

General information

Remover name	Bamboo 4 All the World		
Project code	BVUL002		
Project name	Kibale 1		
Location	Kibale, Uganda		
Area	9.46	ha	
Starting year	2025		year of planting
Duration	20	years	project duration
Holding pool	20%		freed up when measurements confirm projection pathways
Project emissions	17.36	tCO2-eq	LCA estimate, or specified when >20%

Per hectare

Baseline TEC	786	tCO2/ha	Soil Organic Carbon and Above Ground Carbon, following CDM AR-ACM0003
Reference capacity	1,231	tCO2/ha	Using CEDA and Soil sample data
Storage potential	445	tCO2/ha	Projection -/- baseline

Per project

Projected storage	4,155	tCO2	storage potential per ha x area
Storage in fence	909	tCO2	
Storage in fruit trees	2	tCO2	
LCA emissions	17	tCO2	project related emissions
Net storage potential	5,049	tCO2	project storage -/- emissions over 20 years

Potential Carbon Removal Units

Units first 12 years	3,030	units	12/20 x net storage potential
Holding Pool	606	units	20% of the first 12 years
Potential units issued	2,424	units	

Field Code	Field name	Size (ha)	Owner	
BVUL001	Kibale 1	9.33	Bamboo community limited	
B	Fence	0.13		
	1231.314613			

Carbon Calculation for		BVUL002							
Surface	9.33	ha	Fields tab						
Capacity SOC	733.33	tCO2/ha	References tab						
Capacity AGB	498	tCO2/ha	References tab						

Sources									
value	source	URL	Notes						
CEDA aboveground biomass carbon	https://climatee	https://dataceda	2018 data						
SOC	A critical review of the conventional SOC to SOM conversion factor (Geoderma, Volume 156, Issues 3–4, 15 May 2010, Pages 75-83)								
Density	Wageningen Ur	https://edepot.wu	We've added these soil density levels to the calculation factors tab						
Reference data for capacity									
SOC	733.33	tCO2e/ha							
SOC reference	200	tC/ha	Yuen et al. (2017), Max. based on 70 species from 184 studies [Max 200, min 70, Average 135]						
AGB	498	tCO2e/ha							
	398.400	tCO2/ha	Yuen et al. 2017; Hermis et al. 2014; Deepika et al. 2022						

Assumptions and used numbers

Conversion C in CO₂ with 44/12 (= ratio of molecular weight)

Carbon content C increases 10%

Overview of the CO₂ storage potential in above- and below-ground biomass

Bamboo species	ABC carbon total (incl. culms, branches, leaves) [t C/ha]	BGC carbon total (incl. rhizomes) [t C/ha]	Total stored carbon [t C/ha]	Total stored CO ₂ [t CO ₂ /ha]	Source
Dendrocalamus Asper	108.1	23.6	131.7	482.8	Nien et al. (2017)
	86.1	26.9	106.7	391.3	Herrera et al. (2014)
	64.8	27.7	87.6	321.3	Zengshu et al. (2002)
Average		21.8		206.7	
Bambusa bambusa	168.7	0.3	174.9	611.2	Shamugheeswari et al. (2001)
	143.1	12.2	155.5	570.2	Nien et al. (2017)
	144	22.5	166.5	618.4	Nath et al. (2000); Shamugheeswari (1998)
	121	19.5	140.5	515.1	Joshi et al. (2011);Nath et al. (2000); Kumar et al. (2001)
Average		15.1		155.3	

Tree species	ABC carbon total [t C/ha]	BGC carbon total [t C/ha]	Total stored carbon [t C/ha]	Total stored CO ₂ [t CO ₂ /ha]	
Mango	0.04	0.01	0.05	0.2	Volery et al. (2021)
Guava	0.02	0.005	0.02	0.1	Lambert et al. (2021)
Coffee	0.01	0.01	0.02	0.1	Pirgeim, M., Shari, M. (2015)
Banana	0.003	0.01	0.01	0.2	Gowdhamathy (2021); Datta-Gupta et al. (2020)
Coconut	0.02	0.004	0.02	0.1	Verwilt et al. (2022); Somarriba et al. (2018); Sikar et al. (2024)

Calculation of carbon stored in below-ground biomass

	Participation per area [%]	BGC	[Mg C/ha]
		a	b
Dendrocalamus Asper	100%	0.7817	0.74
Bambusa bambusa		0.3714	0.8256
		0.6379	0.8638

Fence calculation

Perimeter of total Kibila plantation (54.87 × 9.46 ha), excl. 2 entrances

Amount of bamboo for total fence (1 plantation) (54.87 × 9.46 ha)

Allocated amount of bamboo for fence (9.46 ha)

Storage potential of total fence

Allocated storage potential of fence (9.46 ha)

Allocated area of the 2 meters wide fence (ha)

Frut tree calculation

Planting scheme - total Kibila plantation (54.87 × 9.46 ha)	Amount of trees	Total stored CO ₂ [t CO ₂]
Mango	50	0.1
Guava	50	0.1
Coffee	-	-
Banana	-	-
	20	1.7
		14.7
Allocated storage potential of fruit trees (9.46 ha)		2.2

