of rotating the land portion for planting something else or some more trees? (Wanjohi, Mkungi-Kitiri, Upper Turasha Kinja LSCs)

The funds are secured for 7 years; however, the project will run for 30 years, mainly from the sale of Carbon credits and other benefits from the trees.

Can the participating farmers receive carbon credits before 7 years? (Upper Turasha Kinja, Wanjohi, Mkungi- Kitiri LSC)

The trees must be mature enough to guarantee generation of carbon credits. The trees are anticipated to have reached this stage after the seventh year or above. This is the reason why the carbon credits will be generated from year 7 and over.

The carbon credits will be generated before but will be used by a company to offset its emissions.[10]

What is the name of the project? (Geta CFA LSC)

Lake Naivasha Basin Reforestation Project

Is there another group in the area that have been promoting the same kind of a project for carbon credit? (Upper Turasha Kinja LSC)

No, there is no similar projects in the area, though there is an organization that attempted the same in Aberdare forest, but it did not go well because the local communities near this forest were never involved in the design phase. Their inputs were never considered before the project started. Moreover, this was not carried out in the gazetted Aberdare forest, while Lake Naivasha Basin Reforestation Project will be carried out in individual farms.

Who will get the credit payments after the initial owner dies? (All the LSCs)

The person who inherits the land will be entitled to the carbon credits generated. But this is subject to whether they will continue or not with the contract terms. (Annex 5)

What happens if the owner plants the tree and have the agreement with the organization but later sells the land to another person; who will get the Credits? (All the LSCs)

In order for the new owner to receive carbon credits, he/ she must commit to and abide by the Gold Standard, stated earlier and which shall also be availed in the contract.

The issue of inheritance; where the father for instance dies and leaves the land with the trees but subdivided to the sons – can the project in such a case still be valid and who receives the payment? (Upper-turasha Kinja, Geta, Mkungi Kitiri, Wanjohi, Gilgil, Tumaini LSCs)

The benefit can be **subdivided** amongst the new owners as long as they continue to commit to the project.

Are fruit trees eligible for the carbon credit project? (All the LSCs)

Some of the fruit trees such as avocados might be eligible since they can survive for a long time and are classified as trees while others like oranges and tree tomatoes are classified as shrubs and therefore will not be eligible for the project. In addition, in the case where a farmer will need to plant fruit trees, the cost of buying such seedlings will be shared between the project and the farmer. This is because the cost of buying fruit

[10] This comment was not clearly answered during the LSC, therefore during the feedback round, more details and a clarification will be provided.

seedlings is higher than buying tree seedlings and this might lead to higher budget implications. The cost of purchasing a tree seedling is set at KSh 15 in the project.

What Kind of species will be eligible for the project? (All the LSCs)

There are some species good for agroforestry e.g. mukorombothi, mwiri, grevelia, prunu etc. the community must have the kind of species it wants to plant on its farms, but in most areas this was not completely resolved. It will be done during registration and other trainings, once the community will select the species they would like to plant on their farms. But in case they select the species that won't be eligible for the project, they will be advised and supported.

How will the project support the land owner in the issue of air cleaning? (Middle Malewa LSC)

When the project will be in the place and working, then the air cleaning will be universal and will benefit all the people in the area and in the whole planet at large.

How will the nursery owners in the area benefit from the project since previously there were other donors who supported in starting of the nurseries and have been supporting in buying seedlings from them but in understanding, this project is focusing on new/different nurseries thus meaning the existing ones will be left out. (Geta CFA, Middle Malewa, Aberdare-Kiburu CFA, Upper Malewa, Mkungi Kitiri LSCs)

A few of the existing nurseries from the area were selected and guided by the requirements of the project and the way in which certified seedlings should grow in accordance with the requirements that will then be refunded/bought by the project and distributed to the community within this region. Other projects will continue buying seedlings from previously existing nurseries.

Will the project be started and then after sometimes the donor neglects it leaving it to die and the community be left without guidance: "This have been so common with other projects"? (Geta CFA, Middle Malewa, Aberdare-Kiburu CFA, Upper Malewa, Mkungi Kitiri LSCs)

The project is expected to run for at least 30 years, sustainability is key. Monitoring will be done for each performance certification i.e. once in 2020/2021 and once in 2023. A community-based monitoring system will be established to generate local capacities and bring further benefits to the participating communities, as well as giving them ownership of the project.

In addition to the monitoring undertaken for the performance certification, the project implementation team will carry out frequent monitoring checks (estimated to be every three months) for the continuous assessment of the project success and to help identify project risks at an early stage. This monitoring will be done using ODK to keep records of all data collected.

Are people with small pieces of land like 0.5 of an acre eligible for the project? (All the LSCs)

Yes, they are also eligible for the project since they can plant the trees along the boundaries of their farms or in an agroforestry manner.

Can the community join hands and do a group plantation for the project? (Middle Malewa LSC)

This is possible but they will need to have an agreement/arrangement with the person in charge of the public lands e.g. the chief, the parents and board of a school etc.

In derelict land such as quarries and other degraded public land; can the project support in the rehabilitation of such? (Ngondi, Aberdare Kiburu CFA, Geta LSCs)

Yes, the project can support rehabilitation of public areas but this will require prior consultations with the owner of such places and collection of information about how big the area is in order to determine what kind of rehabilitation will be done.

Can the project assist in the provision of water in areas that do not yet have water so that it can assist in the watering of trees while they are still young during the dry seasons? (Mkungi Kitiri WRUA)

This can be done in other arrangements and other projects in collaboration with the local community and other organizations. E.g. construction of water pans and installation of dam liners for harvesting run off. However, it will require a plan and a proposal that demonstrates what is really required and what can be presented to different donors to support a specific project, according to their policies.

Is the project including the trees that had already been planted; if so, can one be allowed to cut them down or prune them to plant the species provided by this project? (Middle Malewa, Lower Malewa, Upper Gilgil, Mkungi kitiri, Wanjohi LSCs)

No, the project does not interfere with the already existing trees. The project aims to improve the tree cover in the basin and it is not recommended to cut the already existing trees. Also, as one of the eligibility, the area to be planted by these trees should not have been covered by trees (Forest) for at least 10 years.

Who are eligible for the project and what are some of the eligibility conditions? (All the LSCs)

The project focuses on the lands where trees have not been in the last 10 years. A map will be used to decide on the legitimacy of these farms and ensure that those recruited will belong to the eligible category. Prove land ownership and compliance with the terms of contract will also be some of the other conditions to be considered.

When will the project start? (Upper Tursaha Kinja LSC)

The project started in 2017, (development of Key project information, project design document and work plan). The first 5 LSCs were also made at the end of 2017. Planting will take place during the long rains of MAM[11], beginning April of 2018. The planting will take place in three years during the same season, beginning 2018-2020.

Will there be fencing provided by the project to protect planted trees? (Mkungi Kitiri LSC)

No. Trees are expected to be protected by the owner of the farm, more precisely the person who has registered the project. For instance, they should be protected the same way the crops are protected. If fencing needs to be done, this local arrangement will be executed by the farm owner, which is not prohibited.

In the case that some of the trees planted die before maturity, who will be responsible for replacing them? (Al the LSCs)

Trees that die accidentally will be replaced by the project. However, each farmer will be responsible of taking care of their trees. The progress will be monitored by selected farmers (coordinators) who will identify the small hitches and the progress of the project. To ensure that a higher survival rate is achieved, the project will offer technical assistance through the use of officers from KFS and Agriculture, for instance, in the case of some of the tree species such as *Cupressus lusitanica* being infested by aphids, the best solution will be provided.

Brief description of Carbon credit? (Kianjogu, Mkungi kitiri, Geta CFA, Aberdare Kiburu CFA LSCs)

Carbon credit is a term for any tradable certificate of one tone of carbon dioxide or the mass of another greenhouse gas with a carbon dioxide equivalent to one tone of carbon dioxide. It is essentially a permit which allows a country or organization to produce a certain amount of carbon emissions, which can be traded.

The farmers have to decide how they want to use the funds provided by the carbon credits. Since these funds are relatively small, they need to look at the benefits of this project at a different angle. For instance, what are the other benefits they gain from the trees.

Can orders of tree species required be taken in advance for those people interested in the project then provided during the planting season? (All the LSCs)

Forms will be availed in the WRUA office where farmers that are willing to participate in the project will write down their names and the number of trees that they would like to have in their farm as well as the farm acreage they are willing to offer for planting. This form will design the basis at which trees will be distributed. During

[11] March April May (MAM) rainy Season: these are the estimated months when long rains in the region are usually received.

distribution, the farmers will also write what species of seedlings they have received. In case of any deficit, this will be covered during the next planting season.

Will trees be provided to youths who don't have ownership of the farms but after consulting their parents/ one who has authority over the land to get a piece? (Wanjohi, Mkungi Kitiri LSCs)

During implementation/ planting, the owner of the farm is the one who will be consulted before planting. The farm owner is the one who will decide where the planting will take place.

Fruit trees to be planted include avocados that can survive in the area, meaning that these must also be certified. Small portions of this can be availed so that famers can mix with other trees species, though will need some extra cash from the farmer since the project can only provide ksh 15 per seedling, and some of the cost for these fruit tree seedlings surpass this.

The species have already been decided by South Pole and WWF with the help of local farmers. In case more species will be needed, these can be added in the subsequent years ie 2019 and 2020 since seedlings for 2018 are already in the nurseries, and this will be difficult to change. Other factors to have in mind while choosing to add seedlings, is the cost per seedling and the Native: Exotic ration which should at all cases be maintained at 51: 49 respectively.

Can the project help people establish tree nurseries for the Project, for those who are interested in the project but don't have large pieces of land for plating? (Geta CFA, Middle Malewa, Aberdare-Kiburu CFA, Upper Malewa, Mkungi Kitiri LSCs)

No. All tree seeds planted for the project must be certified from KEFRI. A receipt of purchase to confirm this, shall be provided before WWF obtains seeds from the nurseries.

Can the project bring conflicts with the neighbors or wildlife? (All the LSCs)

Conflicts might arise with the neighbors especially because of the transboundary boundary issues. When trees are planted near the boundaries, they may extend their roots and canopy to the neighbors' farm, thereby affecting crop production. To remedy this, trees will be planted at a specific distance from the boundary. The appropriate planting buffer distance from the neighbor's boundary will be determined by the Kenya Forest Service and Agricultural Officer in regard to the tree species planted.

Human wildlife conflict:

Monkeys might find home in the grown trees which might interfere with their crops. In case this happens, Kenya Wildlife Service officers are used to manage animals such as the monkeys when present in the area.

Keep the required distance from the border while planting the trees to avoid quarrels.

There are people in other areas (Laikipia) doing carbon credit and are paid 15ksh per tree/year, is this project related to that? (Lower Malewa LSC)

The Laikipia Project is not directly linked to this one although they could be similar. However, according to this project, the credits will be Kshs 1.50 per tree per year. It is therefore important for people to consider the benefits they will get from the trees and not the monetary value.

One of the Local stakeholders wanted to know why the project time frame (30 years) was too long

This is to allow the slow growing trees especially the hard wood such as red cedar and ficus which takes considerably long time to mature. However, in the course of the implementation of the 30-year project, mature trees can be harvested and replaced with new tree seedlings. Chief Magdalene Kariuki of Murwaki area (Upper Turasha Kinja) attributed the low turnout of the meeting to Kenya Bureau of Statistics census exercise which have been ongoing in the area.

Overall, the comments expressed by the community about the project during the meetings were good. The Stakeholders consider that the project allows uses indigenous species that had been lost over time. They state

that trees can benefit rain cycles, air quality, favour local fauna, improve soil productivity and reverted the high deforestation that the area has suffered in previous years.

E.3. Report on consideration of comments received

During the local consultation and after the blind exercise, the stakeholders had the opportunity to ask questions and clarification to the assistants about the project. All the comments made were collected and those comments that suggested some modification in the project activities were evaluated in the local consultation report considering the objective and scope of the project.
The table below shows the evaluation of the community's comments and the justification for them being taken (or not) into account.

Stakeholder comment	**Was comment taken into account (Yes/ No)?**	**Explanation (Why? How?)**
Will the project be continuously supervised by donors for avoiding that the project die?	No	The project will receive funds from the donor for the first seven year, but not for the whole crediting period. However, the project sustainability is key; therefore, the monitoring will be done for each performance certification i.e. once in 2020/2021 and once in 2023. A community-based monitoring system will be established to generate local capacities and bring further benefits to participating communities as well as giving them ownership of the project. The project implementation team will carry out frequent monitoring checks (estimated to be every three months) for the continual assessment of project success and to help identify project risks at an early stage. This monitoring will be done using ODK to keep records of all data collected.
Will there be fencing provided by the project to protect planted trees?	No	Trees are expected to be protected by the owner of the farm, the one who has registered for the project. For instance, they should be protected the same way the crops are protected. If fencing needs to be done, a local arrangement will be executed by the farm owner, which is not prohibited.
In the case that some of the trees planted die before maturity, who will be responsible for replacing them?	Yes	Trees that die accidentally will be replaced by the project just during the first three years. However, each farmer will be responsible of taking care of their trees. The progress will be monitored by selected farmers (coordinators) who will identify the small hitches and the progress of the project. To ensure that a higher survival rate is achieved, the project will offer technical assistance through the use of officers from KFS and Agriculture, for instance, in the case that some of the tree species such as *Cupressus lusitanica* being infested by aphids, the best remedy will be provided by them.
Can the project help people establish tree nurseries for the Project, for those who are interested in the project but don't have large pieces of land for plating?	No	The project will guide the establishment of the tree nurseries but the owners must buy certified seeds from KEFRI. An official receipt shall be provided as a confirmation before WWF obtains seedlings from the nurseries.
Can the project bring conflicts with the neighbours or wildlife?	Yes	Conflicts might arise with the neighbors, especially the transboundary boundary issues. When trees are planted near the boundaries, they may extend their

		roots and canopy to the neighbors' farm, thereby affecting crop production. To remedy this, trees will be planted at a specific distance from the boundary. The appropriate planting buffer distance from the neighbor's boundary will be determined. Human wildlife conflict: Monkeys might find home in the grown trees which might interfere with their crops. In case this happens, Kenya Wildlife Service officers are used to manage animals such as the monkeys, when present in the area. Keep the required distance from the border while planting the trees to avoid quarrels.
Stakeholder wanted to know if tree seedlings will be purchased from nurseries within their Water Resource Users Association (WRUA)	Yes	For this year, the target of tree seedlings to be planted was relatively low in comparison to the subsequent years. And as such, it was not logical to consider having every WRUA with its nursery. For the subsequent years (2019 and 2020), since the number of tree seedlings required will be higher, the number of tree nurseries will increase. This is when there is a possibility of having every WRUA with their own tree nursery.
Will those with fruit tree nurseries be considered in the project?	Yes	This will depend on the required number of fruit trees especially avocado. Again, as stated earlier, much of the trees to be planted will be non-fruit trees, since the project provide kshs 15 for every tree seedling and fruit trees surpass this amount. Those farmers interested with fruit trees will have to incur extra cost to purchase.
Time limit for the LSC meeting (More time should be availed)	Yes	For the coming awareness campaigns, more time will be dedicated taking into account the aim of the meeting in a way that enough time will be availed. In addition, before the actual plantation commences during the long rainy season (MAM) beginning April, we shall have met the interested farmers in the project for training and further discussion. Regular awareness campaigns will also be carried out before this period so as to get the input of those that did not attend the Formal ones.
Chief Magdalene Kariuki of Murwaki area (Upper Turasha Kinja) mentioned that the community in her Location have large tracts of land, especially along the rivers, and therefore they will convert that land to tree planting and use the chance to benefit from the project.	Yes	This was addressed in the planting regimes (i.e. Agroforestry and woodlots) that are included in the project. Since there is no maximum limit established for the plantation size, they can choose to reforest an area in their farm as long as this is in line with the project design.
Will they also consider the issue of long-lasting species like Cider that makes better poles and timber?	Yes	Cider and other species that are good for poles will be planted in all the areas where they do well.

Appendix 1. Contact information of project participants

Organization name	South Pole
Registration number with relevant authority	
Street/P.O. Box	Technoparkstrasse 1, 8005
Building	
City	Zurich
State/Region	
Postcode	
Country	Switzerland
Telephone	+41 43 501 3550
Fax	
E-mail	c.grobbel@southpole.com
Website	www.southpole.com
Contact person	Christoph Grobbel
Title	
Salutation	
Last name	
Middle name	
First name	
Department	
Mobile	
Direct fax	
Direct tel.	
Personal e-mail	

Appendix 2. Summary of post registration design changes

Version	Date	Remarks
1	April 2018	First submission of the project documents for Preliminary review
1.1		Submission of project documents answering the first round of CARs from GS for Preliminary review

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