

Appendix

Calculation Sheets

Appendix Index

Forest and Natural Resources Conservation Sector

Appendix-1 Afforestation

Appendix-2 Forest Conservation

Traffic and Transportation Sector

Appendix-3 Freight /Passenger Transportation Improvement

Appendix-4 MRT

Appendix-5 Mono-rail, LRT

Appendix-6 Bus

Energy Conservation (Industry) Sector

Appendix-7 Energy Efficiency Improvement

Appendix-8 Electricity and Heat Supply

Appendix-9 Fuel Switching

Energy Sector

Appendix-10 Energy Plant Construction with Fuel Switching

Appendix-11 Thermal Power with Electricity and Heat Supply

Appendix-12 Thermal Power with Fuel Switching

Appendix-13 Thermal Power with Higher Efficiency

Appendix-14 Power Transmission with Improved Efficiency

Appendix-15 Power Distribution with Improved Efficiency

Appendix-16 Rural Electrification

Renewable Energy

Appendix-17 Hydro Power

Appendix-18 Wind Power

Appendix-19 Photovoltaic power /Solar heat

Appendix-20 Geothermal Power

Appendix-21 Biomass

Sewerage, Urban Sanitation

Appendix-22 Landfill disposal of waste

Appendix-23 Intermediate Treatment of Waste

Appendix-24 Wastewater Treatment

Appendix-25 Sewerage

Forest and Natural Resources Conservation Sector

Appendix-1 Afforestation

Appendix-2 Forest Conservation

**Afforestation
Project Emissions**

Croplands with changes in the carbon stocks expected not to exceed 10% of ex ante actual net GHG removals by sinks		
Δ CACTUAL,t =	43,471.13	
10%Δ CACTUAL,t of =	4,347.11	
Project area	225	
Constant carbon stocks (cotton crop)		
B(t)	0.00 tC	
BA(t) i	21.00 tC/ha	
BB(t) i	5.04 tC/ha	
Ai	0.00 há	Whole crop of cotton is taken out every year.
i	1.00	
M(t)	21.00 tC/ha	
carbon fraction of dry matter	0.50 (t C/tdm)	Meth.AR-AMS0001
Mgrass y (t=0)	0.00	
Mwood y (t=0)	21.00 tdm/ha	Table 3.3.2 Tropical, moist Table 3A.1.8 Grassland Temperate/sub-tropical/tropical grassland
Rgrass	1.58 (tdm/tdm)	Table 3A.1.8 Other, "Woodland/savanna"
Rwoody	0.48 (tdm/tdm)	
Carbon stocks (existing trees)		
B(t)	4,537.58 tCO ₂	
B(t)	1,237.52 tC	
Ai	104.20 ha	
BA(t) cropland	8.02 tC/ha	
a) Trees (>10cm)		
Tree Volume(t=0) (Palms)	11.20 m ³ /ha	Asunción University
Tree Volume(t=0) (Other trees)	1.20 m ³ /ha	Asunción University
Tree Volume(t=20) (Palms)	27.22 m ³ /ha	
Tree Volume(t=20) (Other trees)	3.70 m ³ /ha	
Tree Density (Palms)	0.50 t.d.m/m ³	Table 3A.1.9
Tree Density (Other trees)	0.62 t.d.m/m ³	Table 3A.1.9
M(t=0) (Palms)	5.60 tdm/ha	
M(t=0) (Other trees)	0.74 tdm/ha	
M(t=20) (Palms)	13.61 tdm/ha	Maximum
M(t=20) (Other trees)	2.29 tdm/ha	Maximum
carbon fraction of dry matter	0.50 (t C/tdm)	Meth.AR-AMS0001
BA(t=20) (Palms)	6.81 tC/ha	Maximum
BA(t=20) (Other trees)	1.15 tC/ha	Maximum
b) Trees (<10cm)		
Tree Volume(t=0) (Palms)	- m ³ /ha	Asunción University
Tree Volume(t=0) (Other trees)	- m ³ /ha	Asunción University
Tree Volume(t=20) (Palms)	0.03 m ³ /ha	
Tree Volume(t=20) (Other trees)	0.21 m ³ /ha	
Tree Density (Palms)	0.50 t.d.m/m ³	Table 3A.1.9
Tree Density (Other trees)	0.62 t.d.m/m ³	Table 3A.1.9
M(t=0) (Palms)	- tdm/ha	
M(t=0) (Other trees)	- tdm/ha	
M(t=20) (Palms)	0.02 tdm/ha	Maximum
M(t=20) (Other trees)	0.13 tdm/ha	Maximum
carbon fraction of dry matter	0.50 (t C/tdm)	Meth.AR-AMS0001
BA(t=20) (Palms)	0.01 tC/ha	Maximum
BA(t=20) (Other trees)	0.07 tC/ha	Maximum
BB(t) cropland		
carbon fraction of dry matter	0.50 (t C/tdm)	Meth.AR-AMS0001
Mwood y (t=20)	16.05 tdm/ha	
Rwoody	0.48 (tdm/tdm)	Table 3A.1.8 Other, "Woodland/savanna"

Grasslands with changes in the carbon stocks expected not to exceed 10% of ex ante actual net GHG removals by sinks		
Constant carbon stocks (grasslands) in years		
B(t=0)	1,993.49	tCO ₂
B(t)	543.68	tC
BA(t) i	3.10	tC/ha
BB(t) i	4.898	tC/ha
Ai	111.00	ha
i	1	
M(t)	6.20	tdm/ha
carbon fraction of dry matter	0.5	(t C/tdm)
Mgrass y (t=0)	6.2	tdm/ha
Mwood y (t=0)	0	tdm/ha
Rgrass	1.58	(tdm/tdm)
Rwoody	0.48	(tdm/tdm)
Only BB(t) i is counted in. Meth.AR-AMS0001 Table 3.4.2 Tropical Moist & Wet Table 3A.1.8 Grassland, "Temperate/sub-tropical/tropical grassland" Table 3A.1.8 Other, "Woodland/savanna"		
Carbon stocks (existing trees)		
B(t)	2,205.66	tCO ₂
B(t)	601.54	tC
Ai	111.00	ha
BA(t) grassland	3.66	tC/ha
a) Trees (>10cm)		
Tree Volume(t=0) (Palms)	4.70	m ³ /ha
Tree Volume(t=0) (Other trees)	2.30	m ³ /ha
Tree Volume(t=20) (Palms)	9.27	m ³ /ha
Tree Volume(t=20) (Other trees)	3.85	m ³ /ha
Tree Density (Palms)	0.50	t.d.m/m ³
Tree Density (Other trees)	0.62	t.d.m/m ³
M(t=0) (Palms)	2.35	tdm/ha
M(t=0) (Other trees)	1.43	tdm/ha
M(t=20) (Palms)	4.64	tdm/ha
M(t=20) (Other trees)	2.39	tdm/ha
carbon fraction of dry matter	0.50	(t C/tdm)
BA(t=20) (Palms)	2.32	tC/ha
BA(t=20) (Other trees)	1.19	tC/ha
b) Trees (<10cm)		
Tree Volume(t=0) (Palms)	-	m ³ /ha
Tree Volume(t=0) (Other trees)	-	m ³ /ha
Tree Volume(t=20) (Palms)	0.02	m ³ /ha
Tree Volume(t=20) (Other trees)	0.47	m ³ /ha
Tree Density (Palms)	0.50	t.d.m/m ³
Tree Density (Other trees)	0.62	t.d.m/m ³
M(t=0) (Palms)	-	tdm/ha
M(t=0) (Other trees)	-	tdm/ha
M(t=20) (Palms)	0.01	tdm/ha
M(t=20) (Other trees)	0.29	tdm/ha
carbon fraction of dry matter	0.50	(t C/tdm)
BA(t=20) (Palms)	0.01	tC/ha
BA(t=20) (Other trees)	0.15	tC/ha
BB(t) grassland	1.76	tC/ha
carbon fraction of dry matter	0.50	(t C/tdm)
Mwood y (t=20)	7.32	tdm/ha
Rwoody	0.48	(tdm/tdm)
Asunción University Asunción University Table 3A.1.9 Table 3A.1.9 Maximum Maximum Meth.AR-AMS0001 Maximum Maximum Asunción University Asunción University Table 3A.1.9 Table 3A.1.9 Maximum Maximum Meth.AR-AMS0001 Maximum Maximum Meth.AR-AMS0001 Table 3A.1.8 Other, "Woodland/savanna"		
ΔCBSL_{t,crop}	4,537.58	t CO ₂ -e (total)
ΔCBSL_{t,grass}	4,199.15	t CO ₂ -e (total)
ΔCBSL_t	8,737.00	t CO ₂ -e/year

Afforestation Schedule

Year	S1		S2		S3		S4		S5		S6		S7		S8	
	T	H	T	H	T	H	T	H	T	H	T	H	T	H	T	H
2010-11																
2011-12																
2012-13					40								40			
2013-14	40						40								40	
2014-15													30			
2015-16																
2016-17																
2017-18	30															
2018-19																
2019-20																
2020-21																
2021-22																
2022-23																
2023-24																
2024-25																
2025-26	40															
2026-27																
2027-28																
2028-29																
2029-30	30															
2030-31																

T : Thinning(%)

H : Harvesting

Year	S1		S2		S3		S4		S5		S6		S7		S8			
	Tree volume (m ³ /ha) (SV)	Thinning volume (m ³ /ha)	Final cut (m ³ /ha)	Tree volume (m ³ /ha) (SV)	Thinning volume (m ³ /ha)	Final cut (m ³ /ha)	Tree volume (m ³ /ha) (SV)	Thinning volume (m ³ /ha)	Final cut (m ³ /ha)	Tree volume (m ³ /ha) (SV)	Thinning volume (m ³ /ha)	Final cut (m ³ /ha)	Tree volume (m ³ /ha) (SV)	Thinning volume (m ³ /ha)	Final cut (m ³ /ha)	Tree volume (m ³ /ha) (SV)	Thinning volume (m ³ /ha)	Final cut (m ³ /ha)
2010-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011-12	63.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012-13	94.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013-14	125.00	50.00	0.00	94.00	0.00	113.00	45.20	0.00	85.00	0.00	0.00	0.00	115.20	0.00	0.00	86.20	34.48	0.00
2014-15	113.00	0.00	0.00	125.00	50.00	102.00	0.00	0.00	113.00	0.00	0.00	0.00	103.60	0.00	0.00	115.20	0.00	0.00
2015-16	146.00	0.00	0.00	113.00	0.00	132.00	0.00	0.00	102.00	0.00	0.00	0.00	134.20	0.00	0.00	103.60	0.00	0.00
2016-17	180.00	0.00	0.00	146.00	0.00	163.00	0.00	0.00	132.00	0.00	0.00	0.00	165.80	0.00	0.00	134.20	40.26	0.00
2017-18	213.00	63.90	0.00	180.00	0.00	183.00	0.00	0.00	163.00	0.00	0.00	0.00	196.40	0.00	0.00	165.80	0.00	0.00
2018-19	221.00	0.00	0.00	213.00	63.90	0.00	0.00	0.00	193.00	0.00	0.00	0.00	0.00	0.00	0.00	196.40	0.00	0.00
2019-20	230.00	0.00	0.00	221.00	0.00	0.00	0.00	0.00	201.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020-21	254.00	0.00	0.00	230.00	0.00	0.00	0.00	0.00	208.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021-22	297.00	0.00	0.00	254.00	0.00	0.00	0.00	0.00	239.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022-23	0.00	0.00	0.00	297.00	0.00	0.00	0.00	0.00	269.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023-24	43.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024-25	65.00	0.00	0.00	43.00	0.00	69.00	0.00	0.00	269.00	0.00	0.00	0.00	66.40	0.00	0.00	66.40	26.56	0.00
2025-26	86.00	34.40	0.00	65.00	0.00	92.00	0.00	0.00	269.00	0.00	0.00	0.00	88.70	0.00	0.00	88.70	0.00	0.00
2026-27	78.00	0.00	0.00	86.00	0.00	83.00	0.00	0.00	0.00	0.00	0.00	0.00	103.40	31.02	0.00	79.80	0.00	0.00
2027-28	101.00	0.00	0.00	78.00	0.00	107.00	0.00	0.00	0.00	0.00	0.00	0.00	103.40	0.00	0.00	103.40	0.00	0.00
2028-29	124.00	0.00	0.00	101.00	0.00	132.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029-30	147.00	44.10	0.00	124.00	0.00	157.00	47.10	0.00	132.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030-31	153.00	0.00	0.00	147.00	44.10	0.00	163.00	0.00	157.00	0.00	0.00	0.00	61.40	0.00	0.00	68.30	0.00	0.00

Afforestation

Year	0.34			0.34			0.76			0.76			0.54			0.54			0.54			
	Age	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass
2010-2011	1	0.0	0.0	0.45	0.0	0.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26
2011-2012	2	63.0	21.4	0.45	57.0	43.3	0.26	0.0	0.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26
2012-2013	3	94.0	32.0	0.45	85.0	64.5	0.26	57.0	43.3	0.26	57.0	43.3	0.26	58.0	31.3	0.43	58.0	31.3	0.43	58.0	31.3	0.43
2013-2014	4	125.0	42.5	0.45	113.0	85.9	0.26	85.0	64.6	0.26	85.0	64.6	0.26	115.2	46.5	0.43	115.2	46.5	0.43	115.2	46.5	0.43
2014-2015	5	113.0	38.4	0.45	102.0	77.5	0.26	113.0	85.9	0.26	113.0	85.9	0.26	103.6	55.9	0.43	103.6	55.9	0.43	103.6	55.9	0.43
2015-2016	6	146.0	49.6	0.45	132.0	100.3	0.26	102.0	77.5	0.26	102.0	77.5	0.26	134.2	72.5	0.43	134.2	72.5	0.43	134.2	72.5	0.43
2016-2017	7	180.0	61.2	0.35	165.0	123.9	0.26	132.0	100.3	0.26	132.0	100.3	0.26	165.8	89.5	0.43	165.8	89.5	0.43	165.8	89.5	0.43
2017-2018	8	213.0	72.4	0.35	180.0	146.7	0.26	163.0	123.9	0.26	163.0	123.9	0.26	196.4	106.1	0.43	196.4	106.1	0.43	196.4	106.1	0.43
2018-2019	9	221.0	75.1	0.35	201.0	152.8	0.26	193.0	146.7	0.26	193.0	146.7	0.26	201.0	106.1	0.43	201.0	106.1	0.43	201.0	106.1	0.43
2019-2020	10	230.0	78.2	0.35	208.0	158.1	0.26	201.0	152.8	0.26	201.0	152.8	0.26	210.0	106.1	0.43	210.0	106.1	0.43	210.0	106.1	0.43
2020-2021	11	264.0	89.8	0.35	230.0	181.6	0.26	208.0	158.1	0.26	208.0	158.1	0.26	241.0	106.1	0.43	241.0	106.1	0.43	241.0	106.1	0.43
2021-2022	12	297.0	101.0	0.35	264.0	204.4	0.26	239.0	181.6	0.26	239.0	181.6	0.26	266.4	106.1	0.43	266.4	106.1	0.43	266.4	106.1	0.43
2022-2023	13	0.0	0.0	0.45	0.0	0.0	0.26	269.0	204.4	0.26	269.0	204.4	0.26	88.7	47.9	0.43	88.7	47.9	0.43	88.7	47.9	0.43
2023-2024	14	43.0	14.6	0.45	46.0	35.0	0.26	0.0	0.0	0.26	0.0	0.0	0.26	79.8	43.1	0.43	79.8	43.1	0.43	79.8	43.1	0.43
2024-2025	15	65.0	22.1	0.45	69.0	52.4	0.26	46.0	35.0	0.26	46.0	35.0	0.26	103.4	55.8	0.43	103.4	55.8	0.43	103.4	55.8	0.43
2025-2026	16	86.0	29.2	0.45	85.0	69.9	0.26	69.0	52.4	0.26	69.0	52.4	0.26	127.7	69.0	0.43	127.7	69.0	0.43	127.7	69.0	0.43
2026-2027	17	78.0	26.5	0.45	83.0	63.1	0.26	92.0	69.9	0.26	92.0	69.9	0.26	151.3	81.7	0.43	151.3	81.7	0.43	151.3	81.7	0.43
2027-2028	18	101.0	34.3	0.45	107.0	81.3	0.26	83.0	63.1	0.26	83.0	63.1	0.26	186.0	106.1	0.43	186.0	106.1	0.43	186.0	106.1	0.43
2028-2029	19	124.0	42.2	0.45	132.0	100.3	0.26	107.0	81.3	0.26	107.0	81.3	0.26	34.4	18.6	0.43	34.4	18.6	0.43	34.4	18.6	0.43
2029-2030	20	147.0	50.0	0.45	157.0	119.3	0.26	132.0	100.3	0.26	132.0	100.3	0.26	51.1	27.6	0.43	51.1	27.6	0.43	51.1	27.6	0.43
2030-2031	21	153.0	52.0	0.35	163.0	123.9	0.26	157.0	119.3	0.26	157.0	119.3	0.26	68.3	36.9	0.43	68.3	36.9	0.43	68.3	36.9	0.43
														61.4	33.2	0.43	61.4	33.2	0.43	61.4	33.2	0.43
														33.2	16.6	0.43	33.2	16.6	0.43	33.2	16.6	0.43
														16.6	8.3	0.43	16.6	8.3	0.43	16.6	8.3	0.43
														8.3	4.1	0.43	8.3	4.1	0.43	8.3	4.1	0.43
														4.1	2.1	0.43	4.1	2.1	0.43	4.1	2.1	0.43
														2.1	1.1	0.43	2.1	1.1	0.43	2.1	1.1	0.43
														1.1	0.5	0.43	1.1	0.5	0.43	1.1	0.5	0.43
														0.5	0.2	0.43	0.5	0.2	0.43	0.5	0.2	0.43
														0.2	0.1	0.43	0.2	0.1	0.43	0.2	0.1	0.43
														0.1	0.0	0.43	0.1	0.0	0.43	0.1	0.0	0.43
														0.0	0.0	0.43	0.0	0.0	0.43	0.0	0.0	0.43

Afforestation

Strata S1: *Eucalyptus deglupta*

Parameters

Area	A _{PRJ}	ha
Bulk density ¹⁾	WD	0.34 t.d.m/m ³
Biomass expansion factor ²⁾	BEF	1.50
Ratio of belowground biomass to aboveground biomass ³⁾	R	0.45 <50t/ha
		0.35 50-150t/ha
		0.20 >150t/ha

	Forest age (Year)	Tree volume		Thinning volume (m ³ /ha)	Final cut (m ³ /ha)	Remaining volume (m ³ /ha)	Aboveground biomass		carbon stock in aboveground		Belowground biomass		carbon stock in belowground		Carbon stocks		GHG removals by sinks		Net GHG removals by sinks	
		SV (m ³ /ha)	SV (m ³ /ha)				T _A (t.d.m/ha)	N _A (tC/ha)	T _B (t.d.m/ha)	N _B (tC/ha)	N(N _A +N _B) (tC/ha)	C _{PRJ} (tCO ₂)	ΔC _{PRJ} (t-CO ₂ /y)							
2010-2011	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011-2012	2	63.00	63.00	0.00	0.00	63.00	32.13	16.07	14.46	7.23	7.23	14.46	7.23	23.29	2,562.37	2,562.37	2,562.37	2,562.37	2,562.37	2,562.37
2012-2013	3	94.00	94.00	0.00	0.00	94.00	47.94	23.97	21.57	10.79	10.79	21.57	10.79	34.76	3,823.22	3,823.22	3,823.22	3,823.22	3,823.22	1,260.85
2013-2014	4	125.00	125.00	50.00	0.00	75.00	38.25	19.13	17.21	8.61	8.61	17.21	8.61	27.73	3,050.44	3,050.44	3,050.44	3,050.44	3,050.44	-772.78
2014-2015	5	113.00	113.00	0.00	0.00	113.00	57.63	28.82	25.93	12.97	12.97	25.93	12.97	41.78	4,595.99	4,595.99	4,595.99	4,595.99	4,595.99	1,545.56
2015-2016	6	146.00	146.00	0.00	0.00	146.00	74.46	37.23	33.51	16.75	16.75	33.51	16.75	53.98	5,938.19	5,938.19	5,938.19	5,938.19	5,938.19	1,342.19
2016-2017	7	180.00	180.00	0.00	0.00	180.00	91.80	45.90	32.13	16.07	16.07	32.13	16.07	61.97	6,816.15	6,816.15	6,816.15	6,816.15	6,816.15	877.97
2017-2018	8	213.00	213.00	63.90	0.00	149.10	76.04	38.02	26.61	13.31	13.31	26.61	13.31	51.33	5,646.04	5,646.04	5,646.04	5,646.04	5,646.04	-1,170.11
2018-2019	9	221.00	221.00	0.00	0.00	221.00	112.71	56.36	39.45	19.72	19.72	39.45	19.72	76.08	8,368.72	8,368.72	8,368.72	8,368.72	8,368.72	2,722.67
2019-2020	10	230.00	230.00	0.00	0.00	230.00	117.30	58.65	41.06	20.53	20.53	41.06	20.53	79.18	8,709.53	8,709.53	8,709.53	8,709.53	8,709.53	340.81
2020-2021	11	264.00	264.00	0.00	0.00	264.00	134.64	67.32	47.12	23.56	23.56	47.12	23.56	90.88	9,997.02	9,997.02	9,997.02	9,997.02	9,997.02	1,287.50
2021-2022	12	297.00	297.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-9,997.02
2022-2023	13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023-2024	14	43.00	43.00	0.00	0.00	43.00	21.93	10.97	9.87	4.93	4.93	9.87	4.93	15.90	1,748.92	1,748.92	1,748.92	1,748.92	1,748.92	0.00
2024-2025	15	65.00	65.00	0.00	0.00	65.00	33.15	16.58	14.92	7.46	7.46	14.92	7.46	24.03	2,643.71	2,643.71	2,643.71	2,643.71	2,643.71	894.80
2025-2026	16	86.00	86.00	34.40	0.00	51.60	26.32	13.16	11.84	5.92	5.92	11.84	5.92	19.08	2,098.70	2,098.70	2,098.70	2,098.70	2,098.70	-545.01
2026-2027	17	78.00	78.00	0.00	0.00	78.00	39.78	19.89	17.90	8.95	8.95	17.90	8.95	28.84	3,172.46	3,172.46	3,172.46	3,172.46	3,172.46	1,073.75
2027-2028	18	101.00	101.00	0.00	0.00	101.00	51.51	25.76	23.18	11.59	11.59	23.18	11.59	37.34	4,107.92	4,107.92	4,107.92	4,107.92	4,107.92	935.47
2028-2029	19	124.00	124.00	0.00	0.00	124.00	63.24	31.62	28.46	14.23	14.23	28.46	14.23	45.85	5,043.39	5,043.39	5,043.39	5,043.39	5,043.39	935.47
2029-2030	20	147.00	147.00	44.10	0.00	102.90	52.48	26.24	23.62	11.81	11.81	23.62	11.81	38.05	4,185.20	4,185.20	4,185.20	4,185.20	4,185.20	-858.19

Sources

¹⁾ LULUCF Table 3A.1.9-2

²⁾ LULUCF Table 3A.1.10

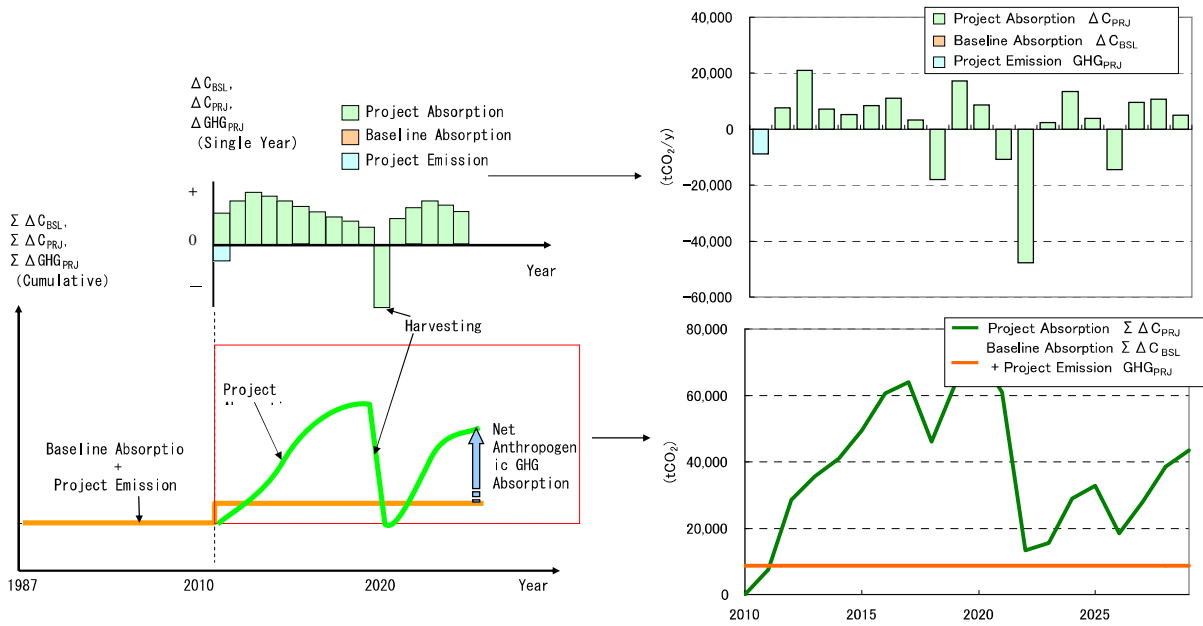
³⁾ LULUCF Table 3A.1.8

IPCC Table 3A.1.10, Tropical/Broadleaf/average.

Afforestation Result

Project Area 225

Year	Forest age	carbon stock in aboveground	carbon stock in belowground	Carbon stocks	GHG removals by sinks	Net GHG removals by sinks	Net Baseline GHG removals by sinks	Net Project emission	Baseline GHG removals by sinks + Project emission	Net Anthropogenic GHG Absorption	Cumulative
	(year)	N_A (tC/ha)	N_B (tC/ha)	$N(N_A+N_B)$ (tC/ha)	C_{PRJ} (tCO ₂)	ΔC_{PRJ} (t-CO ₂ /y)	ΔC_{BSL} (tCO ₂ /y)	GHG_{PRJ} (tCO ₂ /y)	(tCO ₂)	ER_{ARCDM} (tCO ₂ /y)	$CumER_{ARCDM}$ (tCO ₂)
2010	1	0	0	0	0	0	0	8,737	8,737	-8,737	-8,737
2011	2	191	56	123	7,527	7,527	0	0	8,737	7,527	-1,210
2012	3	420	132	276	28,535	21,008	0	0	8,737	21,008	19,798
2013	4	531	162	346	35,646	7,111	0	0	8,737	7,111	26,909
2014	5	644	201	423	40,927	5,281	0	0	8,737	5,281	32,190
2015	6	719	226	473	49,422	8,495	0	0	8,737	8,495	40,685
2016	7	923	275	599	60,556	11,134	0	0	8,737	11,134	51,819
2017	8	776	217	497	63,898	3,342	0	0	8,737	3,342	55,161
2018	9	572	166	369	46,021	-17,878	0	0	8,737	-17,878	37,283
2019	10	769	221	495	63,186	17,165	0	0	8,737	17,165	54,448
2020	11	898	262	580	71,835	8,650	0	0	8,737	8,650	63,098
2021	12	615	178	396	60,973	-10,862	0	0	8,737	-10,862	52,236
2022	13	273	83	178	13,197	-47,776	0	0	8,737	-47,776	4,460
2023	14	321	99	210	15,466	2,269	0	0	8,737	2,269	6,729
2024	15	510	153	332	28,980	13,514	0	0	8,737	13,514	20,243
2025	16	408	135	271	32,800	3,820	0	0	8,737	3,820	24,063
2026	17	224	71	147	18,348	-14,451	0	0	8,737	-14,451	9,612
2027	18	364	112	238	27,852	9,504	0	0	8,737	9,504	19,116
2028	19	493	155	324	38,470	10,618	0	0	8,737	10,618	29,734
2029	20	552	170	361	43,471	5,001	0	0	8,737	5,001	34,735
TOTAL										0	100,655



2. Forest Conservation

Forest conservation

Area

Year	Area(ha)							
	S1	S2	S3	S4	S5	S6	S7	S8
1999	40.05	41.00	22.00	85.00	7.50	20.00	19.00	52.00
2009	30.05	31.17	16.36	64.48	5.59	15.16	14.05	38.30

Year	estimate of the deforestation rate reduction							
	S1	S2	S3	S4	S5	S6	S7	S8
1	10%	10%	10%	10%	10%	10%	10%	10%
2	20%	20%	20%	20%	20%	20%	20%	20%
3	30%	30%	30%	30%	30%	30%	30%	30%
4	40%	40%	40%	40%	40%	40%	40%	40%
5	50%	50%	50%	50%	50%	50%	50%	50%
6	60%	60%	60%	60%	60%	60%	60%	60%
7	70%	70%	70%	70%	70%	70%	70%	70%
8	80%	80%	80%	80%	80%	80%	80%	80%
9	90%	90%	90%	90%	90%	90%	90%	90%
10	100%	100%	100%	100%	100%	100%	100%	100%

Baseline

Year	Area(ha)							
	S1	S2	S3	S4	S5	S6	S7	S8
2009	30.05	31.17	16.36	64.48	5.59	15.16	14.05	38.30
2010	29.05	30.19	15.80	62.43	5.40	14.68	13.56	36.93
2011	28.05	29.20	15.23	60.38	5.21	14.19	13.06	35.56
2012	27.05	28.22	14.67	58.32	5.02	13.71	12.57	34.19
2013	26.05	27.24	14.10	56.27	4.83	13.22	12.07	32.82
2014	25.05	26.26	13.54	54.22	4.64	12.74	11.58	31.45
2015	24.05	25.27	12.98	52.17	4.44	12.26	11.08	30.08
2016	23.05	24.29	12.41	50.12	4.25	11.77	10.59	28.71
2017	22.05	23.31	11.85	48.06	4.06	11.29	10.09	27.34
2018	21.05	22.32	11.28	46.01	3.87	10.80	9.60	25.97
2019	20.05	21.34	10.72	43.96	3.68	10.32	9.10	24.60
2020	19.05	20.36	10.16	41.91	3.49	9.84	8.61	23.23
2021	18.05	19.37	9.59	39.86	3.30	9.35	8.11	21.86
2022	17.05	18.39	9.03	37.80	3.11	8.87	7.62	20.49
2023	16.05	17.41	8.46	35.75	2.92	8.38	7.12	19.12
2024	15.05	16.43	7.90	33.70	2.73	7.90	6.63	17.75
2025	14.05	15.44	7.34	31.65	2.53	7.42	6.13	16.38
2026	13.05	14.46	6.77	29.60	2.34	6.93	5.64	15.01
2027	12.05	13.48	6.21	27.54	2.15	6.45	5.14	13.64
2028	11.05	12.49	5.64	25.49	1.96	5.96	4.65	12.27
2029	10.05	11.51	5.08	23.44	1.77	5.48	4.15	10.90

Project

Year	Area(ha)							
	S1	S2	S3	S4	S5	S6	S7	S8
2009	30.05	31.17	16.36	64.48	5.59	15.16	14.05	38.30
2010	29.15	30.29	15.85	62.63	5.42	14.72	13.60	37.07
2011	28.35	29.50	15.40	60.99	5.27	14.34	13.21	35.97
2012	27.65	28.81	15.01	59.56	5.13	14.00	12.86	35.01
2013	27.05	28.22	14.67	58.32	5.02	13.71	12.57	34.19
2014	26.55	27.73	14.39	57.30	4.92	13.47	12.32	33.51
2015	26.15	27.34	14.16	56.48	4.85	13.27	12.12	32.96
2016	25.85	27.04	13.99	55.86	4.79	13.13	11.97	32.55
2017	25.65	26.84	13.88	55.45	4.75	13.03	11.87	32.27
2018	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2019	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2020	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2021	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2022	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2023	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2024	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2025	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2026	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2027	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2028	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14
2029	25.55	26.75	13.82	55.25	4.73	12.98	11.82	32.14

Year	DF(ha)							
	S1	S2	S3	S4	S5	S6	S7	S8
2009	-	-	-	-	-	-	-	-
2010	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2011	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2012	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2013	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2014	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2015	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2016	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2017	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2018	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2019	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2020	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2021	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2022	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2023	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2024	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2025	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2026	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2027	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37
2028	1.00	0.98	0.56	2.05	0.19	0.48	0.50	1.37
2029	1.00	0.98	0.56	2.05	0.19	0.48	0.49	1.37

Year	DF(ha)							
	S1	S2	S3	S4	S5	S6	S7	S8
2009	-	-	-	-	-	-	-	-
2010	0.90	0.88	0.51	1.85	0.17	0.44	0.45	1.23
2011	0.80	0.79	0.45	1.64	0.15	0.39	0.40	1.10
2012	0.70	0.69	0.39	1.44	0.13	0.34	0.35	0.96
2013	0.60	0.59	0.34	1.23	0.11	0.29	0.30	0.82
2014	0.50	0.49	0.28	1.03	0.10	0.24	0.25	0.68
2015	0.40	0.39	0.23	0.82	0.08	0.19	0.20	0.55
2016	0.30	0.29	0.17	0.62	0.06	0.15	0.15	0.41
2017	0.20	0.20	0.11	0.41	0.04	0.10	0.10	0.27
2018	0.10	0.10	0.06	0.21	0.02	0.05	0.05	0.14
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2024	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Forest conservation Baseline

Year	0.540000			0.760000			0.540000			0.540000			0.540000			0.540000			
Age	Tree volume (m ³ /ha)	Above ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	
2009-2010	0	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2010-2011	1	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2011-2012	2	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2012-2013	3	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2013-2014	4	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2014-2015	5	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2015-2016	6	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2016-2017	7	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2017-2018	8	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2018-2019	9	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2019-2020	10	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2020-2021	11	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2021-2022	12	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2022-2023	13	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2023-2024	14	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2024-2025	15	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2025-2026	16	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2026-2027	17	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2027-2028	18	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2028-2029	19	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35
2029-2030	20	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35	330.0	112.2	0.35

Forest conservation Baseline

Strata S1: *Eucalyptus deglupta*

Parameters

Bulk density ¹⁾	WD	0.34 t.d./m ³
Biomass expansion factor ²⁾	BEF	1.50
Tree volume	SV	330.00 m ³ /ha
Ratio of belowground biomass to aboveground biomass ³⁾	R	0.35

	Forest age (Year)	Tree volume (m ³ /ha)	Area (ha)	Aboveground biomass (t.d./ha)	carbon stock in aboveground (tC/ha)	Belowground biomass (t.d./ha)	carbon stock in belowground (tC/ha)	Carbon stocks (tC/ha)	CO2 stocks (t-CO ₂)	Net GHG emission (t-CO ₂ /y)
	(Year)	SV (m ³ /ha)	A _{BCL} (ha)	TU _A (t.d./ha)	BT _A (tC/ha)	TU _B (t.d./ha)	BT _B (tC/ha)	BT(BT _A +BT _B) (tC/ha)	Σ Δ C _{BSL} (t-CO ₂)	ΔC _{BSL} (t-CO ₂ /y)
2009-2010	0	330.00	30.05	168.30	84.15	58.91	29.45	113.60	12,517	-
2010-2011	1	330.00	29.05	168.30	84.15	58.91	29.45	113.60	12,101	417
2011-2012	2	330.00	28.05	168.30	84.15	58.91	29.45	113.60	11,684	417
2012-2013	3	330.00	27.05	168.30	84.15	58.91	29.45	113.60	11,267	417
2013-2014	4	330.00	26.05	168.30	84.15	58.91	29.45	113.60	10,851	417
2014-2015	5	330.00	25.05	168.30	84.15	58.91	29.45	113.60	10,434	417
2015-2016	6	330.00	24.05	168.30	84.15	58.91	29.45	113.60	10,018	417
2016-2017	7	330.00	23.05	168.30	84.15	58.91	29.45	113.60	9,601	417
2017-2018	8	330.00	22.05	168.30	84.15	58.91	29.45	113.60	9,185	417
2018-2019	9	330.00	21.05	168.30	84.15	58.91	29.45	113.60	8,768	417
2019-2020	10	330.00	20.05	168.30	84.15	58.91	29.45	113.60	8,352	417
2020-2021	11	330.00	19.05	168.30	84.15	58.91	29.45	113.60	7,935	417
2021-2022	12	330.00	18.05	168.30	84.15	58.91	29.45	113.60	7,519	417
2022-2023	13	330.00	17.05	168.30	84.15	58.91	29.45	113.60	7,102	417
2023-2024	14	330.00	16.05	168.30	84.15	58.91	29.45	113.60	6,686	417
2024-2025	15	330.00	15.05	168.30	84.15	58.91	29.45	113.60	6,269	417
2025-2026	16	330.00	14.05	168.30	84.15	58.91	29.45	113.60	5,852	417
2026-2027	17	330.00	13.05	168.30	84.15	58.91	29.45	113.60	5,436	417
2027-2028	18	330.00	12.05	168.30	84.15	58.91	29.45	113.60	5,019	417
2028-2029	19	330.00	11.05	168.30	84.15	58.91	29.45	113.60	4,603	417
2029-2030	20	330.00	10.05	168.30	84.15	58.91	29.45	113.60	4,186	417

Sources

¹⁾ LULUCF Table 3A.1.9-2

²⁾ LULUCF Table 3A.1.10

³⁾ LULUCF Table 3A.1.8

Forest conservation Project

WD (Ld,mm3)		0.340000				0.750000				0.540000				0.540000				0.540000			
Year	Age	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass	Tree volume (m ³ /ha)	Above-ground biomass (t/ha)	Ratio of belowground biomass to aboveground biomass		
2005-2010	0	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2011-2011	1	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2012-2012	2	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2013-2013	3	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2014-2014	4	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2015-2015	5	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2016-2016	6	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2017-2017	7	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2018-2018	8	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2019-2019	9	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2020-2020	10	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2021-2021	11	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2022-2022	12	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2023-2023	13	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2024-2024	14	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2025-2025	15	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2026-2026	16	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2027-2027	17	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2028-2028	18	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2029-2029	19	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		
2030-2030	20	330.0	112.2	0.35	264.0	200.6	0.26	268.5	145.0	0.26	268.5	145.0	0.26	201.8	109.0	0.26	201.8	109.0	0.26		

Forest conservation Project

Strata S1: *Eucalyptus deglupta*

Parameters

Bulk density ¹⁾	WD	0.34 t.d./m ³
Biomass expansion factor ²⁾	BEF	1.50
Tree volume	SV	330.00 m ³ /ha
Ratio of belowground biomass to aboveground biomass ³⁾	R	0.35

	Forest age (Year)	Tree volume (m ³ /ha)	Area (ha)	Aboveground biomass (t.d./ha)	NT _A (tC/ha)	Belowground biomass (t.d./ha)	carbon stock in belowground (tC/ha)	Carbon stocks NT(NT _A +NT _B) (tC/ha)	CO ₂ stocks C _{PRJ} (t-CO ₂)	Net GHG emission ΔC _{PRJ} (t-CO ₂ /y)
2009-2010	0	330.00	30.05	168.30	84.15	58.91	29.45	113.60	12,517	-
2010-2011	1	330.00	29.15	168.30	84.15	58.91	29.45	113.60	12,142	375
2011-2012	2	330.00	28.35	168.30	84.15	58.91	29.45	113.60	11,809	333
2012-2013	3	330.00	27.65	168.30	84.15	58.91	29.45	113.60	11,517	292
2013-2014	4	330.00	27.00	168.30	84.15	58.91	29.45	113.60	11,267	250
2014-2015	5	330.00	26.55	168.30	84.15	58.91	29.45	113.60	11,059	208
2015-2016	6	330.00	26.15	168.30	84.15	58.91	29.45	113.60	10,893	167
2016-2017	7	330.00	25.85	168.30	84.15	58.91	29.45	113.60	10,768	125
2017-2018	8	330.00	25.65	168.30	84.15	58.91	29.45	113.60	10,684	83
2018-2019	9	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	42
2019-2020	10	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2020-2021	11	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2021-2022	12	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2022-2023	13	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2023-2024	14	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2024-2025	15	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2025-2026	16	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2026-2027	17	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2027-2028	18	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2028-2029	19	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-
2029-2030	20	330.00	25.55	168.30	84.15	58.91	29.45	113.60	10,643	-

Sources

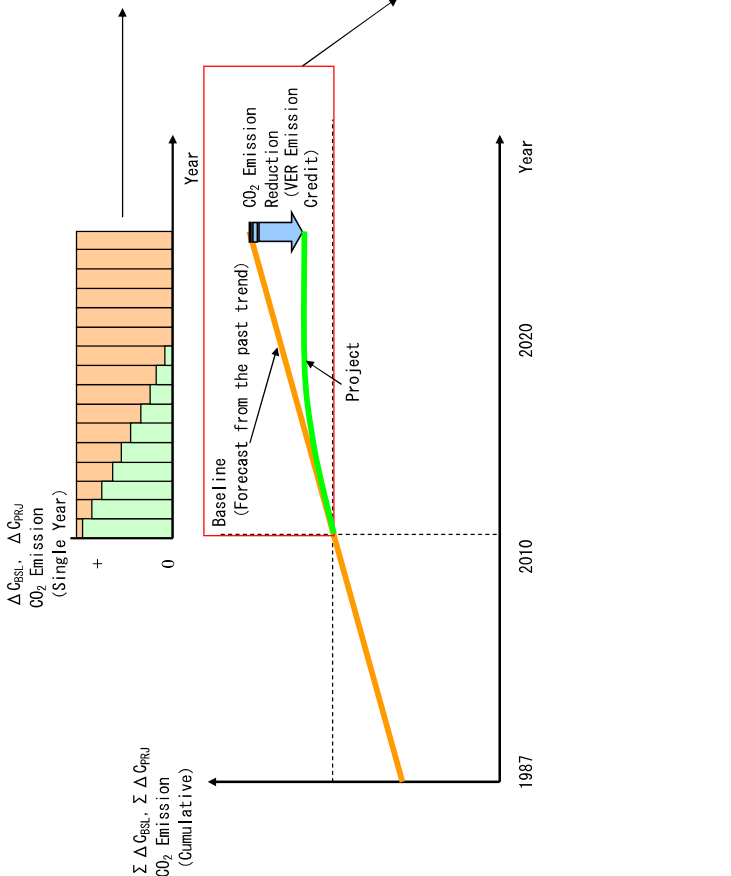
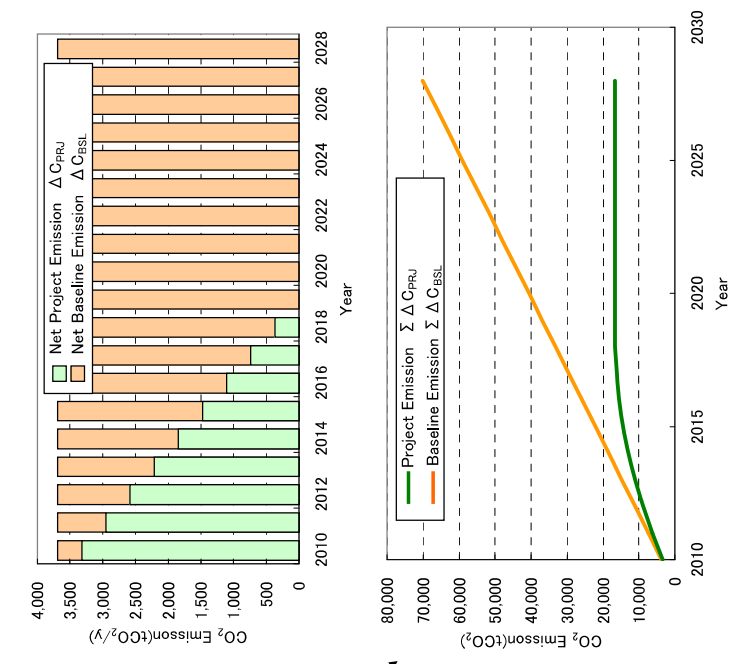
¹⁾ LULUCF Table 3A.1.9-2

²⁾ LULUCF Table 3A.1.10

³⁾ LULUCF Table 3A.1.8

IPCC Table 3A.1.10, Tropical/Broadleaf/average.

Forest conservation Result



Forest conservation anthropogenic GHG reduction		
Year	Forest age (year)	Net anthropogenic GHG reduction ER _{RED} (t CO ₂ -y)
2009	0	0
2010	1	369
2011	2	738
2012	3	1,106
2013	4	1,475
2014	5	1,844
2015	6	2,213
2016	7	2,582
2017	8	2,950
2018	9	3,319
2019	10	3,688
2020	11	3,688
2021	12	3,688
2022	13	3,688
2023	14	3,688
2024	15	3,688
2025	16	3,688
2026	17	3,688
2027	18	3,688
2028	19	3,688
2029	20	3,688
TOTAL	-	53,476

Project		Forest age (year)	carbon stock in aboveground (tC/ha)	NT _A	carbon stock in belowground (tC/ha)	NT _B	Carbon stocks (C/ha)	NT(NT _A +NT _B)	CO ₂ stocks (t-CO ₂)	Net Project GHG emission (tCO ₂ -y)	Cumulative (tCO ₂)
Year											
2009	0	850	236	111,893	0	0	0	0	0	0	0
2010	1	850	236	108,205	3,688	3,688	108,574	3,319	3,319	3,319	3,319
2011	2	850	236	104,517	7,376	7,376	105,624	2,950	2,950	6,270	6,270
2012	3	850	236	100,829	11,064	11,064	103,042	2,582	2,582	8,851	8,851
2013	4	850	236	97,141	14,752	14,752	100,829	2,213	2,213	11,064	11,064
2014	5	850	236	93,453	18,440	18,440	98,985	1,844	1,844	12,908	12,908
2015	6	850	236	89,765	22,128	22,128	97,510	1,475	1,475	14,383	14,383
2016	7	850	236	86,077	25,816	25,816	96,404	1,106	1,106	15,490	15,490
2017	8	850	236	82,389	29,504	29,504	95,666	738	738	16,227	16,227
2018	9	850	236	78,701	33,192	33,192	95,297	369	369	16,596	16,596
2019	10	850	236	75,013	36,880	36,880	95,297	0	0	16,596	16,596
2020	11	850	236	71,325	40,568	40,568	95,297	0	0	16,596	16,596
2021	12	850	236	67,637	44,256	44,256	95,297	0	0	16,596	16,596
2022	13	850	236	63,949	47,944	47,944	95,297	0	0	16,596	16,596
2023	14	850	236	60,261	51,632	51,632	95,297	0	0	16,596	16,596
2024	15	850	236	56,573	55,320	55,320	95,297	0	0	16,596	16,596
2025	16	850	236	52,885	59,008	59,008	95,297	0	0	16,596	16,596
2026	17	850	236	49,197	62,696	62,696	95,297	0	0	16,596	16,596
2027	18	850	236	45,509	66,384	66,384	95,297	0	0	16,596	16,596
2028	19	850	236	41,821	70,072	70,072	95,297	0	0	16,596	16,596
2029	20	850	236	38,133	73,760	73,760	95,297	0	0	16,596	16,596
TOTAL	-	-	-	-	-	-	-	-	-	16,596	-

Baseline		Forest age (year)	carbon stock in aboveground (tC/ha)	BT _A	carbon stock in belowground (tC/ha)	BT _B	Carbon stocks (C/ha)	BT(BT _A +BT _B)	CO ₂ stocks (t-CO ₂)	Net Baseline GHG emission (tCO ₂ -y)	Cumulative (tCO ₂)
Year											
2009	0	850	236	111,893	0	0	111,893	0	0	0	0
2010	1	850	236	108,205	3,688	3,688	108,205	3,688	3,688	3,688	3,688
2011	2	850	236	104,517	7,376	7,376	104,517	7,376	7,376	7,376	7,376
2012	3	850	236	100,829	11,064	11,064	100,829	11,064	11,064	11,064	11,064
2013	4	850	236	97,141	14,752	14,752	97,141	14,752	14,752	14,752	14,752
2014	5	850	236	93,453	18,440	18,440	93,453	18,440	18,440	18,440	18,440
2015	6	850	236	89,765	22,128	22,128	89,765	22,128	22,128	22,128	22,128
2016	7	850	236	86,077	25,816	25,816	86,077	25,816	25,816	25,816	25,816
2017	8	850	236	82,389	29,504	29,504	82,389	29,504	29,504	29,504	29,504
2018	9	850	236	78,701	33,192	33,192	78,701	33,192	33,192	33,192	33,192
2019	10	850	236	75,013	36,880	36,880	75,013	36,880	36,880	36,880	36,880
2020	11	850	236	71,325	40,568	40,568	71,325	40,568	40,568	40,568	40,568
2021	12	850	236	67,637	44,256	44,256	67,637	44,256	44,256	44,256	44,256
2022	13	850	236	63,949	47,944	47,944	63,949	47,944	47,944	47,944	47,944
2023	14	850	236	60,261	51,632	51,632	60,261	51,632	51,632	51,632	51,632
2024	15	850	236	56,573	55,320	55,320	56,573	55,320	55,320	55,320	55,320
2025	16	850	236	52,885	59,008	59,008	52,885	59,008	59,008	59,008	59,008
2026	17	850	236	49,197	62,696	62,696	49,197	62,696	62,696	62,696	62,696
2027	18	850	236	45,509	66,384	66,384	45,509	66,384	66,384	66,384	66,384
2028	19	850	236	41,821	70,072	70,072	41,821	70,072	70,072	70,072	70,072
2029	20	850	236	38,133	73,760	73,760	38,133	73,760	73,760	73,760	73,760
TOTAL	-	-	-	-	-	-	-	-	-	70,072	-