



TEMPLATE

Key Project Information & project Design Document (PDD)

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VERSION v. 1.2

RELATED SUPPORT

- TEMPLATE GUIDE Key Project Information & Project Design Document v.1.2

This document contains the following Sections

Key Project Information

SECTION A. DESCRIPTION OF PROJECT

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES)
AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

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KEY PROJECT INFORMATION

GS ID of Project	GS6504
Title of Project	Lake Naivasha Basin Reforestation Project
Time of First Submission Date	October 2020
Date of Design Certification	2018
Version number of the PDD	1.2
Completion date of version	02.05.2023
Project Developer	WWF Kenya
Project Representative	South Pole Carbon Asset Management Ltd
Project Participants and any communities involved	<p>Project Representative: Swiss Carbon Value Ltd. Contact: William Garret Address: Technoparkstrasse 1, 8005 Zurich, Switzerland email: w.garret@southpole.com Phone: +41 43 501 35 50 (reception)</p> <p>Project Participant: WWF Kenya Contact: Mohamed Awer Address: The Mvuli, Mvuli Road off Raphta Road, Westlands, PO Box 62440-00200, Nairobi, Kenya email: mawer@wwfkenya.org Phone: +254(0)722203407+ 254(0)733333409</p> <p>For other entities participating in the project, please refer to section A.1 Purpose and general description of project</p> <p>In addition, small and medium landowners that belong to Kikuyu and Masai communities will be directly involved in the reforestation activities in their areas.</p>
Host Country (ies)	Kenya/Nakuru County in the catchment for Lake Naivasha
Activity Requirements applied	<input type="checkbox"/> Community Services Activities

	<input type="checkbox"/> Renewable Energy Activities <input checked="" type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A
Scale of the project activity	<input type="checkbox"/> Micro scale <input checked="" type="checkbox"/> Small scale <input type="checkbox"/> Large scale
Other Requirements applied	
Methodology (ies) applied and version number	Gold Standard Afforestation/Reforestation (A/R) Greenhouse Gas (GHG) Emissions Reduction & Sequestration Methodology, version 1 – Published July 2017
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A
Project Cycle:	<input checked="" type="checkbox"/> Regular <input type="checkbox"/> Retroactive

Land-use & Forest Key Project Information¹

Scope:	<input checked="" type="checkbox"/> Forestry <input type="checkbox"/> Agriculture
Silvicultural system:	<input checked="" type="checkbox"/> Conservation (no use of timber) <input type="checkbox"/> Selective Harvesting <input checked="" type="checkbox"/> Rotation Forestry
Project Area (ha):	1,270.84ha (the basin 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 1,150 ha of land will make up the project area within Nakuru County in the catchment for Lake Naivasha.

¹ Please refer to Appendix 3 for detailed information on LUF projects

Eligible Area (ha):	1,150 ha				
10% Set Aside Conservation area (ha):	115 ha destined for the conservation. These are relating to riparian areas.				
Evidence that Project Area Boundary is clearly distinguishable in the field:	<p>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 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.</p>				
Planting Area	<p>1,150 ha</p> <p>To be defined, however the goal is to plant 1,150 ha, starting in 2018 with 193 ha, then 437 ha in 2019, 323 ha in 2020 and finally 196 ha between 2021-2022.</p>				
How many Modelling Units (MUs) are included in the eligible area:	MU	Planting Year	Catchment position	Management System	Potential planted area (ha)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	2018	Lower	Woodlot	10	
		Middle	Agroforestry	7	
	2019	Upper	Woodlot	15	
		Lower	Agroforestry	32	
	2020	Middle	Woodlot	68	
		Upper	Agroforestry	61	
		Lower	Woodlot	33	
		Middle	Agroforestry	84	
		Upper	Woodlot	112	
		Lower	Agroforestry	66	
		Middle	Woodlot	116	
		Upper	Agroforestry	26	
		Lower	Woodlot	0	
		Middle	Agroforestry	0	
		Upper	Woodlot	13	
		Lower	Agroforestry	126	

			Upper	Woodlot	39
				Agroforestry	145
			Lower	Woodlot	0
				Agroforestry	0
	2021-		Middle	Woodlot	54
	2022			Agroforestry	
			Upper	Woodlot	42
				Agroforestry	100
		Total			1,150

Summary of New Areas added (copy and insert as needed):

Size (ha):	
Date Added	

Table 1. Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in B.6.)	Estimated Annual Average	Units or Products
SDG 6 Clean Water and Sanitation	Change in the extent of water-related ecosystems over time	1,150	ha
SDG 13 Climate Action (mandatory)	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management	One survey made per WRUA during the meeting and training season developed by WWF Kenya	# surveys
SDG 15 Life on Land	The amount of CO ₂ removed by project activities	6,002	VERs (Annual average over the crediting period)

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 South Pole Carbon Asset Management Ltd. The project is working with 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 35 years, from 2018 to 2052. The planting will be conducted during the initial years of the project, from 2018 to 2022. The reforestation target area is 1,150 hectares of individually owned farmland under both woodlots and agroforestry management systems.

The project boundary is represented in the first instance by the hydrological delimitation of the Lake Naivasha Basin. With this zone defined, the identification of the land and the generation of the polygons to be included for the plantations will be through a voluntarily process, with the guidance of WWF and taking into account the result of the eligibility assessment (see Figure 7). To date, a total of 954 ha is included and has already been planted, however it is important to mention that it is expected that more farmers and new areas will be included in future years to complete the 1,150 ha objective.

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 Community Forest Associations (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 land ownership 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. The role of each part and key actors is presented in Table 4.

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
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
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
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.

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.

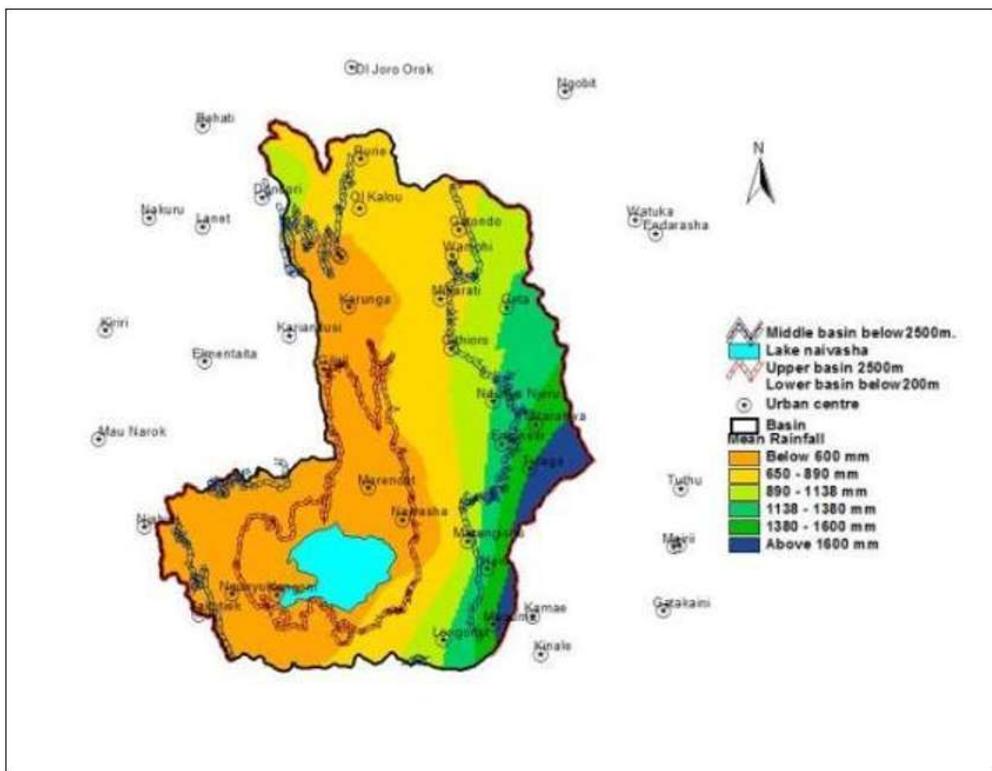


Figure 1. Lake Naivasha Basin Precipitation Map

Source: WWF Kenya

The land use that existed prior to the project's implementation consists of cropland, grassland and shrubland. For the project area, and according to the additionality assessment, the most plausible baseline scenario is the continuation of the agricultural practices – mainly the implementation of horticulture and subsistence crops. This is in response to the traditional land use and economical practices detected in the local communities.

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 produce is sold to international markets. The middle elevation areas are mostly used for annual cropland by smallholding farmers, while 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.

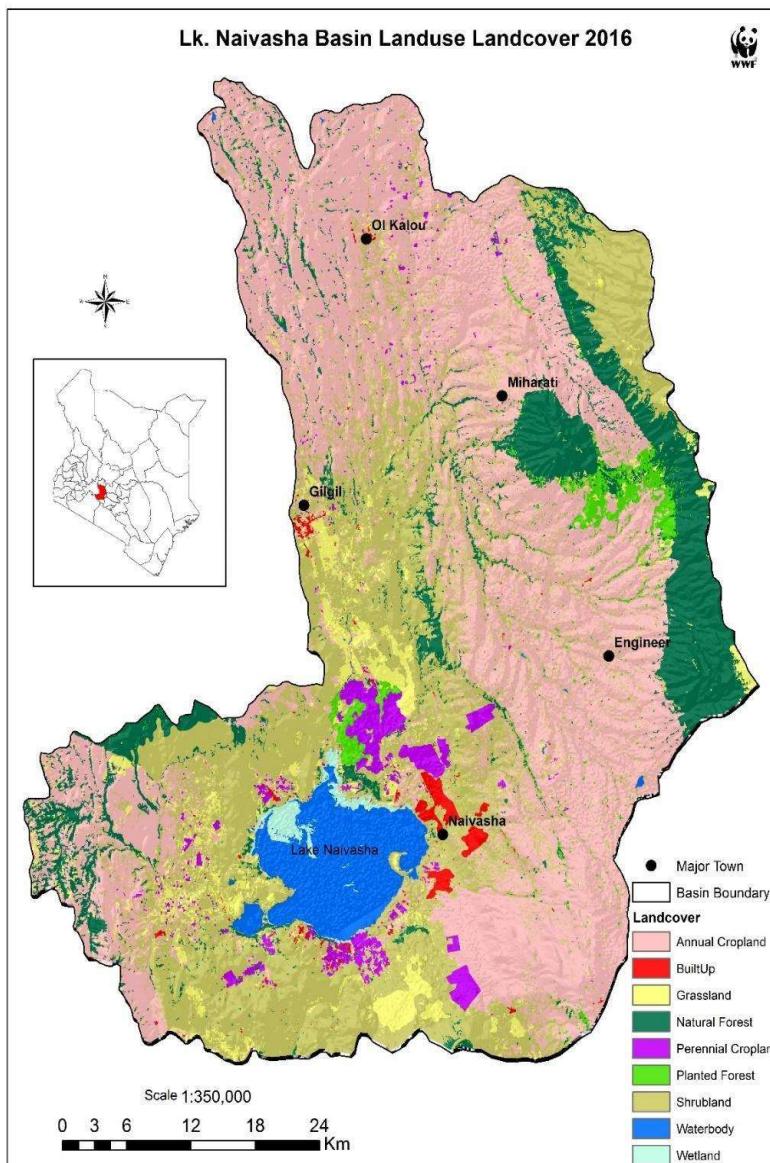


Figure 2. Lake Naivasha Basin Land Use and Cover 2016

Source: WWF, 2016. Naivasha Basin Lands Use Landcover

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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Local implementation anchor • Coordinate implementation activities with WRUAs and CFAs • Local stakeholder consultation • Farmer selection • Mapping of project areas • Procure and deliver tree seedlings to participating farmers

Project participant	Description of role
	<ul style="list-style-type: none"> ● Farmer training (on tree establishment and management) ● Monitoring ● Annual reporting ● Implement rewards mechanism
Kenya Forest Service	<ul style="list-style-type: none"> ● Design of forest management systems ● Training of participating farmers in forest management
WRUA	<ul style="list-style-type: none"> ● Implementation partners ● Farmer selection ● Monitoring
CFA	<ul style="list-style-type: none"> ● Implementation partners ● Farmer selection ● Monitoring
Imarisha	<ul style="list-style-type: none"> ● Key stakeholder to facilitate community engagement activities ● Maintain platform with monitoring data
Oserian	<ul style="list-style-type: none"> ● Water management and monitoring activities ● Riparian woodland rehabilitation around Lake Naivasha
Flamingo	<ul style="list-style-type: none"> ● Water management and monitoring activities ● Provision of seedlings

The Naivasha project contributes to three specific Sustainable Development Goals (SDGs); SDG 6, SDG 13 and SDG 15. The first – SDG 6 Clean Water and Sanitation – includes target 6.6, to protect and restore water-related ecosystems. The project will contribute through the conservation of the areas defined as riparian forest, and with the increase of the forest area as a result of the reforestation activities. This process will be reflected in the improvement of the water regulation of the basin and an increase in the forest connections.

For SDG 15, Life on Land, with the implementation of the project, some aspects are developmental, such as the sustainable management of the forest and the increase of the afforestation and reforestation globally. This is reflected in the increase of the forest area due to the implementation of the woodland and agroforestry systems.

A.1.1 Eligibility of the project under Gold Standard

This project is eligible for Gold Standard Certification in accordance with the approved methodology: the Gold Standard Land Use & Forests Activity Requirements, Version 1.2.1, published April 2020.

Aside from this eligibility assessment, it is important to note that the project area is not registered or part of any other carbon project. This can be checked using the ID 6504, as generated by the Gold Standard². In addition, the project areas were checked in the list of projects from Verra and the Gold Standard, and from a total of 22 and 115 projects presented in Kenya, none included the Lake Naivasha Basin³

Kenya is a member of the World Bank Forest Carbon Partnership Facility (FCPF)⁴, with one of the main foundations in its REDD+ strategy being to mitigate the effects of climate and increase the forest cover to a minimum of 10% of the national area, by 2030. This strategy, and the protection and restoration of the forest, are identified as key actions to achieve a national sustainable development. This will be achieved through the institutional work and implementation of policies such as the Constitution, National Development Plan (Vision 2030), The Arid and Semi-Arid Lands (ASALs) Policy, the National Land Policy and the National Climate Change Response Strategy (NCCRS) and Action Plan (NCCAP).⁵ Finally, Kenya is also a part of the UN-REDD Programme Partner Country, and through its commitment to the UNFCCC and the framework of Paris Agreement⁶, has a target to reduce its emission of GHG.

Taking this into account, the project will be aligned to the national objective to increase the forest area of the country. The main actors in the project are WWF Kenya and the Kenya Forest Services (KFS), which have an important role in providing the required support and guidance to the communities to achieve the sustainable management and

² <https://registry.goldstandard.org/projects/details/1771>

³ <https://registry.verra.org/app/search/VCS>All%20Projects> & <https://registry.goldstandard.org/projects?q=&page=1&countries=KE>

⁴ <https://www.forestcarbonpartnership.org/country/kenya>

⁵ The National Forest Reference Level For REDD+ https://redd.unfccc.int/files/kenya_national_frl_report-august_2020.pdf

⁶ <https://www.unredd.net/regions-and-countries/africa/kenya.html>

conservation of forestry resources. The inclusion of small farmers in the project's activities will contribute with the local economic development of the communities.

In considering the carbon rights for the country, the role of the Government and the legislation for the benefits sharing is unclear; this is a process under development. For the moment, it is important to map the existence of a system for rights, and to have access to benefit sharing arrangements⁷. In the project, all the areas presented are the land tenure of private owners; therefore they are the main actors and have the responsibilities for the forest management. In addition, the project includes agreements between the Project Developer and each smallholder which defines the CO₂ user rights of the farmer, and the carbon credit sharing structure for the initial and later phases of the project.

A.1.2 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 South Pole Carbon Asset Management Ltd. The landowners will sign an agreement that gives South Pole Carbon Asset Management Ltd rights to the carbon sequestered until 73,000 tCO₂ emission reduction is reached. To ensure that all the landowners participating in the project are the true owners of the carbon, and in accordance with the methodology for land registration data standards, interoperability and data access in Kenya⁸, they are required to have at least one of the two types of registration in Kenya; title and deed registration. In addition, each smallholder will sign an agreement with the Project Developer. The farmers pass the carbon rights of the carbon credits to South Pole until 73,000 Gold Standard Verified Emission Reductions are generated. Beyond those 73,000 tCO₂, the farmers will have the CO₂ user rights. The contract with the landowners lasts 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. This is aligned with the updated version of the smallholder related legal right requirement (refer to the conservation agreement in English and Swahili)⁹. The signing of the contracts with the farmers is still in progress.

⁷

http://www.kenyaforestservice.org/documents/redd/Analytical%20Study%20on%20Carbon%20Rights%20and%20Benefit%20Sharing%20for%20REDD_%20in%20Kenya.pdf

⁸ (Mburu, Ntonjira, & Njeri, March 20-24, 2017)

⁹ The agreements can be consulted in the support documentation (Supporting documents\Farmer agreements)

This process is managed by WWF, with various meetings and the development of training forums on the project.

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, in the Literature subfolder.

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

During the site visit, the auditor will verify the entity's legal registration number and documentation with each smallholder. Traditionally, these types of certificates have been used to dispossess people of their land, which is why project participants do not allow copies of these types of documents to be made.

Currently, we have a database of all the smallholders we are working with that contains the following information:

- names and contact details from the participating smallholders,
- the locations (GPS points) and area (ha) of their project areas,
- the start and end dates of the smallholders participating in the project.
- the type of planting system

A.2 Location of project

>> The project is located in Nakuru County and includes the entire Lake Naivasha catchment area which is 3,433 km². The basin's altitude varies from 1,765 Meters Above Sea Level (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 3. A map showing protected areas and forest reserves is presented in Figure 4 and infrastructure and permanent water bodies maps are included in Figure 5.

Host Country	Kenya
Region/State/Province etc.	Nakuru County
City/Town/Community etc.	Lake Naivasha Basin

WWF Kenya, The Mvuli Building Mvuli Road off Rhapta Road, Westlands, Nairobi, Kenya

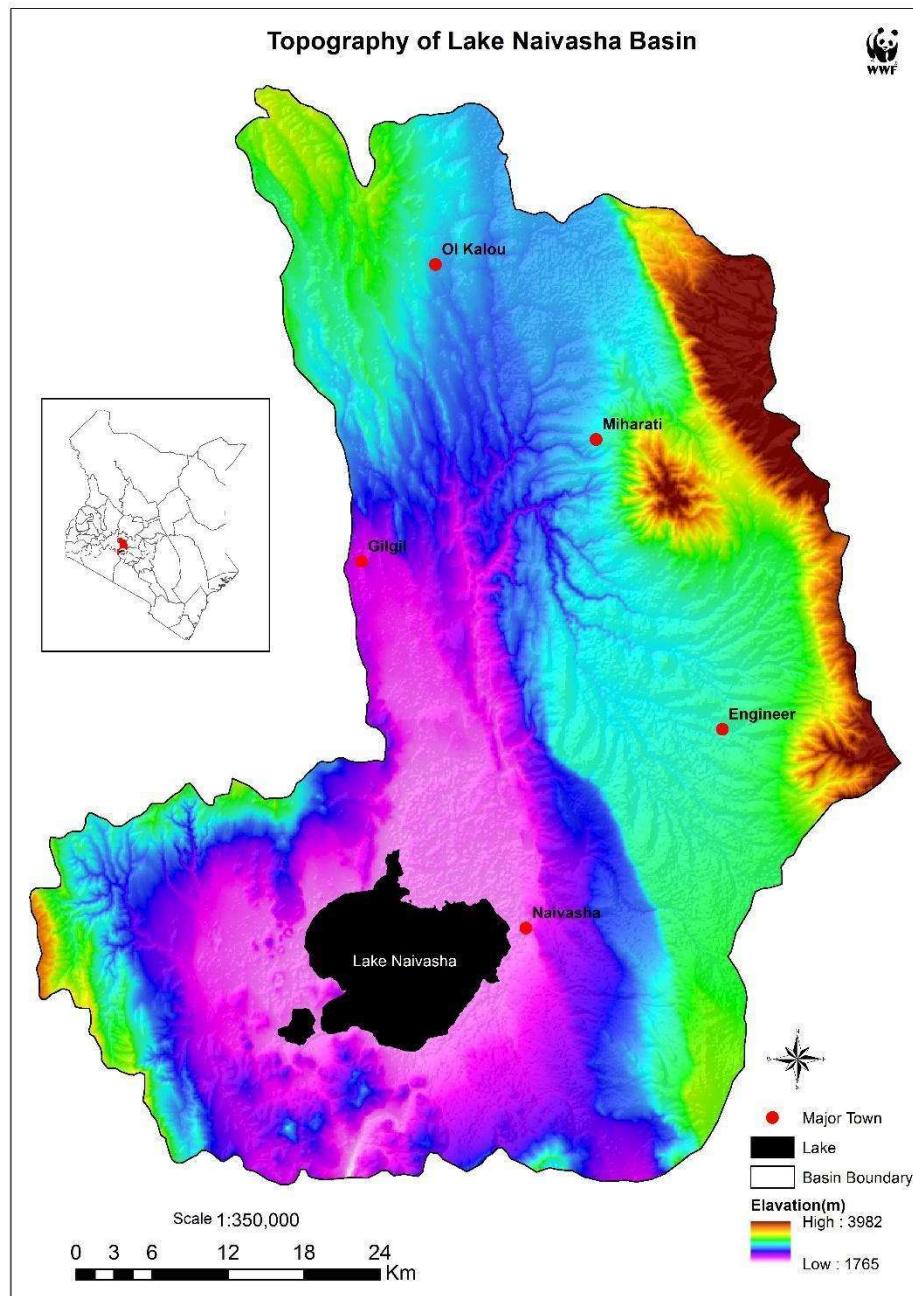


Figure 3. Lake Naivasha Basin topography

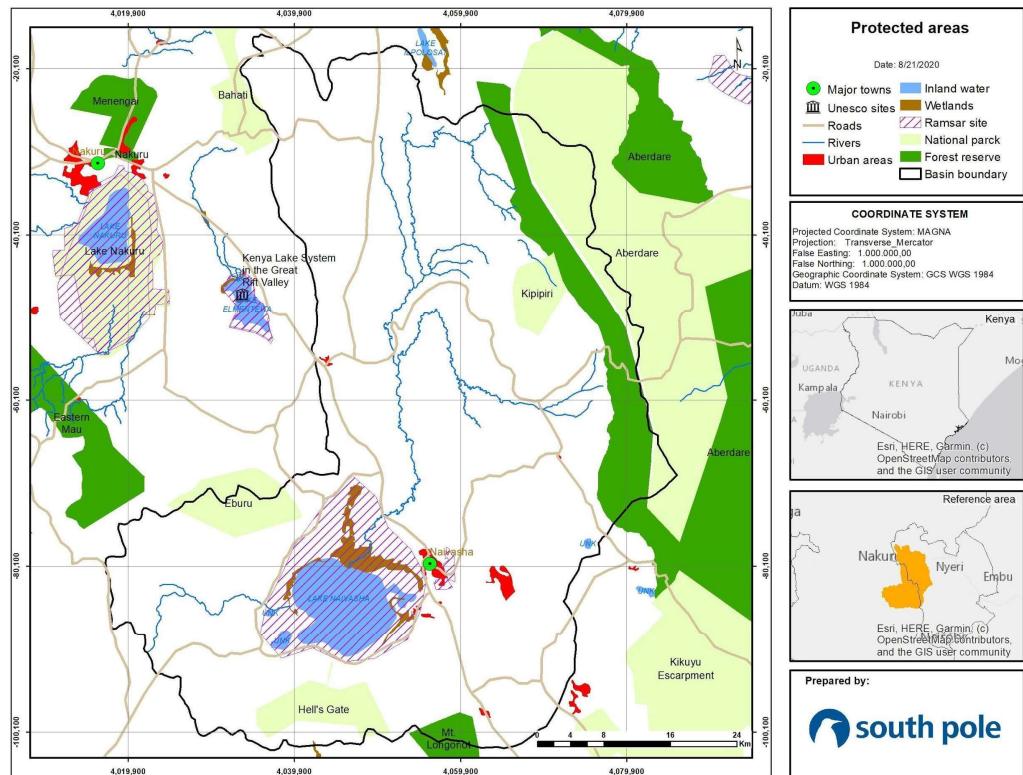


Figure 4. Protected areas and forest reserves

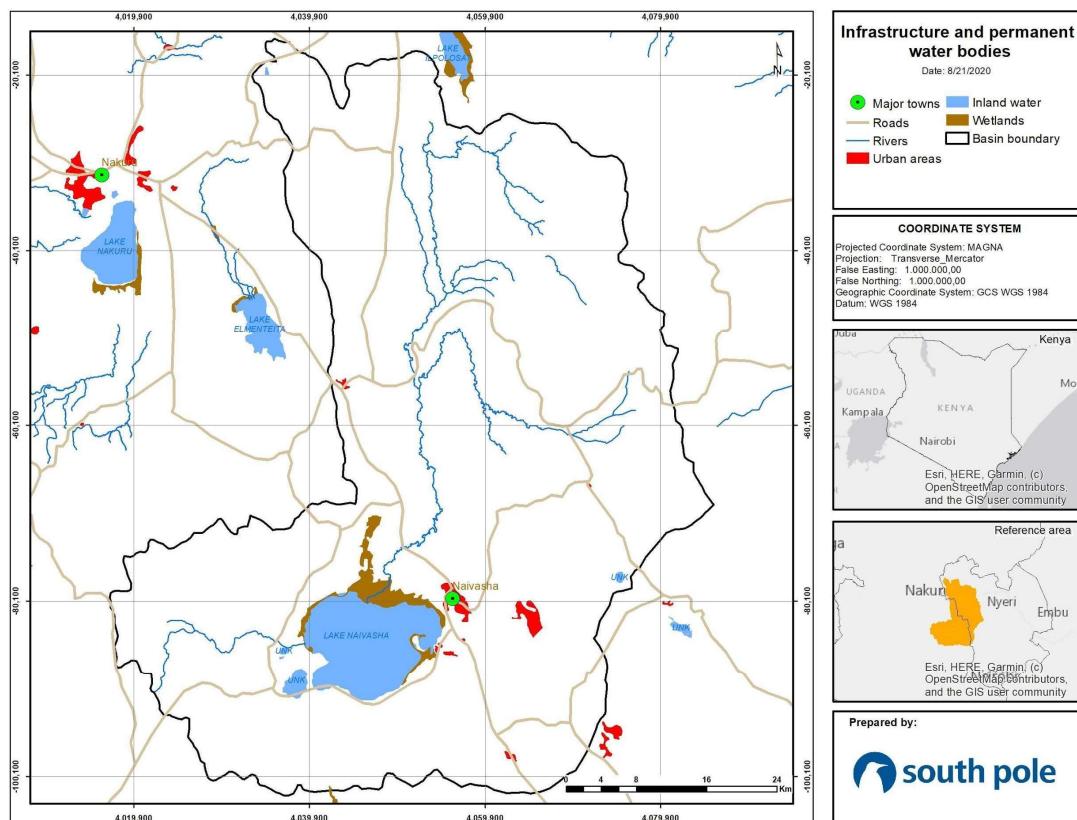


Figure 5. Infrastructure and permanent water bodies

A.3 Technologies and/or measures

>>The project is working with 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. This will be presented with more detail in Section B.6. Sustainable Development Goals (SDG) outcomes.

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 free, prior and informed consent (FPIC) achieved through the LSC process. The criteria for farmer selection may include the motivation of farmers and the eligibility results presented in section A.1.1 Eligibility of the project under Gold Standard.

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. One of the goals of the project is to improve the water regulation in the basin and in the project area through the reforestation and the conservation of land from grassland to forest cover, representing a hydrological benefit for the ecosystem.

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 undertaken 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 1,150 ha from 2018 to 2022, this process is support by the WWF

Kenya to make sure to accomplish all this planted area and achieve the success of the farmer agreements¹⁰.

Over the four-year period the target is to establish 600 hectares of agroforestry and 550 hectares of woodlots. So far 193 ha was been planted in 2018, 437 ha in 2019, 323 in 2020 and 196 ha will be planted in 2021 - 2022. By 2020, all the expected areas have been planted, achieving a total area of 954 ha. In 2021 and the beginning of 2022, it was expected that the remaining 196 ha be planted. However, because of the COVID-19 situation, the plantations schedule presented some delays. As a result, it is expected that these activities will be finished in 2022-2023. Currently, WWF Kenya is doing all the QA/QC processes regarding the field information, shapefiles and agreement with the new farmers to be included in the project. This information will be updated at a further stage of the project.

Table 5. The planted area to date for each WRUA from 2018 to 2022

Period plantation	Catchment zone	WRUA	Agroforestry area (ha)	Woodlots area (ha)	Total area (ha)
2017-2018	Lower	Lower_Gilgil	1.3	0.5	1.8
		Lower_Malewa	0.7	0.6	1.3
		Mariba	7.8	5.7	13.5
	Middle	Middle_Malewa	15.0	32.0	47.0
		Kianjogu	6.9	5.6	12.4
		Mkungi_Kitiri	28.6		28.6
		Upper_Gilgil	9.9	23.7	33.7
		Upper_Turasha_Kinja	22.8	31.9	54.7
	Upper	Lower_Malewa	15.4	20.1	35.4
		Mariba_LongRains	9.1	39.0	48.1
		Mariba_Malewa_ShortRains	8.2	25.3	33.5
2018-2019	Middle	Middle_Malewa_LongRains	88.3	64.6	152.9
		Middle_Malewa_ShortRains	3.0	1.3	4.3
		Murungaru_LongRains	8.7		8.7
		Murungaru_ShortRains	12.2		12.2
	Upper	Kianjogu	8.3	7.1	15.4

¹⁰ Farmer agreements with the farmers and Description project for the establishment of the plantation available in: Supporting documents\Farmer agreements

Period	Catchment plantation zone	WRUA	Agroforestry area (ha)	Woodlots area (ha)	Total area (ha)
2020-2021		Mkungi_Kitiri_ShortRains	13.0	3.8	16.8
		Mkungi_LongRains	29.0		29.0
		Upper_Gilgil	52.9	13.7	66.7
		Upper_Turasha_Kinja_Long Rains	3.2		3.2
		Upper_Turasha_Kinja_ShortRains	4.8	0.1	4.9
		Wanjohi	4.8	1.1	6.0
	Middle	Middle_Malewa		71.7	71.7
		Middle_Malewal_19_20		45.2	45.2
		Murungaru	12.8	9.6	22.4
	Upper	Mkungi_Kitiri		2.7	2.7
		Mkungi_1	7.2		7.2
		Mkungi_2	5.2		5.2
		Upper_Gilgil		66.5	66.5
		Upper_Gilgil_19_20	0.8	20.2	21.0
		Upper_Turasha	1.5	25.6	27.1
		Upper_Turasha_Kinja	24.6	11.8	36.4
		Wanjohi		18.1	18.1
2021-2022	Lower	To be updated in 2022-2023 due to the processing of the field data and the accuracy assessment of the information, such as shapefile, areas, management plans and agreements.			0.0
	Middle		54.0		54.0
	Upper		42.0	100.0	142.0

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 6 illustrates the agroforestry planting design.

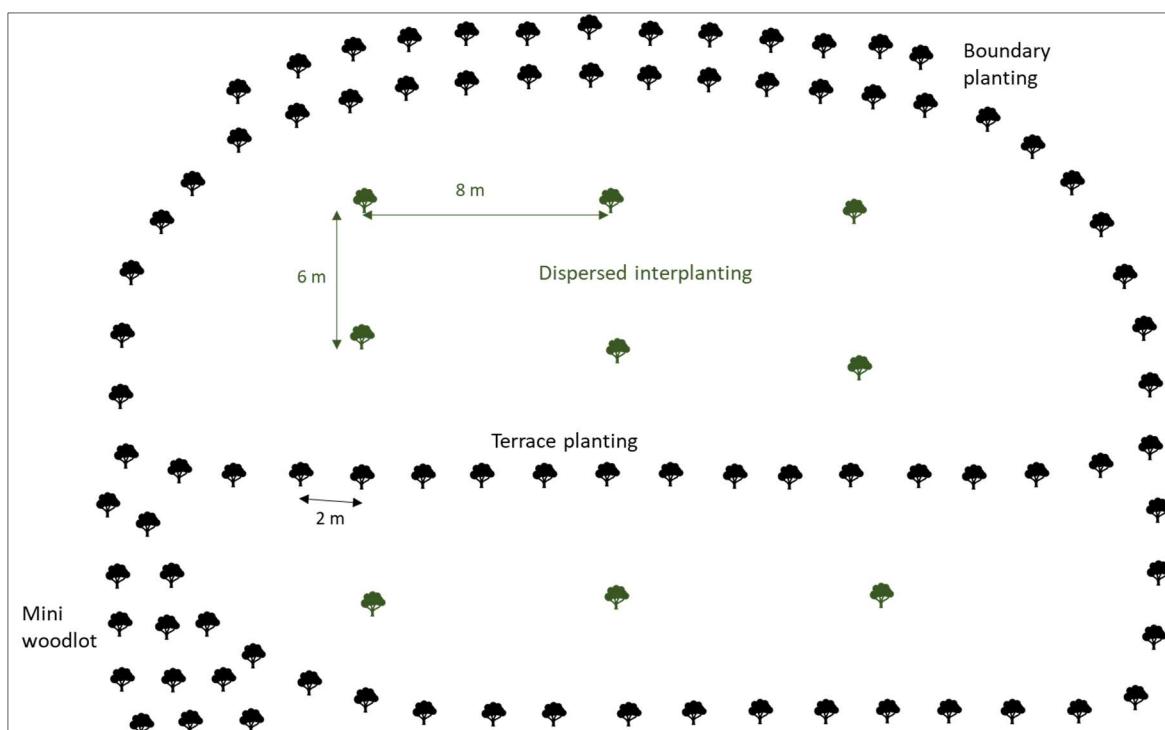


Figure 6. Illustration of agroforestry design

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. For trees planted with extractive roles (such as timber, firewood) the proportion of planting, the silvicultural operations like thinning and rotation, as well as the expected use for each species are included in these tables. They will deliver two rotational periods during the crediting period of the project.

Species planted with conservation objectives will remain in place for the full crediting period of the project, and any extractive activity will be included for these species. This logic is also applied to the woodlot systems

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
<i>Casuarina equisetifolia</i>	Exotic	Fast growing	30	Year 10 (25%) and 18 (25%)	25 years	Firewood, timber, fencing
<i>Grevillea robusta</i>	Exotic	Fast growing	20	Year 10 (25%) and 18 (25%)	25 years	Firewood, beekeeping, fodder and logs for timber.
<i>Olea africana</i>	Native	Slow growing	20	Year 40	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Olea</i> has a very hard wood.
<i>Prunus africana</i>	Native	Slow growing	20	Year 40	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Prunus</i> has a very hard wood.
<i>Mangifera indica</i>	Exotic	Medium growing	10	None	Not applicable	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
<i>Casuarina equisetifolia</i>	Exotic	Fast growing	30	Year 10 (25%) and 18 (25%)	25 years	Firewood, timber, fencing
<i>Grevillea robusta</i>	Exotic	Fast growing	30	Year 10 (25%) and 18 (25%)	25 years	Firewood, beekeeping, fodder and logs for timber.
<i>Olea africana</i>	Native	Slow growing	15	Year 40	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Olea</i> has a very hard wood.
<i>Prunus africana</i>	Native	Slow growing	15	Year 40	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Prunus</i> has a very hard wood.
<i>Persea americana</i>	Exotic	Slow growing	10	None	Not applicable	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
<i>Casuarina equisetifolia</i>	Exotic	Fast growing	5	Year 8/13 and 18	28 years	Firewood, timber, fencing
<i>Dombeya goetzenii</i>	Native	Medium growing tree	20	None	Not applicable	Beekeeping, soil conservation and improved soil fertility
<i>Grevillea robusta</i>	Exotic	Medium growing	10	Year 8/13 and 18	28 years	Firewood, beekeeping, fodder and logs for timber.
<i>Hagenia abyssinica</i>	Native	Fast growing up to 30 metres	30	None	Not applicable	Best for soil fertility, beekeeping (lots of flowers)

Tree species	Native /exotic	Growth habit	Proportion of planting (%)	Thinning	Rotation	Description of role
<i>Olea africana</i>	Native	Slow growing	15	Year 8/13 and 18	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Olea</i> has a very hard wood.
<i>Prunus africana</i>	Native	Slow growing	15	Year 8/13 and 18	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Prunus</i> has a very hard wood.
<i>Persea americana</i>	Exotic	Slow growing	5	None	Not applicable	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, with the exception of *Acacia xanthophloea* trees which are planted 4 m by 4 m apart in the lower catchment zone. 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
<i>Acacia xanthophloea</i>	Native	Fast growing (only in areas with raised water table)	30	None	Not applicable	Firewood, medicinal for treatment of malaria, charcoal, beekeeping
<i>Casuarina equisetifolia</i>	Exotic	Fast growing	20	Year 12 (25%) and 18 (25%)	28 years	Firewood, timber, fencing
<i>Grevillea robusta</i>	Exotic	Fast growing	40	Year 12 (25%) and 18 (25%)	28 years	Firewood, beekeeping, fodder and logs for timber.
<i>Olea africana</i>	Native	Slow growing	5	None	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as Olea has a very hard wood.
<i>Prunus africana</i>	Native	Slow growing	5	None	Not applicable	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
<i>Casuarina equisetifolia</i>	Exotic	Fast growing	20	Year 12 (25%) and 18 (25%)	28 years	Firewood, timber, fencing
<i>Cupressus lusistanica</i>	Exotic		40	Year 6 (20%), 10 (20%) and 18 (20%)	28 years	Firewood, fencing, timber – furniture
<i>Grevillea robusta</i>	Exotic	Fast growing	15	Year 12 (25%) and 18 (25%)	28 years	Firewood, beekeeping, fodder and logs for timber.
<i>Pinus patula</i>	Exotic		10	Year 6 (25%) and 12 (25%)	28 years	Firewood, fencing, timber – construction
<i>Prunus africana</i>	Native	Slow growing	5	None	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Prunus</i> has a very hard wood.
<i>Olea africana</i>	Native	Slow growing	5	None	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing as <i>Olea</i> has a very hard wood.
<i>Juniperus communis</i>	Native	Medium / slow – naturally matures in 100 years	5	None	Not applicable	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
<i>Casuarina equisetifolia</i>	Exotic	Fast growing	5	Year 12 (25%) and 18 (25%)	28 years	Firewood, timber, fencing
<i>Cupressus lusistanica</i>	Exotic	Fast growing	25	Year 6 (20%), 10 (20%) and 18 (20%)	28 years	Firewood, fencing, timber – furniture
<i>Dombeya goetzenii</i>	Native	Fast growing	10	None	Not applicable	Beekeeping, soil conservation and improved soil fertility
<i>Ficus sycomorus</i>	Native	Fast growing	5	None	Not applicable	Firewood, medicinal, timber (construction light materials)
<i>Grevillea robusta</i>	Exotic	Fast growing	10	Year 12 (25%) and 18 (25%)	28 years	Firewood, beekeeping, fodder and logs for timber
<i>Hagenia abyssinica</i>	Native	Fastest growing up to 30 m	5	None	Not applicable	Best for soil fertility, beekeeping (lots of flowers)
<i>Juniperus procera</i>	Native	Medium / slow – naturally matures in 100 years	5	None	Not applicable	Firewood, fencing
<i>Podocarpus gracilior</i>	Native	Medium growing	10	None	Not applicable	Firewood, timber - construction
<i>Olea africana</i>	Native	Slow growing	5	None	Not applicable	Firewood, improved soil fertility (due to slow break down of leaf litter), timber and fencing since as <i>Olea</i> 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 35 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. The WWF technical team have also engaged a KFS Forester to oversee seedling development at the nurseries, and 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:

Establishment phase – before planting and up to year four 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 fertilisation
11. Irrigation and watering
12. Weeding
13. Formative pruning
14. Replacement of dead trees

Management phase – years four to seven after planting

1. Tree protection
2. Ongoing 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).

SDG contributions

As described prior, three SDGs are related to the Naivasha project activities. They are: SDG 6 Clean Water and Sanitation; SDG 13 Climate Action; and SDG 15 Life on Land.

Monitoring for SDG 6 involves the measurement of net gain cover associated with the project activities and the protection of the riparian forest. This project is expected to improve the regulation of the water through strengthening the interaction between the water body and the ecosystems, represented by the reforested and protected areas of forest.

SDG 13 reflects the amount of CO₂ removed by the project activities, and the monitoring and verification required for the project.

Finally, the project improvements related to SDG 15 will be represented by the increase of the reforested areas and the growth of the forest land cover for the country – a national interest objective. More detail information is presented in B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

A.4 Scale of the project

>>The project is small scale due to the emissions reductions expected annually; <5,000 and >15,000 tonnes CO₂e per year. The farmers selected will have more than 50% of farm work done by family members, cooperative members, or neighbours.

A.5 Funding sources of project

>>The project will be initially funded by South Pole Carbon Asset Management Ltd for eight years or until 73,000 tCO₂ emission reductions is reached. It will then be sustained through the sale of carbon credits gained throughout the project lifetime. In addition, the project has received financial support from WWF Schweiz to WWF Kenya during the first years, making use of the agreements between the different WWF offices. The

detailed information of this payment can be seen in the cash flow of the project, presented in the supporting documentation. This contract agreement is presented in the supporting information.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

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

B.2. Applicability of methodology (ies)

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

An A/R project under GS is eligible where the trees are planted on land that does not meet the definition of a forest at the start of planting, and the planted areas should not have been forest for at least 10 years before the start of plantation. The eligibility analysis was performed on the methodology of interpretation and analysis of Landsat satellite imagery for coverage classification, using supervised classification in baselines 2007-2016.

The analysis was performed based on cartographic information from the Global Forest Change 2000-2016 (Hansen et al., 2013¹¹). 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 a temporal series of Landsat images that characterise 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.

¹¹ 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>.

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

Some optical satellite data collection can often be obscured by cloud cover in the humid tropics – clouds prevent the availability of ‘good’ images, sometimes for months at a time, Hansen et al. (2013). To eliminate the effect of cloud cover and shadows, the clouded areas are masked with FMask, then filled in with information with other multispectral imagery from the closest year with cloud-free data.

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. There were 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, post-processing was carried out. This consisted of changing the WGS84 geographic coordinate projection system to the flat WGS84-UTM 37S system. Then, the resulting layer (raster) was transformed to a 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.

The accuracy assessment was deemed unnecessary because the analysis was based on the Global Forest Watch (GFW) tool developed by Hansen et al. (2013)¹² and the accuracy of this tool has been already tested. The authors of the data have published two accuracy assessments to date: the first in the original Science article by Hansen et al. (2013) and the second in a recent study by Tyukavina et al. (2015)¹³ on carbon loss in forests. On a global scale, the 'loss' map used in the eligibility analysis has a 13% false-positive rate and a 12% false-negative rate. More details can be found on the web page of the tool.¹⁴

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 7, Figure 8 and Figure 9 show the eligible area 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.

¹² Hansen, M. C., Potapov, P. V., Moore, R., Hancher, M., Turubanova, S., Tyukavina, A., ... & Kommareddy, A. (2013). High-resolution global maps of 21st-century forest cover change. *science*, 342(6160), 850-853.

¹³ Tyukavina, A., Baccini, A., Hansen, M. C., Potapov, P. V., Stehman, S. V., Houghton, R. A., ... & Goetz, S. J. (2015). Aboveground carbon loss in natural and managed tropical forests from 2000 to 2012. *Environmental Research Letters*, 10(7), 074002.

¹⁴ <https://blog.globalforestwatch.org/data/how-accurate-is-accurate-enough-examining-the-glad-global-tree-cover-change-data-part-1.html>

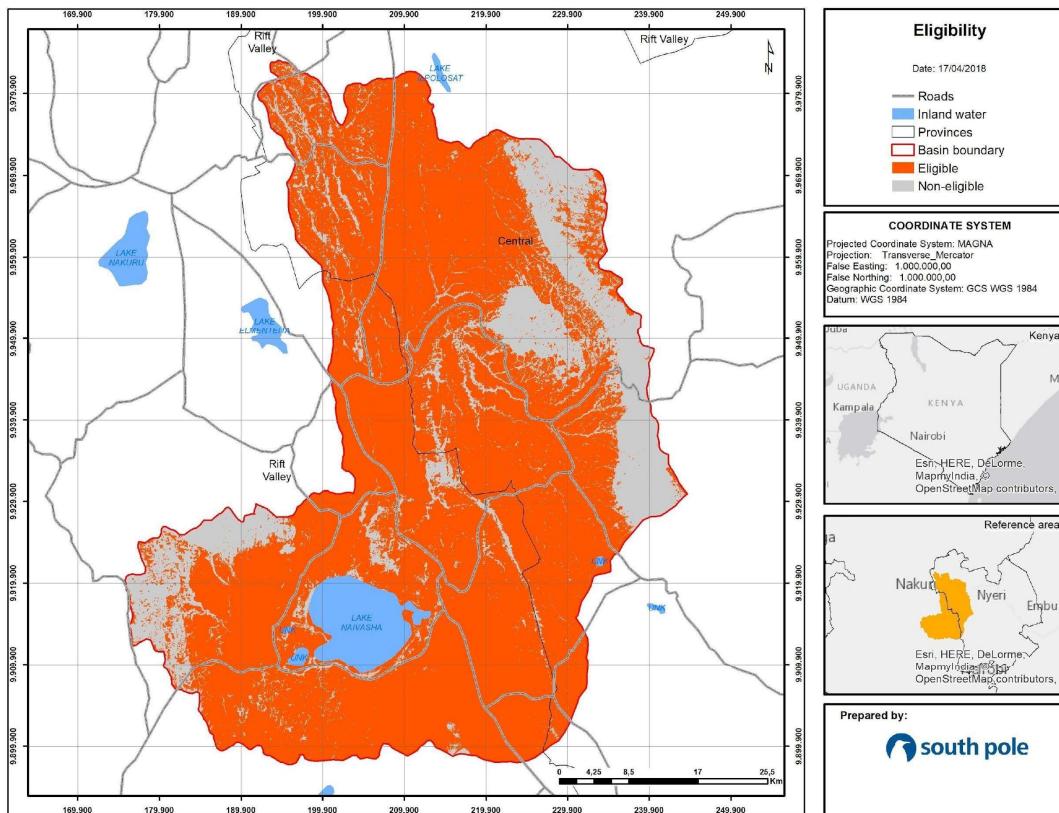


Figure 7. Eligibility map

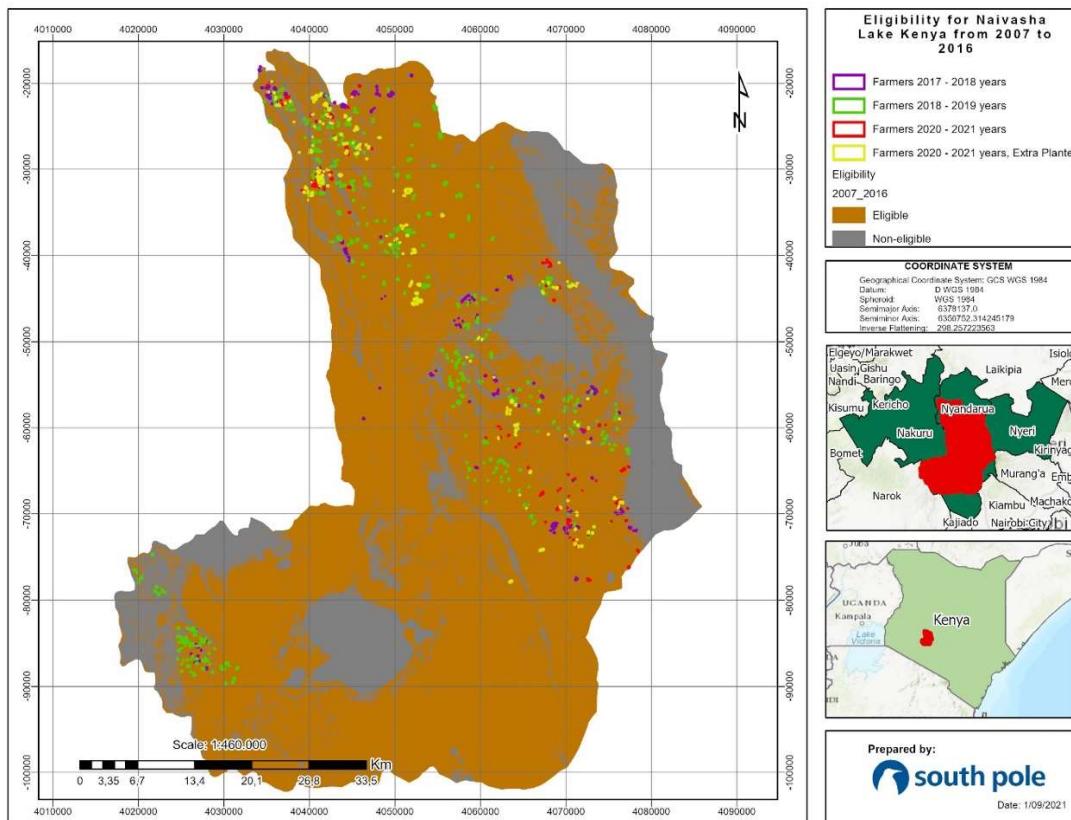


Figure 8. Eligibility map and localisation of the project areas

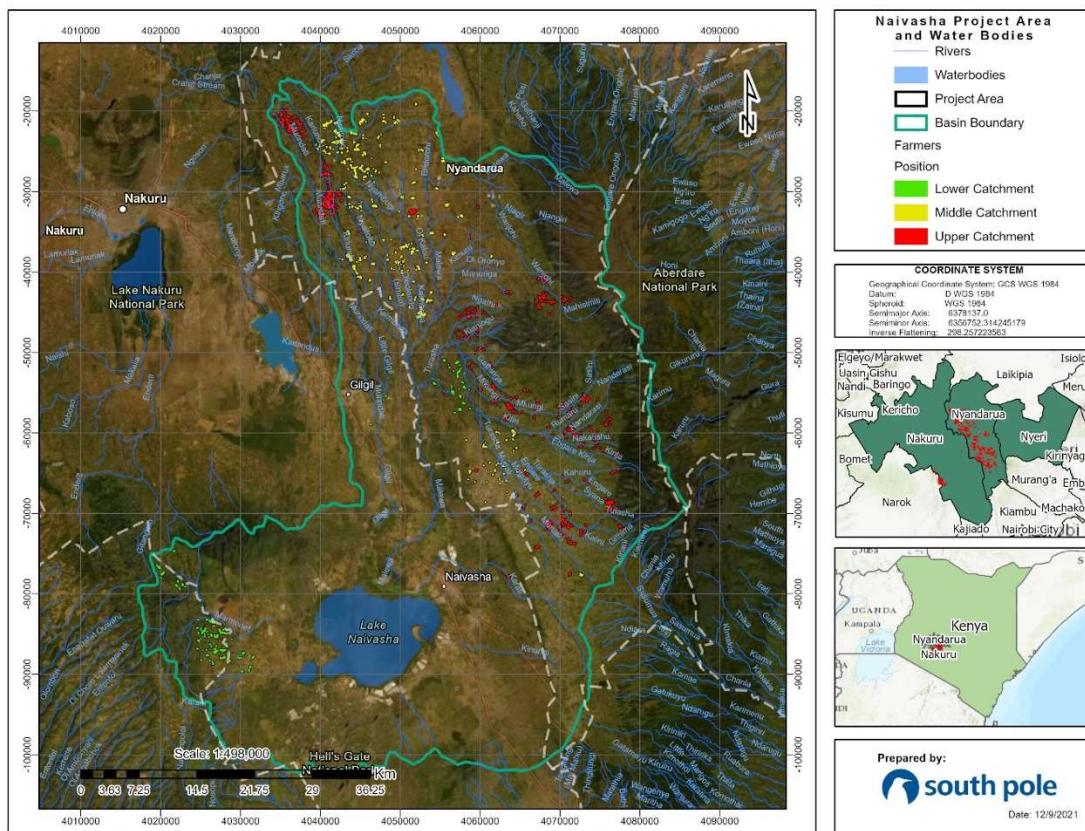


Figure 9. Localisation of the project area and water bodies¹⁵

In addition, 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. 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 conservation forests (no use of timber). Therefore, section 2.1.2 of the Land Use & Forests Activity Requirements is met.

The process of inclusion of new farmers and areas into the project must be directly through the implementation of the farmer agreements¹⁶ and the posterior eligibility analysis to asset the potentially for the possible new areas.

¹⁵ More detail is presented in Supporting documents\GIS\03_Images_OLD\Location_ProjectArea_WaterBodies

¹⁶ The agreements can be consulted in the support documentation (Supporting documents\Farmer agreements)

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 10). Wetlands of Kenya.

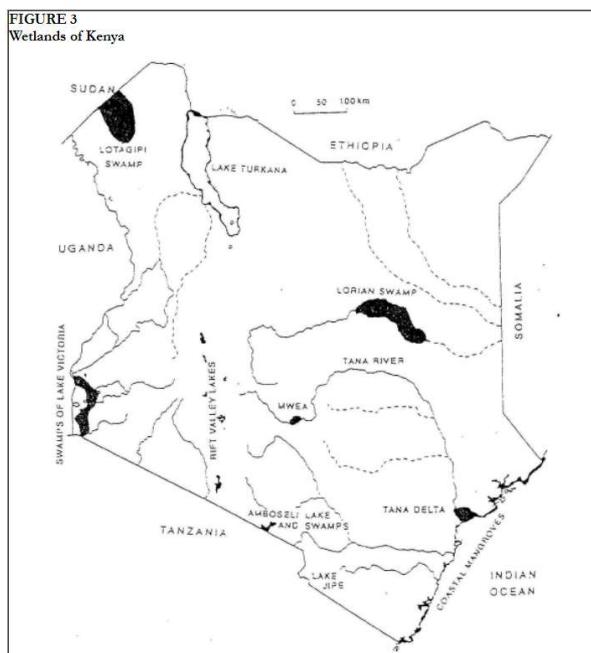


Figure 10. Wetlands of Kenya¹⁷

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 site to assist in the identification of the wetlands at the local level. Please refer to the format that was used, titled 'Wetland identification' located in the Supporting documents folder¹⁸.

¹⁷ <http://www.fao.org/docrep/003/X6611E/x6611e02a.htm>

¹⁸ File name: Wetland Identification

For this reason, the following steps are followed for the characterisation of wetlands:

- Use available Ramsar information.
 - Cross-reference with information from WWF 2016 (scale 1:350,000)
 - For the site scale, use the wetland guide designed for the project and updated according to the suggestions of GS (Wetland Identification Version 2)
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%

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. Also, the project activities do not include drainage or irrigation, therefore the applicability condition is met.

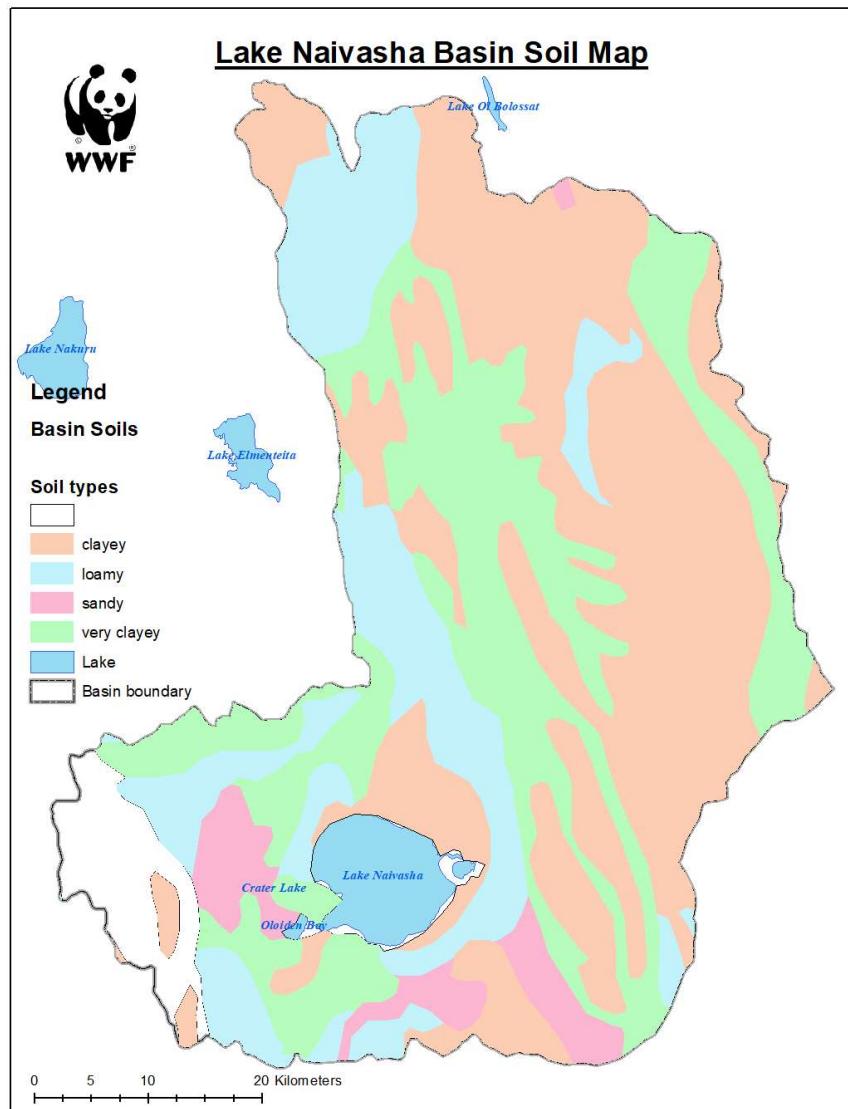


Figure 11. Lake Naivasha Basin soil types

In addition, soil disturbance will take place in less than 10% of the area submitted for certification. Given the information outlined in above, this requirement does not apply. 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.

The most plausible land use scenario in the absence of the project is the continuation of the agricultural practices, mainly the implementation of horticulture activities, as a response of the growth of the flower commerce and the importance of this practice for the local and national economic. This is the main activity on the land and has historically been the locals' main economic activity, providing a source for households. In addition,

as shown in the previous step, this scenario is only prevented by the barrier of land tenure – as mentioned before, the horticulture/floriculture business benefits from foreign investment in this area. This is presented in more detail in the Supporting documents, Additionality document.

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 in Figure 12. It is important to note that the inclusion of more farmers and new areas is expected in future years; they will represent new strata in the project.

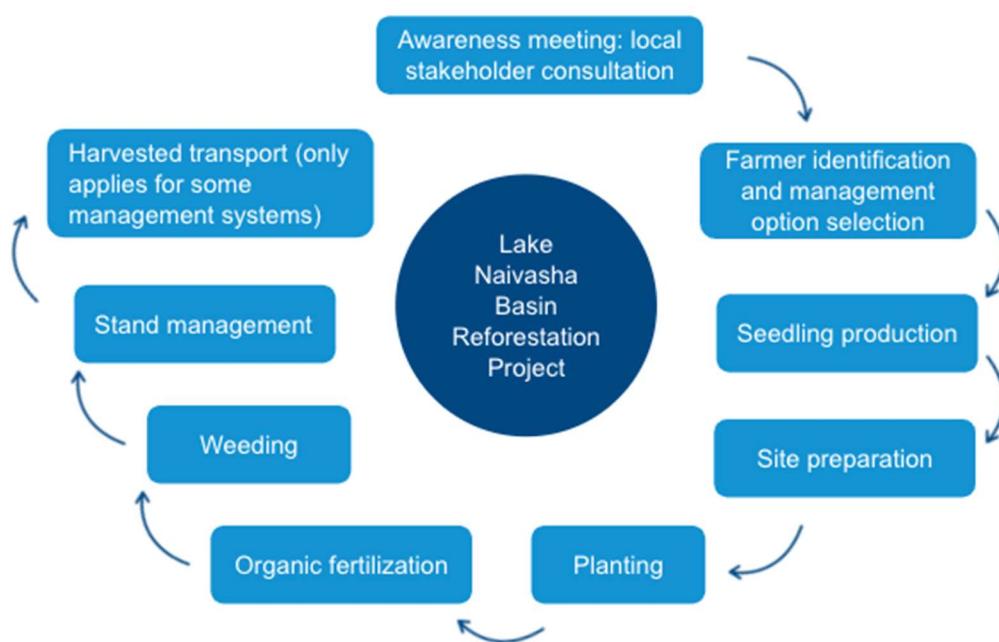


Figure 12. Flow diagram of the activities of the project

Table 12. GHG mitigation and sequestration

Source	GHGs	Included?	Justification/Explanation
Baseline scenario	Source 1	CO ₂	Yes All grass and shrubs existing in the planting area will be accounted for following the requirements for baseline carbon stocks estimation put forward by the methodology.
		CH ₄	No N/A
		N ₂ O	No N/A
	Source 2	CO ₂	Yes Belowground biomass will be included in the baseline estimations in accordance with the applied methodology.
		CH ₄	No N/A
		N ₂ O	No N/A
	Source 3: Soil	CO ₂	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 ₂ O	No Using a conservative approach, it was assumed that the baseline scenario does not include the use of fertilisers. Emissions are not expected from this activity.
Project scenario	Source 1	CO ₂	Yes During each cycle, trees will grow, sequester and stock carbon on their trunk, branches and leaves.
		CH ₄	No N/A
		N ₂ O	No N/A
	Source 2	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 ₂ O	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 ₂ O	No No fertilisation 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.

The baseline scenario was defined, and split between the mainland uses like traditional pastoralism, dairy and beef farming, flower farming operations and subsistence and smallholder farming. This last one was selected as the most plausible scenario that would keep going in the absence of the project activities, due to the traditional use for the local communities and the subsistence aspects that involve this activity. This aspect is presented in more detail in the folder: Supporting documents, Additionality document, section Step 1 for the full development of the baseline scenario.

When considering additionality, a main conclusion is that the scenario of forestry activities comes up against several constraints, principally due to the lack of tradition and the financial requirements than implied this type of activity, specially at the beginning. In addition, the establishment and management of A/R activities is not common practice, considering that the area reserved for those activities represents 1.8% of the total land cover vegetation. In addition, there is more economic competence with the traditional activities presented in the area. (More detailed information is presented in the Additionality document).

B.5. Demonstration of additionality

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

Specify the methodology, activity requirement or product requirement that establishes 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 in A/R CDM project activities, version 01
Describe how the proposed project meets the criteria for deemed additionality.	The Lake Naivasha area is a prime area for agriculture development. 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 expand by a factor of six from 1995 to 2014, being the biggest exporter country worldwide (Adeya, 2006). 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. 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 for landowners to 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.5.1 Prior Consideration

Since the project is a standalone project and does not request the inclusion of new technology/measures, there is no need for prior consideration, according to section 4.1.19 of the Principles & Requirements version 1.2.

B.5.2 Ongoing Financial Need

This section, and the investment analysis to demonstrate the additionality of the project, is not required as the additionality assessment was evaluated using the barrier analysis (see the supporting documentation). However, the sustainability of the project and the success of it, is related to the carbon bond as a funding source.

According to the financial analysis, the most important years for the project are the initial years, since there are high investment requirements in physical capital, working capital and operating costs to carry out the plantations and the implementation of sustainable production practices.

As indicated before, during the initial years the project will receive some payments from South Pole and incoming funds from WWF Schweiz. This support represents the financial motor for the starting of the planned activities in the project, particularly for the establishment of the forest and agroforest systems.

However, investment requirements are high and the risk of lack of financial resources could compromise the inclusion of new areas in the future, which would reduce the greenhouse benefits and co-benefits for the communities.

In the cash flow of the project, assuming carbon credit price changes in the range of (Swiss franc) CHF 5 - 43, the level of investment at risk of the project over the entire time horizon (35 years) is high and the financing required is over 50%. Considering the funding provided already, on average, 45% of the financing is guaranteed. To complete this requirement and after year seven, the project will get funds from the sales of carbon credits to keep the project running and to achieve a break-even point on for the project in year 10.

This outlook shows the need for additional financing and the necessity of the income from the sale of carbon credits to provide a source that would cover operating costs and guarantee its sustainability over time. It is evident that there is a need for ongoing financial resources for the implementation of the project, which alone cannot be covered, and which can be managed through the commercialisation of carbon credits and income from commercial plantations.

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

Sustainable Development Goals Targeted	Most relevant SDG Target	SDG Impact
Indicator (Proposed or SDG Indicator)		
6 (Clean Water and Sanitation):	6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Change in the extent of water-related ecosystems over time and will be measured
13 (Climate Action)	<p>13.3 Improve education, awareness-raising and human and institutional capacity for climate change mitigation, adaptation, impact reduction and early warning</p> <p>13.b 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 marginalised communities</p>	The amount of CO ₂ removed by project activities
15. Life on Land	15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Forest area as a proportion of total land area

According to the Sustainable Development Report from 2020 which describes each country's progress towards achieving the SDGs, Kenya is placed 118 in a total of 165¹⁹ countries. This represents the work that is still needed in order to improve the objective

¹⁹ <https://dashboards.sdgindex.org/profiles/kenya>

of Kenya as a country, and to achieve inclusive and multi-stakeholder development through the integration of the social, economic and environmental development spheres.

This progress is monitored using multisectoral official data, mainly from international organisations like the World Bank, OECD, WHO, FAO, ILO, UNICEF, and others. As a result, this index offers an aggregated rating, and is presented as a guideline for each country in the development sector

Although Kenya occupied a low position in the progress of the SDGs, in comparison to other countries, Kenya is included in the list of the six countries that have made enough efforts to hold global warming well below 2°C (Bhutan, Costa Rica, Ethiopia, India, Kenya, and the Philippines) (Sachs et al., 2020). This highlights the importance and relevance of continued efforts in climate action and the development of projects to reduce emissions in the country. These efforts are focused on the achievement of the Intended Nationally Determined Contributions (INDCs), and international policies and agreements like the Paris Agreement, and the 2030 Agenda for Sustainable Development

Overall, SDG 13 is the goal where Kenya has more initiatives, and a positive result has been recorded (Figure 11). SDG 13 is reported through indexes like the reduction of CO₂ emissions from fossil fuel combustion and cement production (tCO₂/capita) and the reductions of the emissions embodied in imports. Unfortunately, this positive scenario is not presented in the case of the other SDGs. For example, SDG 6 progress remains unchanged, with some problems related to the quantity of population using at least basic sanitation services. Lastly, for SDG 15, a more worrying scenario is evident, with a reduction of the protected area and an increase in the threatened status of some species registered in the Red List²⁰.

²⁰ <https://dashboards.sdgindex.org/profiles/kenya/indicators>

**Figure 13. SDG dashboards and trends (2020)**

Source: (Sustainable Development Report 2020, <https://dashboards.sdgindex.org/>)

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact
 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 the GS Methodology for Accreditation of Water Benefit Certificates (WBC), monitoring must follow the procedures for sustainable development, and the '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 clean water; also, to the maximisation 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 restored water-related areas will be monitored 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 6.6.1: Change in the extent of water-related ecosystems over time. Despite the definition provided by the Sustainable Development Goal in the Monitoring Methodology²¹, it is more relevant to specific water bodies, like rivers, lakes, canals, reservoirs, etc. It also relates to the ecosystems where these water bodies are present, because of the interactions as a functional unit. In this case, it will be measured as: the number of hectares conserved in a year X1 **minus** the hectares in conservation coverage at baseline, where X1 is the year of the verification. It means the use of the planted areas and in conservation areas as a proxy to analyse the increase of the water-related ecosystems.

The net benefit is estimated as follows: the baseline scenario of SDG 6 is accounted as zero, since without the implementation of the project activities there would not be an increase in ha of conservation inside the project area.

$$NB_{SDG6,i} = AHE_{PS,i} - AHE_{BS,i}$$

Where:

$NB_{SDG6,i}$ = Net Benefit for SDG 6 at year i

$AHE_{PS,i}$ = ha in the project scenario at year i

$AHE_{BS,i}$ = ha in the baseline scenario at year i

This analysis will be used for monitoring mountains, forests, wetlands, rivers, aquifers and lakes inside the project area, according to the indications presented for this index by the United Nations²².

This index was selected because of the influence of the land use over the regulation of the water in the ecosystems. In the project, the conversion of agricultural farmers to the implementation of agroforestry and reforestation systems will represent an increase in the forest areas and improvements in water regulation – highlighting the use of native tree species in the planting activities and the conservation of riparian forest.

²¹ <https://www.unwater.org/publications/step-step-methodology-monitoring-ecosystems-6-6-1/>

²² <https://www.sdg6monitoring.org/indicator-661/>

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 summarised below.

Calculation of CO₂ certificates

The number of CO₂ certificates is determined for every year (t) of the crediting period for each Modelling Unit using the following formula:

CO₂ certificates

$$= (CO_{2-fixation} - Baseline - Leakage - Other Emissions) * Eligible planting area$$

Baseline and leakage are deducted in year one, 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 grow those crops during the project crediting period.

The total CO₂ certificates for the project area are estimated as follows:

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

Where:

CO₂ certificates Project area, t = [tCO₂] CO₂-certificates of a project area in year t

CO₂ certificates MU,t = [tCO₂] CO₂-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 13.

Table 13. 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 ²³	No	No
Harvested wood (timber & energy wood)		Furniture, construction material, etc.	No	No	No
Litter and lying deadwood		Leaves, small fallen branches, lying dead wood	No	No	No

CO₂ fixation

Total tree biomass was estimated with the following formulas:

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

- Aboveground tree biomass

$$Aboveground\ tree\ biomass = Stem\ volume * BEF * W_d$$

$$Stem\ volume = MAI * t$$

- Belowground tree biomass

$$Belowground\ tree\ biomass = Aboveground\ tree\ biomass * (Root - to - Shoot\ ratio)$$

Where:

MAI= Mean Annual Increment in m³/ha

t= time in years

BEF= Biomass Expansion Factor (value specified in section B.6.2 Data and parameters fixed ex ante)

²³ Soil carbon was not included in this version but may be included in the final version of the PDD for the Design Certification.

W_d = Wood density in (t/m³) (value specified in B.6.2 Data and parameters fixed ex ante)

CF = Carbon Fraction (value specified in section B.6.2 Data and parameters fixed ex ante)

C to CO_2 factor= value specified in section B.6.2 Data and parameters fixed ex ante)

R =Root-to-shoot ratio (value specified in section B.6.2 Data and parameters fixed ex ante)

Baseline

The eligible area was stratified according to the land cover presented by the WWF Kenya, for the Lake Naivasha Basin (Table 14).

Table 14. 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 baseline land cover was identified for all the areas planted and included in the project. It was conducted in different ways according to the system implemented. For the woodlot system, it was implemented in grassland areas. In contrast, the agroforestry systems were developed in areas that presented annual cropland with the idea of keeping the traditional crops used by the community.

According to the AR-TOOL14 Methodological tool Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities, Version

04.2²⁴, in numeral 12, presented that "Land is subjected to periodic cycles (e.g. slash-and-burn, or clearing-regrowing cycles) so that the biomass oscillates between a minimum and a maximum value in the baseline". And in numeral 13 gives the possibility for the ex-ante estimation to assume the carbon stock of shrubs as zero in the baseline scenario.

For that reason, over the two systems implemented in the project, the baseline carbon stock was assumed as zero, as they represented areas subjected to a periodic cycle of clearing-regrowing, which is the case for the livestock farming baseline in the project area and for the annual cropland that presented a yearly rotational cycle.

Taking into account the idea presented above for the following equation, a carbon stock equivalent to zero was assumed:

$$\text{Baseline}_{\text{stock}} = \text{Area}_{\text{stratum},i} * \text{Carbon stock}_{\text{stratum},i}$$

As indicated previously, some of the project areas are still in the process of being implemented at the plantations; these will be done at the beginning of 2022. For the remaining areas (196 ha), and only for the woodlot system, a conservative baseline is including in the estimations. According to Table 5, the total woodlot area expected to be planted is 96 ha. For these areas a literature value of aboveground biomass registered for the shrubland areas will be used. According to Pellikka et al.²⁵ (2018), a conservative value of 2.6 Mg C ha⁻¹ will be used for the baseline discount for the period 2021-2022 in the ex-ante estimations²⁶.

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

²⁴ <https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf>

²⁵ Pellikka et al. (2018). Impact of land cover change on aboveground carbon stocks in Afromontane landscape in Kenya. <https://doi.org/10.1016/j.apgeog.2018.03.017>

²⁶ See supporting information "190130_ER ESTIMATIONS_Merged_JGZ_amr_using LTA GS_MPR.xlsx", tab "ER calculations"

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) fertilisers. 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. Conceptually, the indicator measures the relative presence of forest area in a country, but for this case the proportional scale of the project area will be used. Because of that this is relevant to analyse the changes in the land cover represented in the increase of the forest cover as a response of the implementation of the project activities in the eligible areas. This index is based on two components: the forest area and the total land area excluding inland waters such as rivers and lakes²⁷:

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

Where,

FAP_i = Forest Area Proportion in the project area at year i (%)

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

PA = Eligible 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 baseline scenario of SDG 15 is accounted as zero, since without the implementation of the project activities there would be no increase of the ha of conservation inside the project area. According to the information presented by the World Bank, Kenya is represented in the second lowest level range of percent for the proportion of forest area. The net benefit of this SDG is estimated as follows:

²⁷ https://un-ggim-europe.org/wp-content/uploads/2019/03/Discussion_SDG_15-1-1_Forest-area-as-a-proportion-of-total-land-area_0.pdf

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

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, as mentioned prior, without the implementation of the project activities, there would not be any new planted areas in the region. And as presented in the additionality assessment, the most probable scenario without the project is the increase of the area for horticulture systems. As a result, with the activities including the plantation schedule and the protection of natural forest, and maintenance of riparian forest, the project implementation will contribute with the improvement of this SDG.

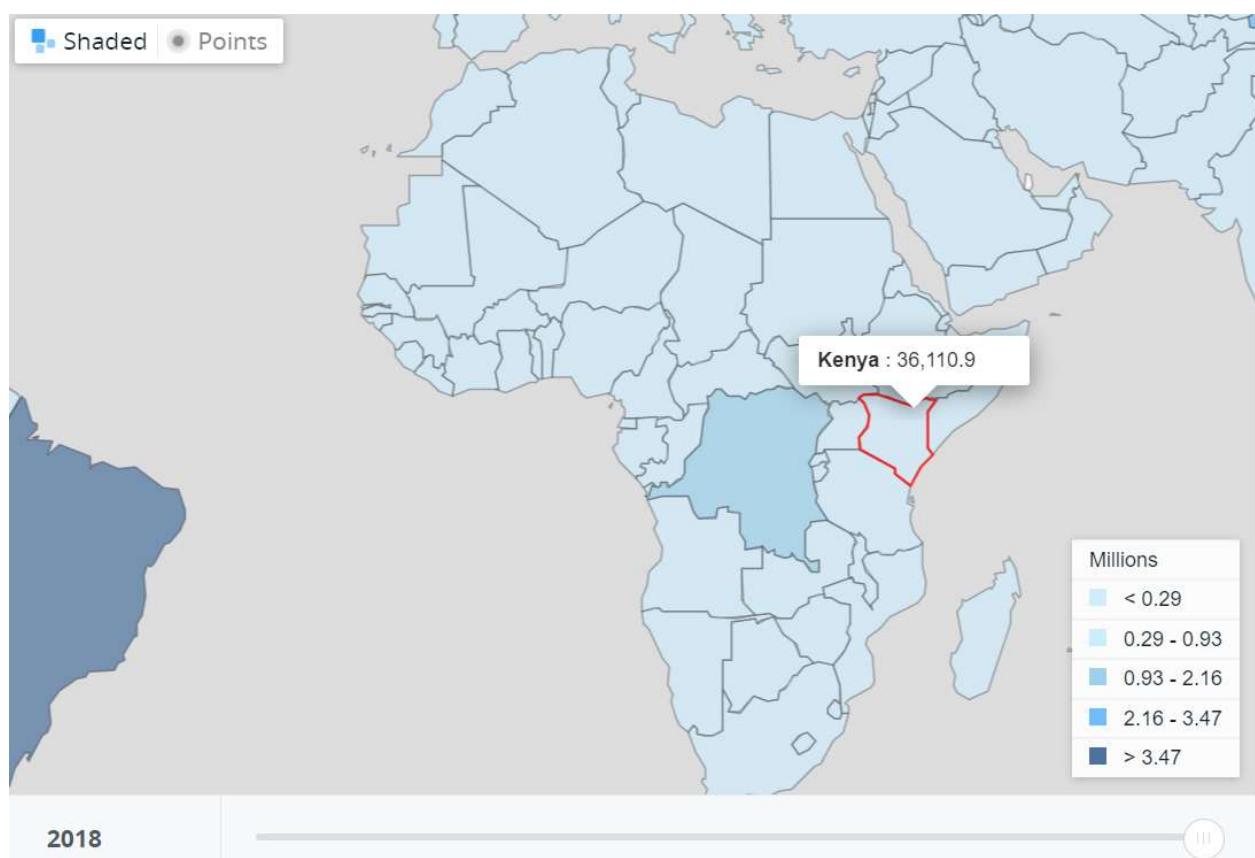


Figure 14. Forest area (sq. km) – Kenya (2018)

Source: (World Bank,
<https://data.worldbank.org/indicator/AG.LND.FRST.K2?end=2018&locations=KE&start=1990&view=map>

B.6.2 Data and parameters fixed ex ante

SDG 6

Data/parameter	AHE _{BS,i} = ha in the baseline scenario at year i
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, see Figure 2
Value(s) applied	0.0
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	According to section B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact , this parameter formed part of the index change in the extent of water-related ecosystems, and in this case it represents the hectares in conservation coverage at the time of baseline.

SDG 13

Data/parameter	Wood density
Unit	kg/m ³
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/10.5061/dryad.234 Available at: https://datadryad.org/stash/dataset/doi:10.5061/dryad.234

Value(s) applied	Depends on the species, more information is available in the ER estimation Excel document, Supporting documents
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	

Data/parameter	Biomass Expansion Factor (BEF1)
Unit	Dimensionless
Description	Ratio of aboveground oven-dry biomass to the oven-dry biomass of the stem
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	

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	

Data/parameter	Carbon fraction tC/
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	

Data/parameter	C to CO ₂ e
Unit	tCO ₂ /tC
Description	Factor applied to convert the tree carbon sequestered to tree CO ₂ e 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	

Data/parameter	Plot area
Unit	m ²
Description	Total area of the plots used for forest inventories
Source of data	PDD document
Value(s) applied	250 m ² or 500 m ² (depending on the management system used) ²⁸

²⁸ Please see the SOP in the supporting information

Choice of data or Measurement methods and procedures	Circular plots of 250 m ² will be used for collecting data on woodlot systems. Rectangular plots of 500 m ² 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

Data/parameter	Sampling error
Unit	%
Description	This refers to the estimated sampling error in the forest inventory, estimated as presented in B.7.2 Sampling plan
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 CO ₂ certificates will be done according to the GS rules

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 extensive existing literature
Purpose of data	Estimating baseline carbon emissions
Additional comment	

Data/parameter	Eligible Project Area (PA)	
Unit	ha	
Description	Eligible Project Area as per Gold Standard definition	
Source of data	GIS	
Value(s) applied	Year	Eligible Area (ha)
	2021	1,150
Choice of data or Measurement methods and procedures	See section A.1.1 Eligibility of the project under Gold Standard	
Purpose of data	Estimation of GHG Emission Reductions and Removals and Baseline emissions	
Additional comment		

Data/parameter	Strata area				
Unit	ha				
Description	Project Area per strata				
Source of data	GIS				
Value(s) applied	Strata	Planting Year	Catchment position	Management System	Potential planted area (ha)
	1	2018	Lower	Woodlot	10
	2			Agroforestry	7
	3	2019	Middle	Woodlot	15
	4			Agroforestry	32
	5		Upper	Woodlot	68
	6			Agroforestry	61
	7	2019	Lower	Woodlot	33
	8			Agroforestry	84
	9		Middle	Woodlot	112

	10		Upper	Agroforestry	66
	11			Woodlot	116
	12			Agroforestry	26
	13		Lower	Woodlot	0
	14			Agroforestry	0
	15		Middle	Woodlot	13
	16			Agroforestry	126
	17		Upper	Woodlot	39
	18			Agroforestry	145
	19		Lower	Woodlot	0
	20			Agroforestry	0
	21		Middle	Woodlot	54
	22			Agroforestry	
	23		Upper	Woodlot	42
	24			Agroforestry	100
	Total				1,150
Choice of data or Measurement methods and procedures	See section B.7.2 Sampling plan, Table 16				
Purpose of data	Estimation of GHG Emission Reductions and Removals and Baseline emissions				
Additional comment					

Data/parameter	Aboveground and belowground biomass mean annual increment
Unit	t/ha/year
Description	Mean Annual Increment
Source of data	Mean annual increment according to communication with KFS
Value(s) applied	See supporting documents folder ER calculations, in the sheet "MAI" is presented the value for each tree species
Choice of data or Measurement methods and procedures	Average value obtained through information presented by KFS.
Purpose of data	Estimation of GHG emission Reductions and Removals

Additional comment	
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SDG 15

Data/parameter	PA
Unit	ha
Description	Project Area as per Gold Standard definition
Source of data	GIS
Value(s) applied	0
Choice of data or Measurement methods and procedures	See section B.6. Sustainable Development Goals (SDG) outcomes
Purpose of data	Estimation of the Forest Area Proportion
Additional comment	

Data/parameter	$TA_{foresti}$
Unit	ha
Description	Total Area covered by forest in the project area at year i (ha)
Source of data	GIS
Value(s) applied	0
Choice of data or Measurement methods and procedures	See section A.1.1 Eligibility of the project under Gold Standard
Purpose of data	Estimation of the Forest Area Proportion
Additional comment	

Data/parameter	$FAP_{BS,i}$
Unit	ha
Description	Net benefit in the baseline, according to the Forest Area Proportion
Source of data	GIS
Value(s) applied	0

Choice of data or Measurement methods and procedures	See section A.1.1 Eligibility of the project under Gold Standard
Purpose of data	Estimation of the net benefit of the SDG 15
Additional comment	

Parameters associated with the safeguarding principles assessment

Relevant indicator	Number of persons attending awareness training related to Safety and occupational health
Data / Parameter	Number of persons
Unit	Number of persons attending to the awareness training related to Safety and occupational health
Description	Attendance list
Source of data	To be monitored at each performance certification
Value(s) applied	The awareness training would have a strategy to verify if the attendants understood the topics presented
Measurement methods and procedures	At each performance certification/validation
Monitoring frequency	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.
QA/QC procedures	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"
Purpose of data	All training must have a section in which the comprehension of the topics explained is evaluated
Additional comment	Number of persons attending awareness training related to Safety and occupational health

Relevant indicator	Farmers comply with 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/validation
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 indicator	Number of grievances received associated with access to land
Data / Parameter	Number of grievances received associated with access to land
Unit	Number
Description	<p>Number of grievances received through the Community Grievance Mechanism associated with access to land. For instance:</p> <ul style="list-style-type: none"> - Workload caused by project activities - Inequitable distribution of benefits - Loss of crops caused by project activities <p>Loss of cultivation land</p>
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	To be monitored at each performance certification/validation
QA/QC procedures	
Purpose of data	Monitoring the compliance of the safeguarding principle 3.2: Gender Equality and Women's Rights, assessment questions "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.6.3 Ex ante estimation of SDG Impact

SDG 13 was the only SDG considered for monetisation and consequent ex ante estimation. As such, CO₂ 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.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact. The detailed estimations are presented in the supporting folder ER estimations.

The ex ante of SDG 13 is calculated with Calculation of CO₂ certificates equation below.

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

Year	Eligible Area (ha)	CO ₂ -Fixation (tCO ₂ e/year)	Baseline (tCO ₂ e/year)	Other emission (tCO ₂ e/year)	CO ₂ certificates (tCO ₂ e/year)
1	193	4.646	0	0	3.717
2	437	1.317	0	0	1.053
3	323	4.150	0	0	3.320
4	196	6.626	0	0	5.301
5		6.832	-1,098	0	5.466
6		9.029	0	0	7.223

Year	Eligible Area (ha)	CO₂-Fixation (tCO₂e/year)	Baseline (tCO₂e/year)	Other emission (tCO₂e/year)	CO₂ certificates (tCO₂e/year)
7		7.930	0	0	6.344
8		7.930	0	0	6.344
9		7.930	0	0	6.344
10		7.930	0	0	6.344
11		7.930	0	0	6.344
12		7.930	0	0	6.344
13		7.930	0	0	6.344
14		7.930	0	0	6.344
15		7.930	0	0	6.344
16		7.930	0	0	6.344
17		7.930	0	0	6.344
18		7.930	0	0	6.344
19		7.930	0	0	6.344
20		7.930	0	0	6.344
21		7.930	0	0	6.344
22		7.930	0	0	6.344
23		7.930	0	0	6.344
24		7.930	0	0	6.344
25		7.930	0	0	6.344
26		7.930	0	0	6.344
27		7.930	0	0	6.344
28		7.930	0	0	6.344
29		7.930	0	0	6.344
30		7.930	0	0	6.344
31		7.930			6.344
32		7.930			6.344
33		7.930			6.344
34		7.930			6.344
35		7.930			6.344

SDGs 6 and 15 do not include any monetary transaction; the relevant areas of the project aim to contribute to the improvement of the water conditions for the basin, and the regulation of the water in the project area. And additionally, to actively involve the local community in the protection of the riparian forest, and the improvement of more sustainable economics practices. Table 1 presents a summary of the contribution and goals of the project for each SDG included in the assessment.

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 6

Although the project will not claim any certificates 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.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact).

For the indicator Change in the extent of water-related ecosystems, the baseline is 1,150 ha.

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 as we have not yet 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 15. After estimating the long-term average according to the GS methodology, a total of 210,064 tCO₂ was estimated as the total carbon reduction generated by the project.

The ex ante of SDG 13 is calculated with Calculation of CO₂ certificates equation below.

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

Table 15. SDG 13 Outcomes

Year	Baseline estimate (tCO ₂)	Project estimate (tCO ₂ /year)	Net benefit ²⁹ (tCO ₂)
Year 1	0	4.646	3.717
Year 2	0	1.317	1.053
Year 3	0	4.150	3.320
Year 4	0	6.626	5.301
Year 5	-1,098	6.832	5.466
Year 6	0	9.029	7.223
Year 7	0	7.930	6.344
Year 8	0	7.930	6.344
Year 9	0	7.930	6.344
Year 10	0	7.930	6.344
Year 11	0	7.930	6.344
Year 12	0	7.930	6.344
Year 13	0	7.930	6.344
Year 14	0	7.930	6.344

²⁹ For details about these estimations see the supporting folder ER calculations.

Year	Baseline estimate (tCO₂)	Project estimate (tCO₂/year)	Net benefit²⁹ (tCO₂)
Year 15	0	7.930	6.344
Year 16	0	7.930	6.344
Year 17	0	7.930	6.344
Year 18	0	7.930	6.344
Year 19	0	7.930	6.344
Year 20	0	7.930	6.344
Year 21	0	7.930	6.344
Year 22	0	7.930	6.344
Year 23	0	7.930	6.344
Year 24	0	7.930	6.344
Year 25	0	7.930	6.344
Year 26	0	7.930	6.344
Year 27	0	7.930	6.344
Year 28	0	7.930	6.344
Year 29	0	7.930	6.344
Year 30	0	7.930	6.344
Year 31	0	7.930	6.344
Year 32	0	7.930	6.344
Year 33	0	7.930	6.344
Year 34	0	7.930	6.344
Year 35	0	7.930	6.344
Total	-	-	210,064
Total number of crediting years	35		
Annual average over the crediting period			6,002

SDG 15

Although the project will not claim any certificates 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.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact). 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 area can only include non-forest land.

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

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 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 the 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.

SDG 6: Clean Water and Sanitation

Data / Parameter	$AHE_{PS,i}$ = ha in the project scenario at year i
Unit	Hectares
Description	Hectares in conservation (protection and rehabilitation) compared with baseline cover
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	For every Performance Certification

QA/QC procedures	See section B.7.3 Other elements of monitoring plan. In addition to this, for every monitoring the project area database will be reviewed.
Purpose of data	To monitor the expansion of the project and to estimate GHG emission reductions and removals
Additional comment	

SDG 13: Climate Action

Data / Parameter	Diameter at breast height (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	To be estimated at each performance certification
Measurement methods and procedures	The DBH will be measured using a measuring tape in each forest inventory plot
Monitoring frequency	Every Performance Certification
QA/QC procedures	See section B.7.3 Other elements of monitoring plan
Purpose of data	To use the information for carbon estimations
Additional comment	

Data / Parameter	Total height (Ht)
Unit	m
Description	Is measured in temporal sample plots, see Chapter 5.3 of this PDD for elaboration.
Source of data	Measured by the project proponent - Forest inventory
Value(s) applied	To be estimated at each performance certification
Measurement methods and procedures	The Ht will be measured using a measuring tape in each forest inventory plot
Monitoring frequency	Every Performance Certification
QA/QC procedures	See section B.7.3 Other elements of monitoring plan
Purpose of data	To assess the emission reduction potential of the project by capturing carbon through the establishment of forest plantations

Additional comment																							
Data / Parameter	Volume																						
Unit	m ³																						
Description	Volume per tree species																						
	<p>It will use the measurements from the project proponent - Forest inventory</p> <table border="1"> <thead> <tr> <th>Species</th><th>Equation source</th></tr> </thead> <tbody> <tr> <td><i>Acacia xanthophloea</i></td><td>$AGB=\exp(-1.59) * D2.19$ https://core.ac.uk/download/pdf/288800043.pdf</td></tr> <tr> <td><i>Podocarpus gracilior</i></td><td>$\ln(AGB)=\ln(a)+b\ln(DBH)$ https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=118&doi=10.11648/j.ajls.20150303.20</td></tr> <tr> <td><i>Ficus ingens</i></td><td>$AGB=\exp(-1.996 + 2.32 * \ln(D))$ https://core.ac.uk/download/pdf/288800043.pdf</td></tr> <tr> <td><i>Pinus patula</i></td><td>$Volume=-0.00041 - 0.00005711 * (DBH) + 0.0001352 * ((DBH) * (H)) + 0.00003313 * ((DBH) * (H))$ http://www.globallometree.org/data/allometric-equations/40551/</td></tr> <tr> <td><i>Casuarina equisetifolia</i></td><td>$Biomass=0.062 * (DBH)^{1.974} * (H)^{0.596}$ http://www.globallometree.org/data/allometric-equations/39132/</td></tr> <tr> <td><i>Grevillea robusta</i></td><td>$AGB=1.384 * D1.665$ https://core.ac.uk/download/pdf/288800043.pdf</td></tr> <tr> <td><i>Hagenia abyssinica</i></td><td>$\ln(AGB)=a+\ln(D2 Hq)$ https://link.springer.com/article/10.1007%2Fs00442-005-0100-x **</td></tr> <tr> <td><i>Cupressus lusitanica</i></td><td>$AGB=\exp(-1.996 + 2.32 * \ln(D))$ https://core.ac.uk/download/pdf/288800043.pdf</td></tr> <tr> <td><i>Dombeya goetzenii</i></td><td>$\ln(AGB)=a+\ln(D2 Hq)$ https://link.springer.com/article/10.1007%2Fs00442-005-0100-x **</td></tr> <tr> <td><i>Mangifera indica</i></td><td>$AGB=\exp(-1.996 + 2.32 * \ln(D))$ https://core.ac.uk/download/pdf/288800043.pdf</td></tr> </tbody> </table>	Species	Equation source	<i>Acacia xanthophloea</i>	$AGB=\exp(-1.59) * D2.19$ https://core.ac.uk/download/pdf/288800043.pdf	<i>Podocarpus gracilior</i>	$\ln(AGB)=\ln(a)+b\ln(DBH)$ https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=118&doi=10.11648/j.ajls.20150303.20	<i>Ficus ingens</i>	$AGB=\exp(-1.996 + 2.32 * \ln(D))$ https://core.ac.uk/download/pdf/288800043.pdf	<i>Pinus patula</i>	$Volume=-0.00041 - 0.00005711 * (DBH) + 0.0001352 * ((DBH) * (H)) + 0.00003313 * ((DBH) * (H))$ http://www.globallometree.org/data/allometric-equations/40551/	<i>Casuarina equisetifolia</i>	$Biomass=0.062 * (DBH)^{1.974} * (H)^{0.596}$ http://www.globallometree.org/data/allometric-equations/39132/	<i>Grevillea robusta</i>	$AGB=1.384 * D1.665$ https://core.ac.uk/download/pdf/288800043.pdf	<i>Hagenia abyssinica</i>	$\ln(AGB)=a+\ln(D2 Hq)$ https://link.springer.com/article/10.1007%2Fs00442-005-0100-x **	<i>Cupressus lusitanica</i>	$AGB=\exp(-1.996 + 2.32 * \ln(D))$ https://core.ac.uk/download/pdf/288800043.pdf	<i>Dombeya goetzenii</i>	$\ln(AGB)=a+\ln(D2 Hq)$ https://link.springer.com/article/10.1007%2Fs00442-005-0100-x **	<i>Mangifera indica</i>	$AGB=\exp(-1.996 + 2.32 * \ln(D))$ https://core.ac.uk/download/pdf/288800043.pdf
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Source of data																							

	<i>Juniperus sp</i>	$\text{Ln(ABG)} = \text{ln}(a) + b\text{ln(DBH)}$ https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=118&doi=10.11648/j.ajls.20150303.20
	<i>Olea sp</i>	$\text{AGBest} = 1.089 * (\text{DBH})^{1.684}$ https://www.tandfonline.com/doi/pdf/10.1080/20964129.2018.1433951?needAccess=true
	<i>Prunus africana</i>	$\text{In(AGB)} = a + \text{ln}(\text{D2 Hq})$ https://link.springer.com/article/10.1007%2Fs00442-005-0100-x **
	<i>Persea americana</i>	$\text{AGB} = \exp(-1.996 + 2.32 * \text{LN(D)})$ https://core.ac.uk/download/pdf/288800043.pdf
		** for these species a non-specific allometric equation was presented, so the models presented by Chaves et al. (2012) were used for the Moist forest type.
		The documentation is presented in Supporting documents\ER calculations\allometric equation (ex-post)
Value(s) applied	To be estimated at each performance certification	
Measurement methods and procedures	Allometric equations will be used to assess the volume for each species planted in the project. These equations are applicable for Kenya for the climate region where Lake Naivasha is located, and are based on the measurement of the diameter at breast height and the total height.	
Monitoring frequency	Every Performance Certification	
QA/QC procedures	See section B.7.3 Other elements of monitoring plan	
Purpose of data	To assess the emission reduction potential of the project by capturing carbon through the establishment of forest plantations	
Additional comment		

Data / Parameter	Number of pest and disease events
Unit	Number of events
Description	It is recorded by each farmer included in the project.

	The possible pest and disease events will be reported to the lead of each WRUA and then to the WWF and the KFS, to the objective of implement control actions in the areas affected
Source of data	Registered and reported by the project proponent - Farmers
Value(s) applied	To be a compiled report at each performance certification
Measurement methods and procedures	The possible outbreak of any pest or disease will be monitored by field observation undertaken by each farmer, and then reported to WWF Kenya
Monitoring frequency	Compiled report for every Performance Certification
QA/QC procedures	N/A
Purpose of data	To assess the possible natural events that could affect the growth of the plantation, and which could reduce the emissions reduction potential of the project
Additional comment	To date, any instances have been reported to the internal systems of WWF Kenya

Data / Parameter	Number of fire events
Unit	Number of events
Description	<p>It is recorded the date and localization by each farmer included in the project.</p> <p>The possible fire event will be reported to the lead of each WRUA and then to the WWF and the KFS, to the objective of implement control actions in the areas affected. In addition, the farmer will follow the recommendations presented in the training and meetings developed by WWF Kenya.</p>
Source of data	Registered and reported by the project proponent - Farmers
Value(s) applied	To be a compiled report at each performance certification
Measurement methods and procedures	The possible fire events will be monitored by field observations undertaken by each farmer, and then reported to WWF. It should be recorded the date, localisation and systems affected.
Monitoring frequency	Compiled report for every Performance Certification

QA/QC procedures	N/A
Purpose of data	To assess the possible fire events that could affect the growth of the plantation, and that could reduce the emissions reduction potential of the project
Additional comment	To date, any instances have been reported to the internal systems of WWF Kenya

Data / Parameter	Area affected by fire events
Unit	Area (ha)
Description	The monitoring of the affected area by any fire event will be done using the register of the fires even by each farmer. With the date of each potential fire, a GIS assessment will be done using Landsat images closest to the record date of the event to estimate the Difference of Normalized Burn Ratio, which give the area affected by fire and the severity of the event.
Source of data	Registered and reported by the project proponent – Farmers. Landsat images
Value(s) applied	To be a compiled report at each performance certification
Measurement methods and procedures	The possible fire events will be monitored by field observations undertaken by each farmer, and then reported to WWF and the use of Landsat images and GIS processing
Monitoring frequency	Compiled report for every Performance Certification
QA/QC procedures	N/A
Purpose of data	To assess the possible area affected by fire events and that could reduce the emissions reduction potential of the project
Additional comment	To date, any instances have been reported to the internal systems of WWF Kenya. The minimum area that could detected using Landsat images would be 0.8 ha. The minimum area detected using Landsat images would be 0.8 ha. So, for small areas burning will be recorded with the field information from each farmer

Data / Parameter	Area affected by pest and disease events
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Unit	Area (ha)
Description	The monitoring of the affected area by any pest will be done using the register of the pest even by each farmer. The area affected will be recorded with the field information from each farmer
Source of data	Registered and reported by the project proponent – Farmers.
Value(s) applied	To be a compiled report at each performance certification
Measurement methods and procedures	The possible pest events will be monitored by field observations undertaken by each farmer
Monitoring frequency	Compiled report for every Performance Certification
QA/QC procedures	N/A
Purpose of data	To assess the possible area affected by pest events and that could reduce the emissions reduction potential of the project
Additional comment	To date, any instances have been reported to the internal systems of WWF Kenya.

SDG 15: Life on Land

Data / Parameter	PA
Unit	ha
Description	Project area
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 monitoring plan. In addition to this, for every monitoring the project area database will be reviewed.
Purpose of data	To monitor the expansion of the project and to estimate GHG emission reductions and removals
Additional comment	

Data / Parameter	TA_{forest_i}
Unit	ha
Description	Total Area covered by forest in the project area at year i (ha)
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 monitoring plan. 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	

Parameters associated with the safeguarding principles assessment

Data / Parameter	Number of people attending the meetings
Unit	Number of people
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	Measurement methods are not necessary. The procedure consists of constructing a database of Number of people from the local community attending awareness sessions
Monitoring frequency	Annually
QA/QC procedures	See section B.7.3 Other elements of monitoring plan
Purpose of data	To record the number of people attending these sessions
Additional comment	

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/validation
QA/QC procedures	See section B.7.3 Other elements of monitoring plan. In addition to this, for every monitoring the project area database will be reviewed.
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	

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 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/validation
QA/QC procedures	See section B.7.3 Other elements of monitoring plan. In addition to this, for every monitoring the project area database will be reviewed.
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	

B.7.2 Sampling plan

SDG 6

Indicator	Sampling plan
6.6.1 Change in the extent of water-related ecosystems	<p>This index, as was expressed in section B.6. Sustainable Development Goals (SDG) outcomes, will be monitored as the number of hectares conserved in a year X1 minus the Hectares in conservation coverage at baseline, where X1 is the year of the verification</p> <p>So, in the sampling plan will be include all the polygons of the planted areas and 10% of conservation areas until the verification year.</p>

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 16).

Table 16. Modelling Units

MU	Planting year	Catchment position	Management system	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

MU	Planting year	Catchment position	Management system	Area (ha)
8	2020	Middle	Agroforestry	88
9			Woodlot	94
10			Agroforestry	67
11		Upper	Woodlot	140
12			Agroforestry	28
13		Lower	Woodlot	0
14			Agroforestry	0
15		Middle	Woodlot	5
16			Agroforestry	27
17		Upper	Woodlot	31
18			Agroforestry	54
19	2021	Lower	Woodlot	51
20			Agroforestry	79
21		Middle	Woodlot	51
22			Agroforestry	79
23		Upper	Woodlot	51
24			Agroforestry	79
Total				1,150

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 needs 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 m² 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 equation³⁰:

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

Where:

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.

N_h = 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

S_h = Standard deviation of stratum h.

The maximum allowable error according to the Gold Standard is 20%. If a greater error is obtained, a discount will be made in the total carbon credits generated by the project

³⁰ 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.

according to the established in the Gold Standard Afforestation/Reforestation (A/R) GHG Emissions Reduction & Sequestration Methodology.

Standard operation procedure (SOP)

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. 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 SOP³¹ 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 metres (closer than 10 m distance) then the compass and measuring tape could be used for the last few metres instead. 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

³¹ Please see the SOP in the supporting information

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 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.

Data collection in the plot

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.

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 within the limits of the plot. Data collected includes 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.

i) 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 15).

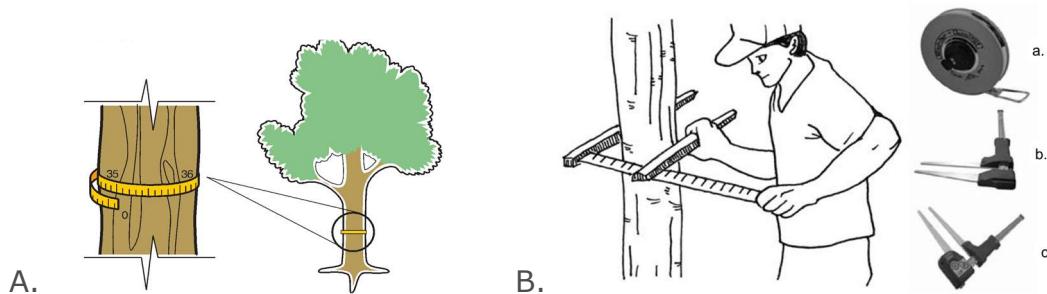


Figure 15. Illustration of diameter measurement methods (A. diameter tap, B. manual clipper) and possible measurement devices: a. diameter tap, b. and c. manual and digital callipers

Source: (Yepes et al., 2011)

Some precautionary measures must be taken into account (Figure 16):

- 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, the 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 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, wounds, hollows, branches, etc.), are to be measured just above the irregular point, where the irregular shape does not affect the stem.

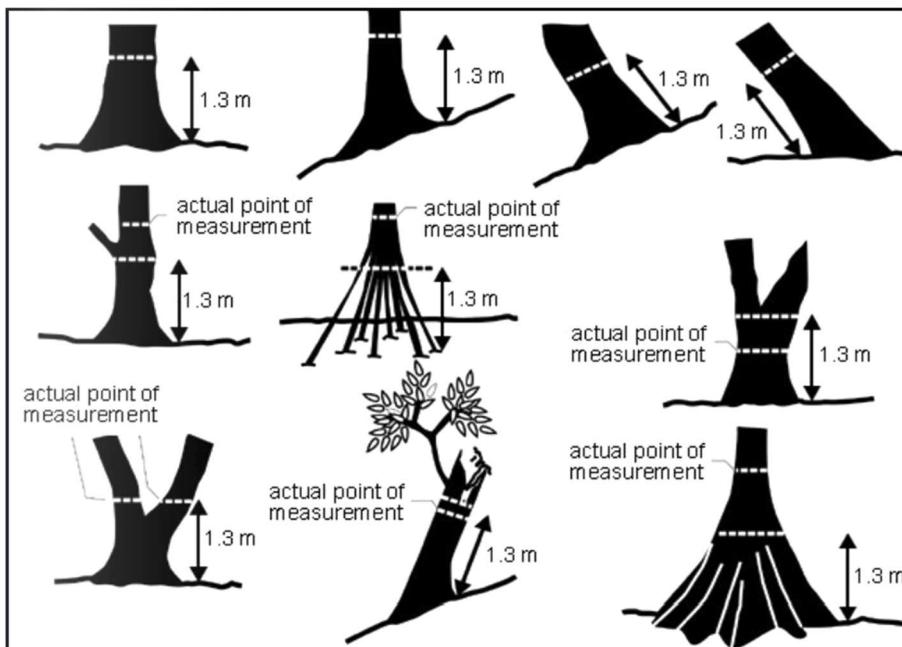


Figure 16. Correct ways for diameter measurement at breast height

ii) Recording the data

The field data collected will be done using ODK³² 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.

³² 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/>

iii) Monitoring intervals and frequency

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

iv) 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.

SDG 15

No sampling plan is required for the SGD 15 and the parameters included in section B.7.1

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 timeframes 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 organise, 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 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.

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 with a simple relation between the two measurements to detect any outliers in the data. Any errors found will be corrected and recorded. The variation in the data will be calculated and reported using the following equation:

$$\text{Data difference} = \frac{\text{Estimate1} - \text{Estimate2}}{\text{Estimate2}}$$

The proper entry of data into the data analysis 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 judgement 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 Table 17.

Table 17. 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

QC activity	Procedures
	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	<p>At each design certification check that:</p> <ul style="list-style-type: none"> 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	<p>At each field data collection:</p> <ul style="list-style-type: none"> Confirm that the appropriate data processing steps are correctly used in the database Confirm that data relationships are correctly represented in the database 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	<p>At each design certification check that:</p> <ul style="list-style-type: none"> 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	<p>At each design certification check:</p> <ul style="list-style-type: none"> That the individuals providing expert judgement for uncertainty estimates are suitably qualified Qualifications, assumptions and expert judgements are recorded. Check that calculated uncertainties are complete and calculated correctly
Undertake review of internal documentation	At each field data collection check that:

QC activity	Procedures
	<ul style="list-style-type: none"> • 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	<p>At each field data collection check that:</p> <p>Check for temporal consistency in time series input data for each category of sources and sinks</p> <p>Check for consistency in the algorithm and method used for calculations throughout the time series</p>
Undertake completeness checks	<p>At each design certification:</p> <ul style="list-style-type: none"> • 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	<p>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.</p>

>> 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-CO₂ GHG emissions resulting from (forest) fires 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-CO₂ 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 April 28, 2018.

C.1.2 Expected operational lifetime of project

>> The expected operational lifetime is 35 years, which includes five years for the plantation's activities and a rotational cycle of 28 years for the species with the longest single cycle (A.3 Technologies and/or measures).

C.2. Crediting period of project

C.2.1 Start date of crediting period

>> 28/04/2018

C.2.2 Total length of crediting period

>> The total length of crediting period is 35 years, ending on April 27, 2052.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in [Appendix 1](#); ongoing monitoring is summarised below.

Principles	Mitigation Measures added to the Monitoring Plan
9.1 Landscape Modification and Soil	Farmers with sufficient land will establish woodlots while those with less land will use agroforestry systems to combine tree planting with crop production. This is presented in each farmer's agreement, where all the systems objectives to be implemented in the area are detailed.
9.6 Pesticides & Fertilisers	To avoid any outbreak that could compromise the development of the project, the plantation will be monitored by each farmer, following the direction and training sessions from WWF Kenya and the KFS about the pest and diseases.

Principles	Mitigation Measures added to the Monitoring Plan
9.7 Harvesting of Forests	Section B.7.1 presented a paragraph called “Number of pest and disease events”, with the objective of registering and reporting possible pest and disease events to the lead of each WRUA, and then to the WWF and the KFS, to implement control actions in the areas affected.
9.11 Endangered Species	The project includes the plantation of some of these endangered species, and their monitoring will be aligned with the plantation monitoring itself.

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	<p>The project has a gender approach that seeks to ensure women's rights and those of socially vulnerable groups. WWF Kenya promotes women's participation in the different project activities like plantation establishment. The project will continuously work in women's inclusion in all project activities, thereby guaranteeing their rights. Both men and women work on the Project on 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.</p> <p>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</p>
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<p>Question 2 - Explain how the project aligns with existing country policies, strategies and best practices</p>	<p>The Project respects and embraces the national gender strategy. 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 programmes 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</p> <p>In addition, WWF has been responsible for accomplishing all the requirements of the Gold Standard gender equality, participation of local actors and mitigation measures for the monitoring plan.³³</p>
<p>Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?</p>	<p>There is no need for an expert for the Gender and Safeguarding Principles & Requirements because the project complies with the Gender Equality and Human Rights. Safeguarding Principles & Requirement version 1.2 was followed to address all questions presented in Principle 1 Human Rights and Principle 2 Gender Equality. The safeguarding assessment was consolidated and presented in the Appendix. The justification and mitigation were suggested by the communities. The responses were recorded as 'Yes', 'Potentially' or 'No', depending on the assessment question.</p>

³³ See Supporting documents\Health and safety protocol

Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?

The Gold Standard Stakeholder Consultation & Engagement Procedure, Requirements & Guidelines was consulted and applied during the different stages of the local stakeholder consultation; preparation, invitation, meeting, feedback round.

In addition, an external gender expert was not required during the Stakeholder consultations, because all the WWF Kenya staff have knowledge and experience in this topic, and they must implement the Human Resources Policies and Procedures Manual from WWF. This manual presented the vision of the organization which is to ensure a healthy natural environment supporting people and growth in Kenya and this manual has as one of its main policies to ensure gender equality and avoid any acts of discrimination inside the organization or the initiatives or projects developed by its staff.

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

The below is a summary of the 2-step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

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 (Kikuyu, 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.

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.

On this consultation, additional comments were raised by the community. The supporting information³⁴ is presented with more detail on all these comments and the justification for them being taken (or not) into account.

Of all of them, only one required involves mitigation measures. It is related to tree mortality, the potential risk of *Cupressus lusitanica* infested by aphids, and the affection on the project plantations.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
Continuous Input / Grievance Expression Process Book (mandatory)	A comment box has been set up in each of the seven WRUA including in the project. However, the grievance process could also be communicated through a phone call from each

³⁴ Supporting documents/Stakeholder consultation

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
	farmer to the coordinator designated by the community. This lead has the role to inform the WRUA offices, where the report is registered on a commentary book. After that if the concern is still unsolved, the process will be escalated to WWF Kenya.
GS Contact (mandatory)	help@goldstandard.org
Internet/email (optional)	Website: https://www.wwfkenya.org/ Email: Samuel Okuku <sokuku@wwfkenya.org> Caroline Njiru <cnjiru@wwfkenya.org>, William O. Ojwang <wojwang@wwfkenya.org>
Nominated independent mediator (optional)	Chief: The chief is the head of the community

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into SECTION D above. Please refer to the instructions in the [Guide to Completing](#) this form.

Assessment Questions / Requirements	Justification of Relevance (yes / potentially / no)	How Project will achieve Requirements through design, management or risk mitigation	Mitigation Measures added to the Monitoring Plan (if required)
Principle 1. Human Rights			
<p>1. 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</p> <p>2. The Project shall not discriminate with regards to participation and inclusion</p>	No	<p>The project is in compliance with all the statements in the Universal Declaration of Human Rights.</p> <p>The WWF social and policies principles consider respect for human rights in accordance with customary, national and international human rights laws.</p> <p>WWF recognises human rights as central to achieving effective and equitable conservation and development outcomes.</p> <p>The WWF social politics and principles prove its ongoing commitment to equity, integrating a</p>	

		gender perspective in its projects with no discrimination.	
Principle 2. Gender Equality			
<p>1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women</p> <p>2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work</p> <p>3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks</p> <p>4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)</p>	Potentially	<p>First requirement</p> <ul style="list-style-type: none"> • The project is designed to benefit households – including both genders – through sustainable Natural Resource Management. • Women are very active members of the community and most of the labour comes from women, ranging 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. • 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, 	

		<p>women, and children according to their skills and time availability.</p> <ul style="list-style-type: none"> 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 recognise 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. <p>Second requirement</p> <ul style="list-style-type: none"> It is important to recognise that the activities of the project are mainly performed by the community. Both men and women work on the project on 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 	
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		<p>Plan and the Occupational Safety and Health Protocol.</p> <ul style="list-style-type: none">• 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.• 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 take 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	
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		<p>guaranteed the inclusion of both genders.</p> <p>Third requirement</p> <ul style="list-style-type: none">• 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.• The project respects and embraces the national gender strategy. WWF adopts a more respectful and inclusive way of managing women's opinions and participation, in order to benefit all employees, not only to	
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		<p>women. The programmes 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.</p> <ul style="list-style-type: none">• WWF considers 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.	
Principle 3. Community Health, Safety and Working Conditions			

<p>1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community</p>	<p>Potential</p>	<p>The project activities like pruning, thinning and harvest could put people in the community at risk.</p> <p>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.</p>	
<p>Principle 4.1 Sites of Cultural and Historical Heritage</p>			
<p>Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?</p>	<p>No</p>	<p>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.</p>	
<p>>>The Project shall not involve or be complicit in the alteration, damage or removal of any sites, objects or structures of significant cultural heritage.</p>		<p>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</p>	

		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.	
>>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 consequences of the activity.		The project will not utilise Cultural Heritage Sites for project activities.	
>>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.	
>>The opinions and recommendations of an Expert Stakeholder shall be sought and		The project areas do not include areas of cultural knowledge, therefore no issues regarding it occur in the project area.	

demonstrated as being included in the Project design			
Principle 4.2 Forced Eviction and Displacement			
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.	
>>The Project shall not involve and shall not be complicit in the involuntary relocation of people		The participating farmers are landowners. They have title deeds and/or allotment letters and therefore no involuntary relocation of people will occur.	
>>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		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.	

Standard 5: Displacement and Resettlement requirements for further details in this regard.			
>>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.	
Principle 4.3 Land Tenure and Other Rights			
Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership?	No	Landowners will join the project on a voluntary basis depending on their interests in the project	
>>For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership?		Only landowners with title deeds allotment letters will participate in the exercise especially because it is a long-term project. As the project starts, the rightful owner of the land (with the title deed) should give the permission to participate in the project	

		<p>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 agreement on who owns the project.</p>	
<p>>>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:</p> <ul style="list-style-type: none"> a) Legal rights, or b) Customary rights, or c) Special cultural, ecological, economic, religious or spiritual significance of people shall be demonstrably promoted/protected. 		<p>The Project respects both the customs and traditions of the communities.</p> <p>In addition, 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.</p>	
<p>>>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 must be resolved prior to Project</p>		<p>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</p>	

<p>being carried out in such areas. All such changes must be demonstrated as having been agreed with free, prior and informed consent.</p>		<p>have the corresponding title deeds or allotment letters.</p>	
<p>>>The Project Developer must hold uncontested land title for the entire Project Boundary to complete Project Design Certification.</p>		<p>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).</p>	
<p>>>The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design.</p>		<p>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.</p>	
<p>Principle 4.4 Indigenous people</p>			

Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	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.	
>>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.	
>>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.	
>>The Project Developer shall respect, protect, conserve and shall not take the cultural,		Customary owned land is respected by the project. The landowners sign	

intellectual, religious and spiritual property of indigenous peoples without their free, prior and informed consent		participation agreements in the project voluntarily.	
>> 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 favour and be used by all family members.	
>> The opinions and recommendations of an Expert Stakeholder(s) shall be sought and demonstrated as being included in the project design		Expert stakeholder opinions from the WWF Kenya and the South Pole team were taken into account for the project design.	
Principle 5 Corruption			
1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	"WWF International has a zero-tolerance principle to fraud and corruption. As an organisation that condemns and fights corruption as one of the key drivers of poverty, environmental degradation and bad	

		<p>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 support documentation Risk and Assessment/ WWF policy).</p> <p>Additionally, the entire project was informed by Free Prior and Informed Concept and all the participants agree that the process was transparent.</p>	
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions	No	<ul style="list-style-type: none"> • None of the landowners 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. 	

<p>2. Workers shall be able to establish and join labour organisations</p> <p>3. Working agreements with all individual workers shall be documented and implemented and include:</p> <ul style="list-style-type: none"> a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 		<ul style="list-style-type: none"> • In addition, all the employees working for the project participant institutions are working under conditions in compliance with the ILO fundamental conventions. • None of the landowners 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 organisations. • 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 	
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<p>days per year, not including sick and casual leave.</p> <p>4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion)</p> <p>5. 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</p>		<p>assessment question will be met/respected.</p> <ul style="list-style-type: none"> ● The landowners and family members will carry out the Project activities, therefore no additional labour force is required, and no additional workers will be hired. ● 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. ● Training is delivered to family members before starting planting activities. 	
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Principle 6.2 Negative Economic Consequences

<p>1. Does the project cause negative economic consequences during and</p>	<p>NO</p>	<p>For the first eight initial years or until the project reaches 73,000 tCO₂, the project relies on funds</p>	
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after project implementation?		from South Pole Carbon Asset Management Ltd. After that period, the project relies on the sale of carbon credits. Therefore, the project is financially sustainable.	
>> The Project Developer shall demonstrate the financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period			
>> 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 marginalised 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.	
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	NO	GHG emissions will be reduced because of carbon sequestration. No	

		use of fertilisers. Soil preparation is the same as baseline.	
>> Projects shall not increase greenhouse gas emissions over the Baseline Scenario unless this is specifically allowed within Activity Requirements or Gold Standard Approved Impact Methodologies		The project activities do not involve an increase in the emissions when comparing to baseline emissions.	
Principle 7.2 Energy Supply			
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.	
>> The Project shall not affect the availability and reliability of energy supply to other users		On the contrary, the project activity will increase the availability of firewood in the participant's land.	
Principle 8.1 Impact on Natural Water Patterns/Flows			
Will the Project affect the natural or pre-existing pattern of watercourses, groundwater and/or	No	Project is intended to have positive impact on water resources through improved filtration and reduced soil	

<p>the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?</p>		<p>erosion, reducing the flooding potential, high seasonal flow variability and water scarcity.</p>	
<p>>> 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</p>		<p>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.</p>	
<p>>> The Project shall ensure that water resources are conserved. For surface waters this means:</p> <p>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</p>		<p>Tree planting areas are not found in wetland areas and are mostly not near surface streams or are planted as riparian buffers. 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 it will be the protective forest cover that fulfils the function of riparian buffer.</p> <p>a) The plantations will not be implemented in areas sensitive</p>	

<p>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.</p>		<p>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.</p> <p>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.</p>	
<p>>> At each Performance Certification the Project shall</p>		<p>It is planned to continue using global databases to evaluate physical water stress or scarcity,</p>	

assess whether it is in an area of physical water stress or scarcity.		while developing area-specific information, which will be continuously searched.	
>> 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.	
>> 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.	
Principle 8.2 Erosion and/or Water Body Instability			
a) Could the Project directly or indirectly cause additional erosion and/or water body	No	The project will enhance water holding capacity of the soil and also bind the soil together. The tree	

instability or disrupt the natural pattern of erosion?		cover will also reduce wind and raindrop erosion.	
Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	Potentially	<p>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.</p> <p>In the project area, some of the project participants may join this project to control erosion (through planting of native trees along riparian zones).</p> <p>However, it is not necessary to implement any additional monitoring process, as the plantations localised in these areas are monitored by default through the project implementation and verification stages.</p>	
>> The risk of the Project negatively impacting the catchment and any risks impacting the Project's success shall be assessed and addressed. The project shall ensure its ongoing,	No	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	

<p>long-term viability and impact on surrounding social-economic and environmental assets. The project shall assess the sensitivity of the physical area of influence due to low percentage of impervious cover in a project (e.g., basin, catchment), susceptibility to erosion and water body instability, and lack of terrestrial habitat connectivity. The project can use mapping tools, or other appropriate nationally recognised tools, academic or published studies on the relevant area. The recommended methods include online tools, visual inspection, engineering or physical assessment, historical land use records, aerial photographs, and verbal or written surveys with local agencies and residents on the characterisation of geomorphology of water bodies</p>		<p>trampling of animals and improving soil structure which in turn, improves infiltration.</p>	
<p>>> The Project shall demonstrate that measures to ensure soil protection and minimised erosion</p>		<p>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</p>	

<p>are in place prior to the commencement of the Project</p>		<p>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.</p>	
<p>>> The Project shall demonstrate that measures will be undertaken to ensure that surface and ground waters are protected from erosion and that these measures are in place prior to the commencement of the Project</p>		<p>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.</p>	
<p>>> 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 the effective slope length shall be taken into account</p>		<p>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.</p>	
<p>>> Impact shall be reassessed at a frequency appropriate to the context of the ecosystem affected. The monitoring approach and frequency shall be justified by</p>		<p>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</p>	

reference to natural patterns and variations		soil that need to be managed. Also, the natural variations and patterns are covered because the visits to the farms are quite frequent.	
>> Where the Project takes place in a water scarce or water stressed area, 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 9.1 Landscape Modification and Soil			
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. This is presented in each farmer's agreement, where all the systems objectives to be implemented in the area are detailed.

>> The Project shall identify the functions and services provided by the landscape and demonstrate no net degradation in existing landscape function and services		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 prior to tree planting are activities that have a higher potential of degradation when compared to the management systems established by the project. Therefore, no net degradation will occur in existing landscape functions 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.	
<p>>> To ensure healthy soils the following aspects shall be identified, and appropriate measures shall be put in place to protect them:</p> <p>(a) Soil types, and</p> <p>(b) Biota, and</p>		The selection of the species used in the project were based on 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	

(c) Erosion		ensure healthy soils. Also, the project activities adopted are more sustainable when compared 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.	
>> Measures shall be incorporated to minimise soil degradation (e.g., through crop rotation, composting, no use of heavy machinery, use of N-fixing plants, reduced tillage, no use of ecologically harmful substances)		Measures to minimise soil degradation were incorporated. Agroforestry systems are implemented in areas where only crop production was implemented in the past. Also, tree planting can be done in agricultural fields and grazing fields, therefore enhancing the soil conditions, especially when compared with the land use practices before the implementation of the project activities. The project activity itself minimises soil degradation when comparing with the baseline.	
>> Projects that involve the production, harvesting, and/or		The landowners participating in the project are familiar with the project	

management of living natural resources by small-scale landholders and/or local communities shall adopt the appropriate and culturally sensitive sustainable resource management practices		activities and this was also taken into consideration for the design of the same, aiming to adopt appropriate practices that are culturally and sensitive sustainable resource management practices.	
Principle 9.2 Vulnerability to Natural Disaster			
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.	
>> 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 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		The project activities itself minimise 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 mitigation measure to minimise the natural and man-made impacts.	

information about emergency preparedness and response Projects, resources, and responsibilities to affected communities			
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms (GMOs), (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	Only certified seeds from a single known source (KEFRI) will be used and no GMOs will be used in the project activities.	
>> Projects involving the use of GMOs are not eligible for Gold Standard Project Design Certification		The project activity does not involve the use of GMOs.	
>> An assessment for the risk of GMO contamination from outside the Project area and reasonable and appropriate counter measures should be taken		The risk of GMO contamination from outside the project area is minimal. According to KFS reports, there are no reports of GMO species in the vicinity of the species to be used in the project, so the probability of	

		contamination is low. However, an assessment of the risk of GMO contamination will be developed if necessary.	
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	No	There will be no use of machinery, fertiliser, or other agrochemical.	
>> 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.	
>> 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.	
>> All potential pollution sources that may result from the Project that cause the degradation of the		It has been identified that one of the potential pollutants are the bags that are used for the production of	

<p>quality of soil, air, surface and groundwater within the Project's area of influence shall be identified. Appropriate mitigation measures and monitoring shall be implemented to ensure the protection of resources. The project can use historical records, ongoing monitoring and reporting through data logging of physical measurements, online sources, government data. The recommended methods include quantitative documentation of all sources and volumes of water abstractions, use of weirs and gauges, flow metres, pump energy consumption, transpiration rates, government data</p>		<p>the seedlings, however, from the project promotes a campaign for owners to make the collection and proper disposal.</p>	
Principle 9.5 Hazardous and Non-hazardous Waste			
<p>Will the Project involve the manufacture, trade, release, and/or use of hazardous and non-hazardous chemicals and/or materials?</p>	<p>No</p>	<p>No chemicals are used to grow or manage most of the trees.</p>	

<p>>> Projects shall avoid or, when avoidance is not feasible, minimise 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</p>		<p>Not applicable.</p>	
<p>>> 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 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</p>		<p>Not applicable</p>	
<p>>> All sources of waste and waste products shall be identified and</p>		<p>It has been identified that one of the potential pollutants are the bags</p>	

<p>classified. Waste products include, among others:</p> <ul style="list-style-type: none"> (a) Chemical wastes, and (b) Containers, and (c) Fuels and oils, and (d) Human waste, and (e) Rubbish (including metals, plastics, organic and paper products), and (f) Abandoned buildings, machinery or equipment 		<p>that are used for the production of the seedlings, however, the project promotes a campaign for owners to make the collection and proper disposal.</p>	
<p>>> 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</p>		<p>It has been identified that one of the potential pollutants are the bags that are used for the production of the seedlings, however, the project promotes a campaign for owners to make the collection and proper disposal.</p>	
<p>>> Where waste may not be recovered or reused, it shall be treated, destroyed, or disposed of in an environmentally sound manner that includes the</p>		<p>Not applicable</p>	

appropriate control of emissions and residues resulting from the handling and processing of the waste material			
>> 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	
>> 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	
Principle 9.6 Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	Yes	<i>Cupressus lusitanica</i> can be infested by aphids and pesticides are used to control it. This has only occurred once during the last three decades	To avoid any outbreak that could compromise the development of the project, the plantation will be

		<p>in the project area. However, the use of agrochemicals will be considered the last option.</p>	<p>monitored by each farmer, following the direction and training sessions from WWF Kenya and the KFS about the pest and diseases.</p> <p>Section B.7.1 Data and parameters to be monitored presented a paragraph called "Number of pest and disease events", with the objective of registering and reporting possible pest and disease events to the lead of each WRUA, and then to the WWF and the KFS, to implement control actions in the areas affected.</p>
>> 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		<p>IPM is proposed, starting with the cultural practices traditionally used by farmers.</p>	
>> The health and environmental risks associated with pest		<p>Also, due to the small area size and use of diverse tree species, chemical</p>	

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		pesticides are not necessary and the potential for a disease or pest outbreak are reduced. Therefore, the farmers do not rely on the use of chemical pesticides.	
>> 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-target species and the environment shall be selected		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.	
>> There shall be a 'Chemical Pesticides Policy' that is documented, implemented and regularly updated. This policy shall include at a minimum:		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.	
(a) Provisions for safe transport, storage, handling and application, AND		Not applicable	

(b) Provisions for emergency situations		Not applicable	
Principle 9.7 Harvesting of Forests			
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. Each agreement presented in specific the information of the species that will be planted in the area and the numbers for each one. Also, in this document is presented the rotational period for the plants. (See support documentation/Farmer agreement). No prescriptive on usage of final products
>>The Project shall: (a) Enhance the sustainable management of forests, including		With agroforestry systems and woodlots, the project aims to reduce the pressure on natural ecosystems.	

<p>the application of independent, credible certification for commercial, industrial-scale timber harvesting, AND</p> <p>(b) Maintain or enhance biodiversity and ecosystem functionality in areas where improved forest management is undertaken</p>		<p>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.</p>	
Principle 9.8 Food			
<p>Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?</p>	<p>Potentially</p>	<p>One of the management systems adopted is agroforestry and this alteration has a positive impact. Agroforestry systems in the region lead to an increase in soil fertility, resulting in increased crop yields.</p> <p>In case this arises, land use zoning and agroforestry planting regime will be encouraged to the farmers</p>	<p>.</p>
<p>>> The Project activity shall not negatively influence access to and availability of food for people affected</p>		<p>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.</p>	

Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	Some grazing will be allowed in the reforestation areas once trees have established i.e. beyond five years. It will only be applicable if the prior existence of grazing animals were present in the project areas. It is essential to mention that this activity is implemented on a very small scale and as a subsistence activity for the farmers.	
>> The welfare of animals shall be ensured.		The project will not impact the welfare of wild or domestic animals.	
>> Excessive or inadequate use of veterinary medicines shall be avoided.		Not applicable	
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	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 not forest	

		for at least 10 years before the project start date.	
>> No Project that potentially impacts identified habitats as identified above shall be implemented.		The project will not impact natural ecosystems and HCV zones.	
>> 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.	

<p>d) Habitats of rare, threatened and endangered species, AND</p> <p>e) Areas relevant for habitat connectivity shall be identified and managed to protect or enhance biological diversity.</p>			
<p>>> If the Project is located in such habitats; the Project Developer shall:</p> <p>Minimise unwarranted conversion or degradation of the habitat.</p> <p>Identify opportunities to enhance the habitat as part of the Project.</p>		<p>Not applicable</p>	
<p>>> The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design.</p>		<p>The recommendations of two experts in watershed, biodiversity and water resource management were considered. Summaries can be found in Section D of the PDD.</p>	
<p>Principle 9.11 Endangered Species</p>			

<p>a. Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)?</p>	<p>Yes</p>	<p>In the following table is presented the vegetal engendered species detected for the project area³⁵</p> <table border="1" data-bbox="1096 314 1646 1116"> <thead> <tr> <th>Scientific name</th><th>Local name</th><th>Status</th></tr> </thead> <tbody> <tr> <td><i>Olea africana</i></td><td>Mutamaiyu</td><td>Threatened and Restricted</td></tr> <tr> <td><i>Olea welwitschii</i></td><td>Mucarage</td><td>Threatened and Restricted</td></tr> <tr> <td><i>Prunus africana</i></td><td>Muiiri, Mwiri</td><td>Endangered</td></tr> <tr> <td><i>Acacia nilotica</i></td><td>Mgunga, Mjungu, Mtetewe</td><td>Threatened</td></tr> <tr> <td><i>Dombeya torrido</i></td><td>Mukeu</td><td>Threatened</td></tr> <tr> <td><i>Warbugia ugandensis</i></td><td>Muthiga</td><td>Vulnerable</td></tr> <tr> <td><i>Markhamia lutea</i></td><td>Muu</td><td>Endangered</td></tr> <tr> <td><i>Juniperus procera</i></td><td>Mwangati</td><td>Restricted</td></tr> <tr> <td><i>Teclea nobilis</i></td><td>Munderedu</td><td>It has reduced in the project area due to the use of this species</td></tr> </tbody> </table> <p>Many of the endangered species are nearly extinct. They are much</p>	Scientific name	Local name	Status	<i>Olea africana</i>	Mutamaiyu	Threatened and Restricted	<i>Olea welwitschii</i>	Mucarage	Threatened and Restricted	<i>Prunus africana</i>	Muiiri, Mwiri	Endangered	<i>Acacia nilotica</i>	Mgunga, Mjungu, Mtetewe	Threatened	<i>Dombeya torrido</i>	Mukeu	Threatened	<i>Warbugia ugandensis</i>	Muthiga	Vulnerable	<i>Markhamia lutea</i>	Muu	Endangered	<i>Juniperus procera</i>	Mwangati	Restricted	<i>Teclea nobilis</i>	Munderedu	It has reduced in the project area due to the use of this species	<p>The project includes the plantation of some of these endangered species, and their monitoring will be aligned with the plantation monitoring itself.</p>
Scientific name	Local name	Status																															
<i>Olea africana</i>	Mutamaiyu	Threatened and Restricted																															
<i>Olea welwitschii</i>	Mucarage	Threatened and Restricted																															
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³⁵ <https://phytokeys.pensoft.net/article/49602/> ; <https://www.fao.org/pgrfa-gpa-archive/ken/kenya.pdf>; <http://www.kws.go.ke/content/priority-ecosystems-and-species>; http://apps.worldagroforestry.org/useftrees/pdflib/Acacia_lahai_KEN.pdf; http://apps.worldagroforestry.org/useftrees/pdflib/Olea_europaea_KEN.pdf; http://apps.worldagroforestry.org/treedb/AFTPDFS/Juniperus_procera.PDF

		valued and won't be affected at any time during the project.	
Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	No	The project will be implemented in areas degraded and no endangered species are present on those areas.	
>> Under no circumstances shall the Project lead to the reduction or negative impact of any recognised 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.	
>> 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.	
>> The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being considered and incorporated into 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.	

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.

Following are the experts' resumes, and attached are the CVs.

Name	Resume
DR. WILLIAM OWEKE OJWANG (PhD)	William's skills and experience over the last two decades spans academia, research, natural resource management, policy development, community outreach, resource mobilisation and management of partnership/donor relationships. His experience in public service delivery has largely shaped his approach to leadership and public management. Over the last 15 years, William has worked as a senior scientist/senior Assistant Director with the Kenya Marine and Fisheries Research Institute (KMFRI). His work entailed coordination (designing, implementing and managing) multidisciplinary research in Kenyan main freshwater systems, and facilitating integration of ecological, economic, social and institutional issues in strategic decisions. Currently, William works for Worldwide 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 Military University as a biologist and holds a Master's in Environmental Management from The Andes University.

	<p>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.</p> <p>As manager of Bogota's Water Fund she leads a group of professionals, and together they work with private companies, communities, and the public sector, in promoting the conservation of supply water systems for 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 led the design of the 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.</p> <p>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.</p> <p>In an initiative funded by the Climate and Development Knowledge Network (CDKN), Liliana coordinated the Colombian analysis of incentive schemes for conservation for six Latin American countries to assess their potential as a model of development compatible with climate (DCC). In the case of Colombia, she 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.</p>
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APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	South Pole / Swiss Carbon Value Ltd.
Registration number with relevant authority	--
Street/P.O. Box	Technoparkstrasse 1, 8005
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City	Zurich
State/Region	--
Postcode	--
Country	Switzerland
Telephone	+41 43 501 35 50 (reception)
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Contact person	William John Garrett
Title	Agricultural Value Chains
Salutation	--
Last name	Garrett
Middle name	John
First name	William
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Mobile	+41 43 501 35 50 (reception)
Direct tel.	--
Personal email	--

Organization name	WWF Kenya
Registration number with relevant authority	--
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State/Region	--
Postcode	--

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Telephone	+254(0)722203407+ 254(0)733333409
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Salutation	--
Last name	Awer
Middle name	--
First name	Mohamed
Department	CEO of WWF-Kenya
Mobile	+254(0)722203407+ 254(0)733333409
Direct tel.	--
Personal email	--

APPENDIX 3 - LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	<p>The project implementer will identify at least 1,150 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 1,150 ha due to social risks. These risks could be caused by other programmes, projects, or activities with different organisations. In addition, there are environmental risks. Long drought periods and landslides can affect the project area causing mortality of the trees planted.</p>
Risk of change to the Project activities during Project Certification Period:	<p>The main risk of change in the project activity is the opportunity cost.</p> <p>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.</p> <p>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.</p> <p>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.</p>
Land-use history and current status of Project Area:	<p>The project area consists largely of the grassland/shrubland, and some bare lands were indicated in section B.4. Establishment and description of baseline scenario, the land use presented in the project area previously to the implementation of its activities, is the traditional agriculture in most of the case for subsistence and the presence of floriculture/horticulture activities, as these activities represent a major economic fluxes for the local communities.</p>

Socio-Economic history:	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 tonnes) 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).
Forest management applied (past and future)	<p>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 fall into the project areas have been 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.</p> <p>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, 2020 and 2021.</p> <p>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.3 Technologies and/or measures.</p>
Forest characteristics (including main tree species planted)	The main tree species planted are: <i>Casuarina equisetifolia</i> , <i>Grevillea robusta</i> , <i>Olea africana</i> , <i>Prunus africana</i> , <i>Mangifera indica</i> , <i>Persea Americana</i> , <i>Dombeya goetzenii</i> , <i>Hagenia abyssinica</i> , <i>Acacia xanthophloea</i> , <i>Cupressus lusitanica</i> , <i>Pinus patula</i> , <i>Juniperus communis</i> , <i>Ficus sycomorus</i> , <i>Juniperus procera</i> and <i>Podocarpus gracilior</i> . The planting density will be 650 stems per ha for agroforestry and 1,100 stems per ha for woodlots.
Main social impacts (risks and benefits)	Risks:

	<ul style="list-style-type: none"> - 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 (for example, 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. <p>Benefits:</p> <ul style="list-style-type: none"> - Without the project, firewood is available, but the forests are far away 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 to meet some unsatisfied basic needs. <p>Risks:</p> <p>The current productive activities carried out in the areas which are to be planted are transferred to other parts of the basin, and consequently impact the natural ecosystems.</p> <p>Benefits:</p>
Main environmental impacts (risks and 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 initial eight years, or until 73,000 tCO ₂ are generated, South Pole Carbon Asset Management Ltd 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.
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:	<p>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).</p> <p>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 fluvio-Iacustrine 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.</p> <p>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</p>

	<p>permanent, feeding Lake Naivasha mainly through surface flow (input calculated as 85% surface and 15% subsurface, (Gaudet, 1981)).</p> <p>On the eastern, western and north-western and southern side of the catchment area, no surface water reaches the lake (Figure 1). 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).</p>
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	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.

APPENDIX 4 - SUMMARY OF APPROVED DESIGN CHANGES

Please refer to Design Change [Requirements](#) for more information on procedures governing Design Changes

Revision History

Version	Date	Remarks
1.2	14 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption

APPENDIX 5 – ABBREVIATIONS

AGB: above-ground biomass

AHEBS,i: ha in the baseline scenario at year i

AHEPS,i: ha in the project scenario at year i

A/R : Afforestation/Reforestation

ASALs : Arid and Semi-Arid Lands

BEF1: Biomass Expansion Factor

CF: Carbon Fraction

CFAs: Community Forest Associations

DBH: Diameter at breast height

FCPF : Forest Carbon Partnership Facility

Flamingo: Flamingo Horticulture Kenya

FPIC : free, prior and informed consent

GFW: Global Forest Watch

GHG: greenhouse gas

Ha: hectares

Ht: Total height

Imarisha: is a non-profit organization located in Kenya

INDCs: Intended Nationally Determined Contributions

KFS: Kenya Forest Services

LSC: local Stakeholder Consultation

Masl: Meters above sea level

MU: Modelling units

NCCRS : National Climate Change Response Strategy

Oserian: is one of the world's largest flower farm in Naivasha

PA: project area

R: Root-Shoot-Ratio

SDGs: Sustainable Development Goals

WBC: Water Benefit Certificates

WWF: World Wide Fund for Nature

WRUAs: Water Resources Users Associations