sCreen

Fast track estimation of carbon benefits from forestry activities

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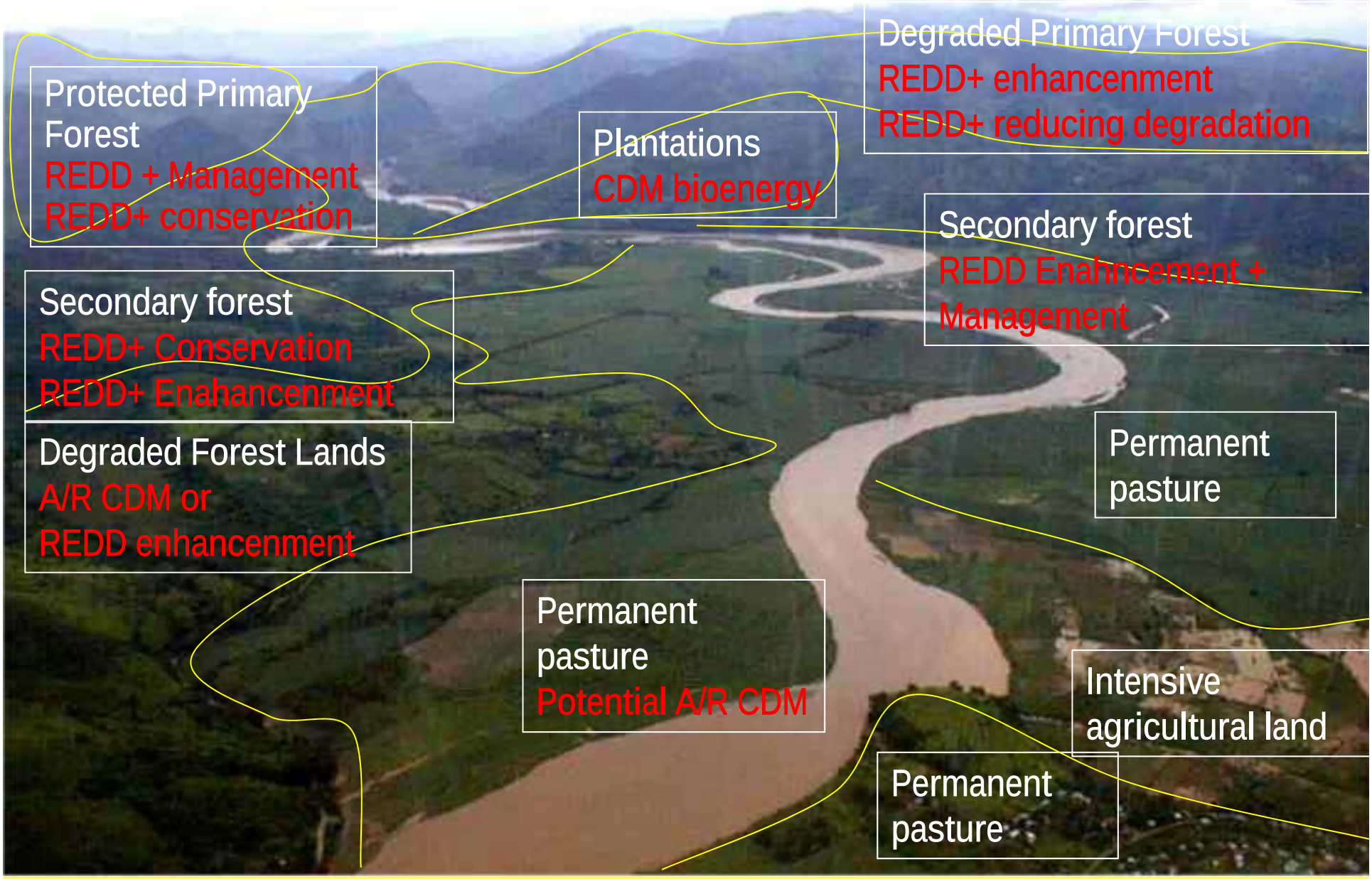
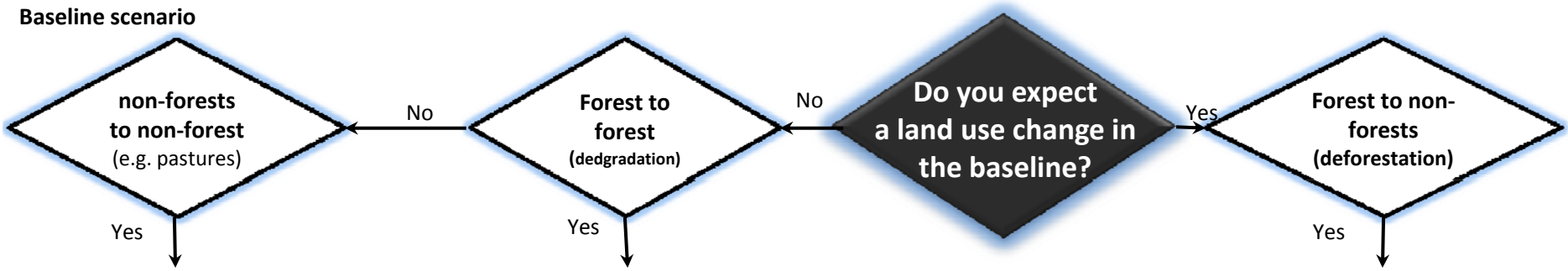
Ecoexistence

ITTO International Tropical Timber Organization
Sustaining Tropical Forests

The landscape reality…

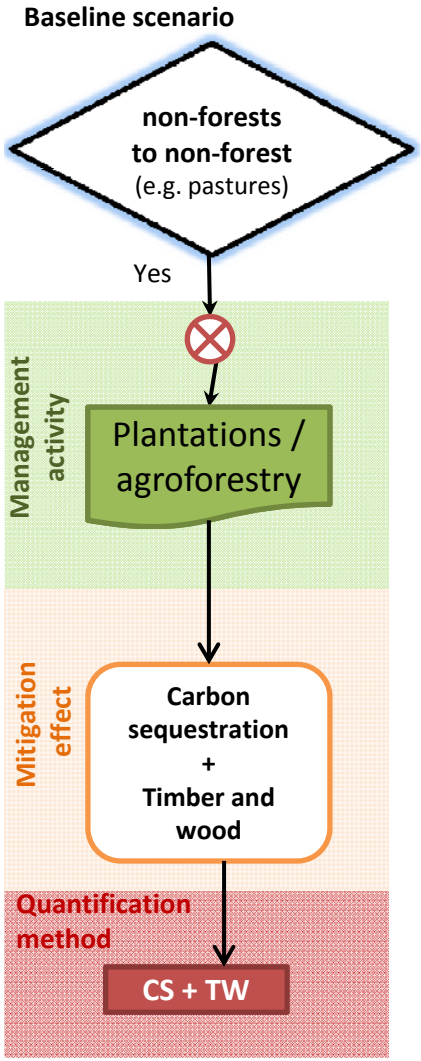
Do we really need 6 different accounting systems?





What would have happened without the intervention?

→ Expert guess for continuation of the historical trend

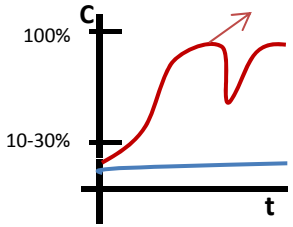


Baseline/RL/REL

Intervention (management activity)

Methods:

- Carbon Sequestration (CS)
- Timber and Wood products (TW)



Carbon in the baseline

Timber and wood products go out of the system

Baseline scenario

non-forests to non-forest (e.g. pastures)

No

Forest to forest (dedgradation)

Yes

Yes

Management activity

Restoration

SFM

Conservation

Mitigation effect

Carbon enhancenment

GHG Emission Reduction (1) + Timber and wood

GHG Emission Reduction (1)

Quantification method

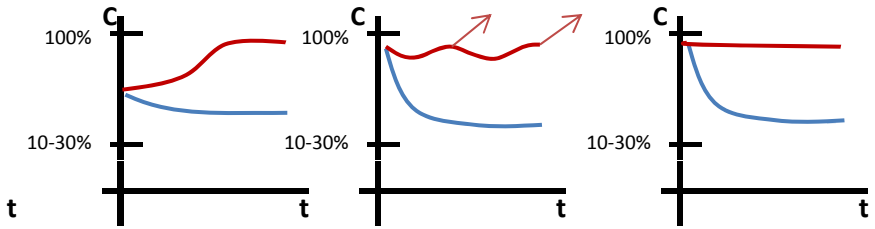
1 CE

3 ER_1 + TW

2 ER_1

Methods:

1. Carbon enhancement (CE)
2. GHG emission from degradation (ER1)
3. Timber and wood products (TW)

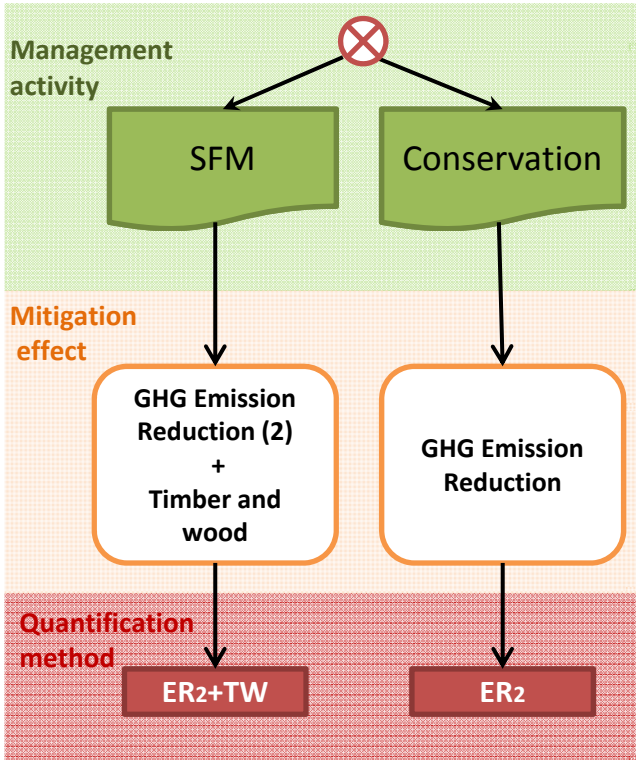


Carbon in the baseline

Carbon in the proposed management

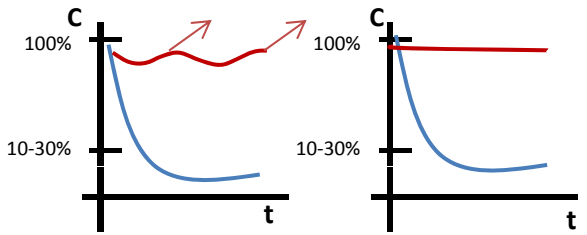
Timber and wood products go out of the system

Baseline scenario



Methods:

- GHG emission reduction from deforestation (ER2)
- Timber and wood products

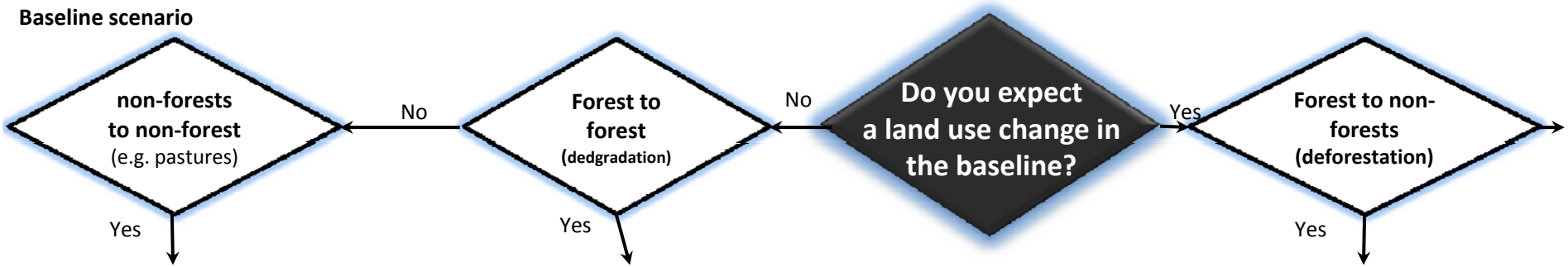


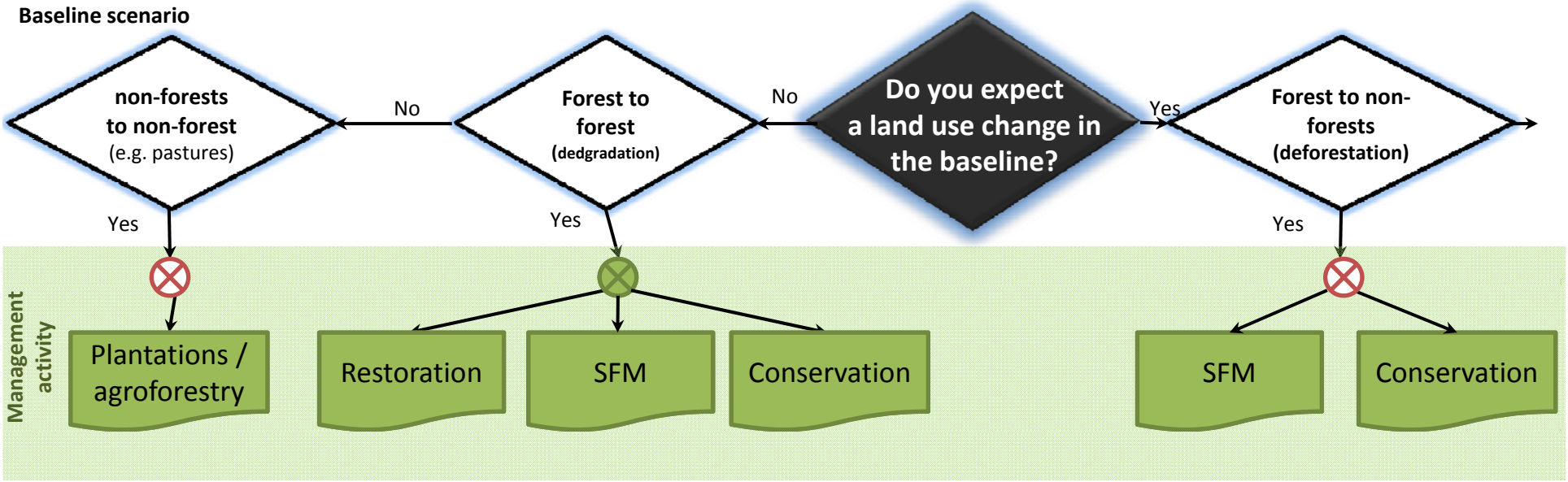
Carbon in the baseline

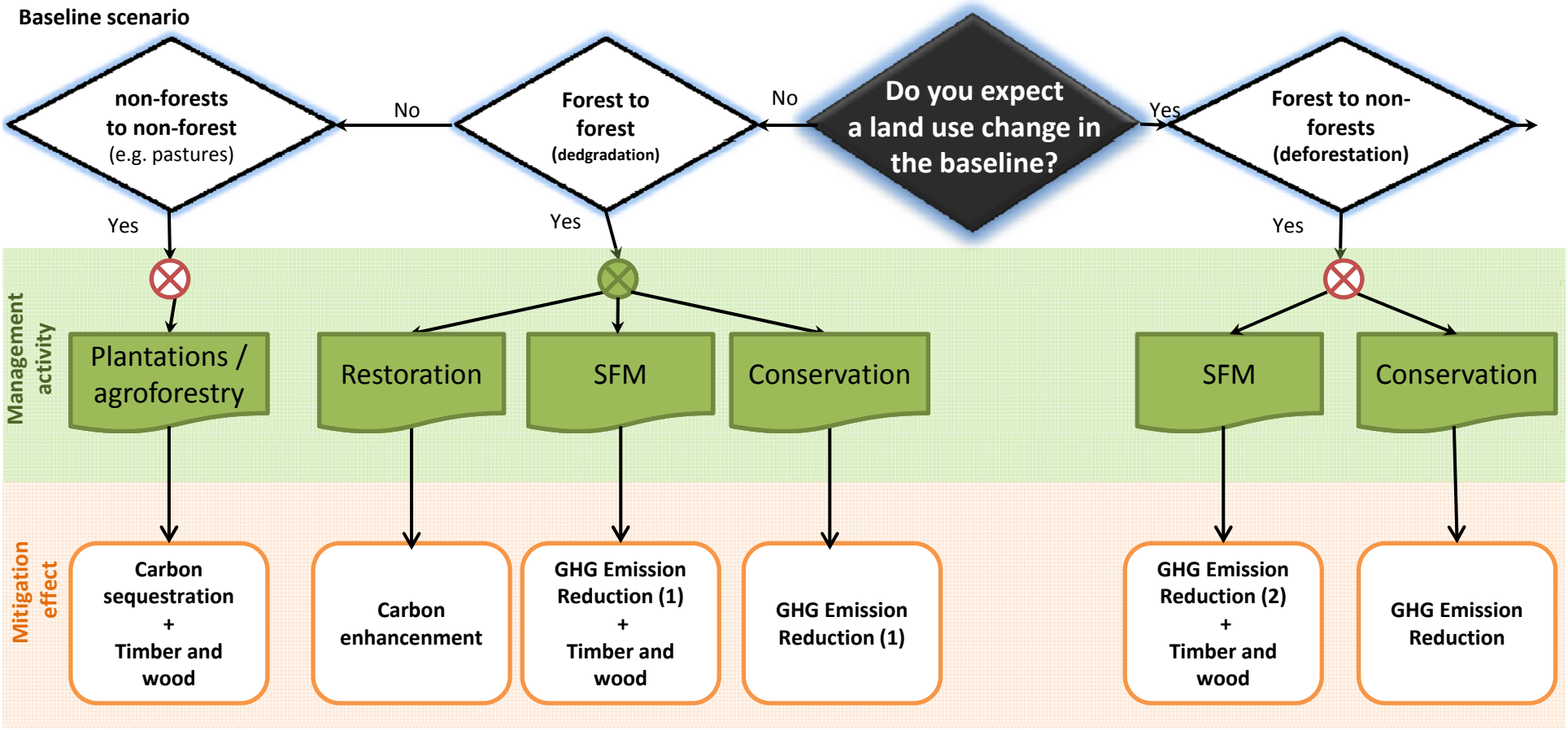
Carbon in the proposed management

Timber and wood products go out of the system

Baseline scenario




Baseline scenario
Do you expect a land use change in the baseline?
No
non-forests to non-forest (e.g. pastures)
Forest to forest (dedgradation)
No
Yes
Forest to non-forests (deforestation)
Yes
Yes
Yes
Management activity
Plantations / agroforestry
Restoration
SFM
Conservation
SFM
Conservation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Forest to non-forests (deforestation)
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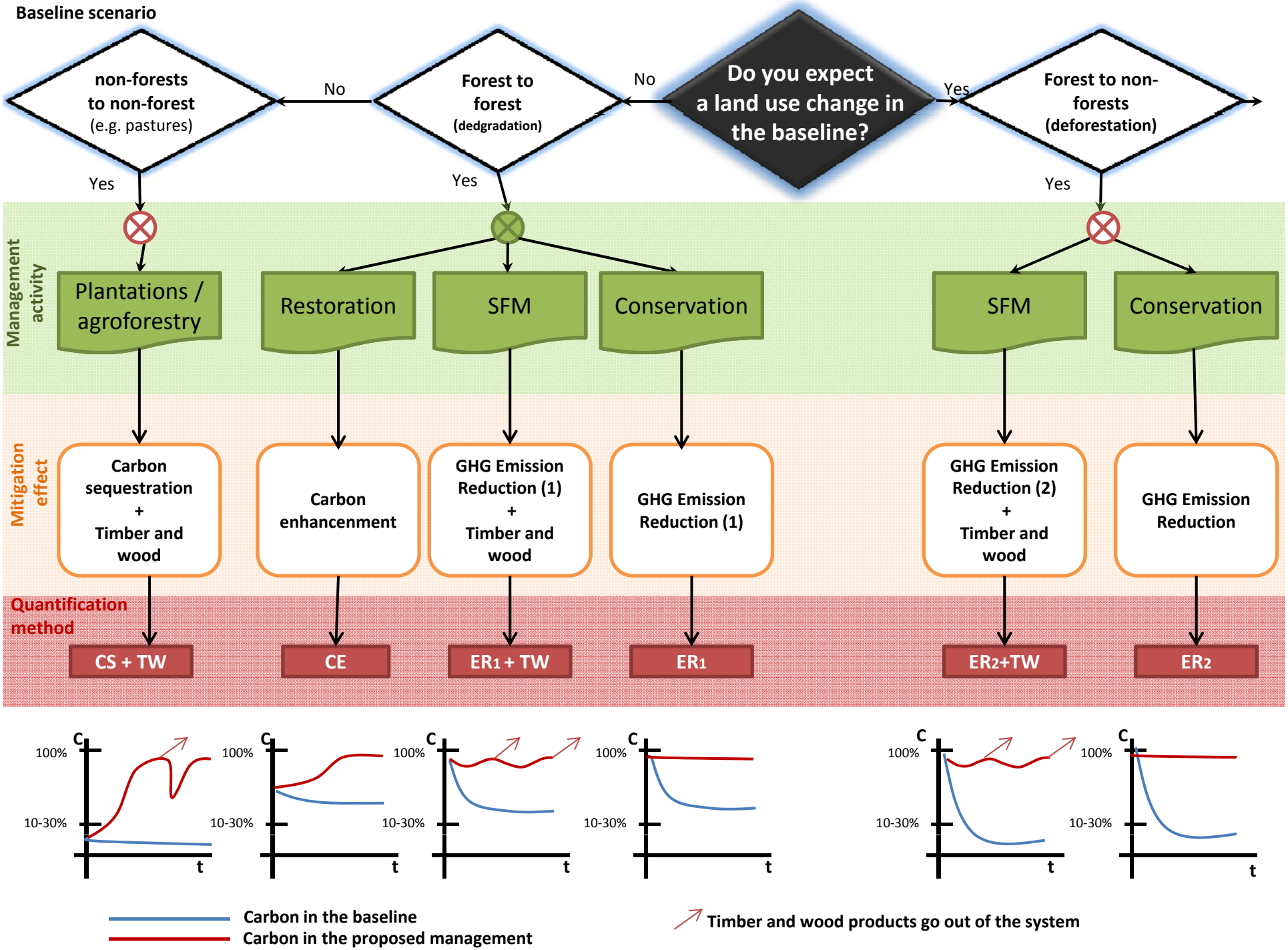
Management activity
Plantations / agroforestry
Restoration
SFM
Conservation
SFM
Conservation
Mitigation effect
Carbon sequestration + Timber and wood
Carbon enhancenment
GHG Emission Reduction (1) + Timber and wood
GHG Emission Reduction (1)
GHG Emission Reduction (2) + Timber and wood
GHG Emission Reduction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No
Forest to forest (dedgradation)
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GHG Emission Reduction (1) + Timber and wood
GHG Emission Reduction (1)
GHG Emission Reduction (2) + Timber and wood
GHG Emission Reduction
Quantification method
CS + TW
CE
ER1 + TW
ER1
ER2+TW
ER2
C
100%
10-30%
t
Carbon in the baseline
Carbon in the proposed management
Timber and wood products go out of the system

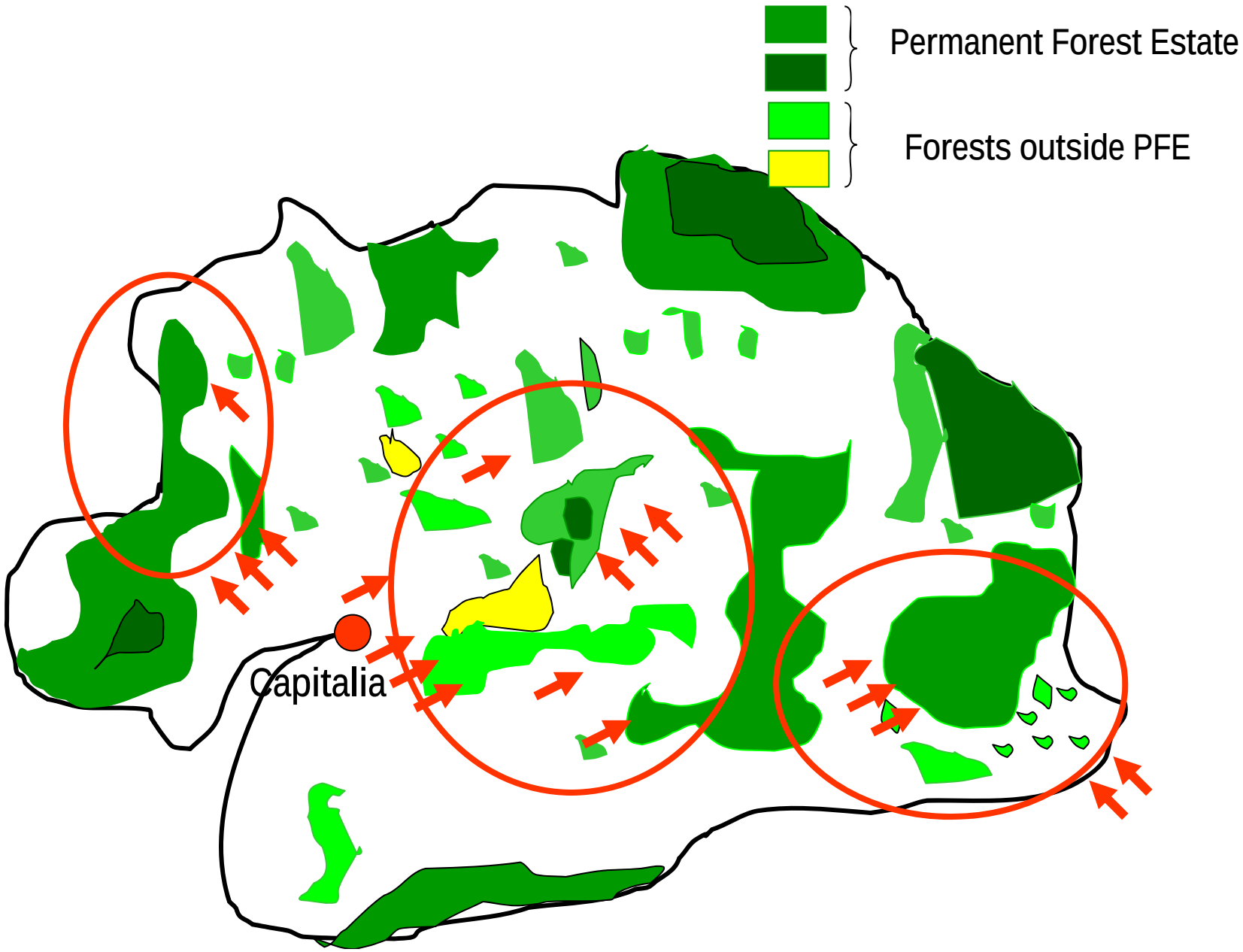
sCreen includes

- 5 methods
  1. Carbon sequestration (CS)
  2. Carbon enhancement (CE)
  3. GHG emissions from degradation (ER1)
  4. GHG emissions from deforestation (ER2)
  5. Timber and wood products
- Treatment of leakages
- Also data requirements, considerations for stratification, consideration of time frame, consideration of biodiversity
- Results of **sCreen** are approximations aimed at clarifying potential carbon benefits in an easy manner.

General assumptions and clarifications

- ✓ **Historical trend** as the starting point for the reference scenario
- ✓ The methods consider **living biomass** (aboveground and belowground biomass). If litter, dead wood or soil organic carbon of these three pools is consider as potential significant emitter, other methods should be used.
- ✓ Potential carbon benefits from timber and wood products are accounted for separately through a specific method.
- ✓ Considers two degradation drivers: firewood/wood gathering and illegal logging.
- ✓ We estimate carbon stock changes, following the IPCC guidance. Positive values imply increase in carbon stocks, negative values imply decrease in carbon stocks (i.e. deforestation and degradation have negative values)
- ✓ Data (following IPCC tiers):
  - ✓ When available local values, if not
  - ✓ National data, if not
  - ✓ IPCC default values (GPG-LULUCF or 2006 Inventory guidelines)

Cuzaland: Different Areas – different drivers



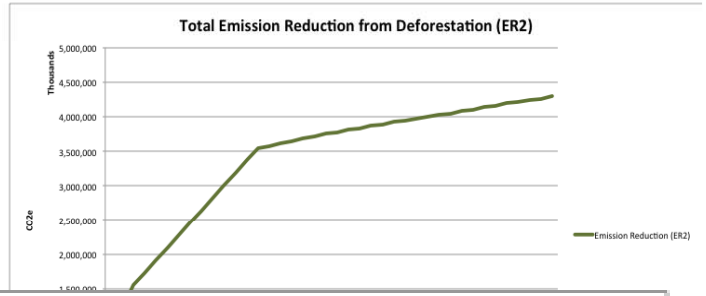
Deforestation - Intact forest	**Hectares In million**
Extension of agricultural and livestock frontier (cover 90%)	15
Extension of agricultural and livestock frontier 2 (cover 70%)	12
Settlement (cover 90%)	1
Mega-infrastructre (e.g. dams) (cover 100%)	3
Degradation - Intact forest	
Illegal croping (cover 90%)	3
Illegal logging (cover 100%)	5
Firewood gathering 1 (Cover 90%)	1.2
Degradation - secundary forest	
Illegal crops (cover 70%)	0,50
Illegal logging (cover 70%)	2
Firewood gathering 1 (cover 60%)	3
Firewood and buidling wood gathering (Cover 50%)	10
Forest apt areas (plantations and agroforestry)	
Abandoned pastures	3
Biodiversity buffers (Rehabilitation)	10
Watersheds (Agroforesty)	1
Agricultural land (silvopastoral systems)	0,75

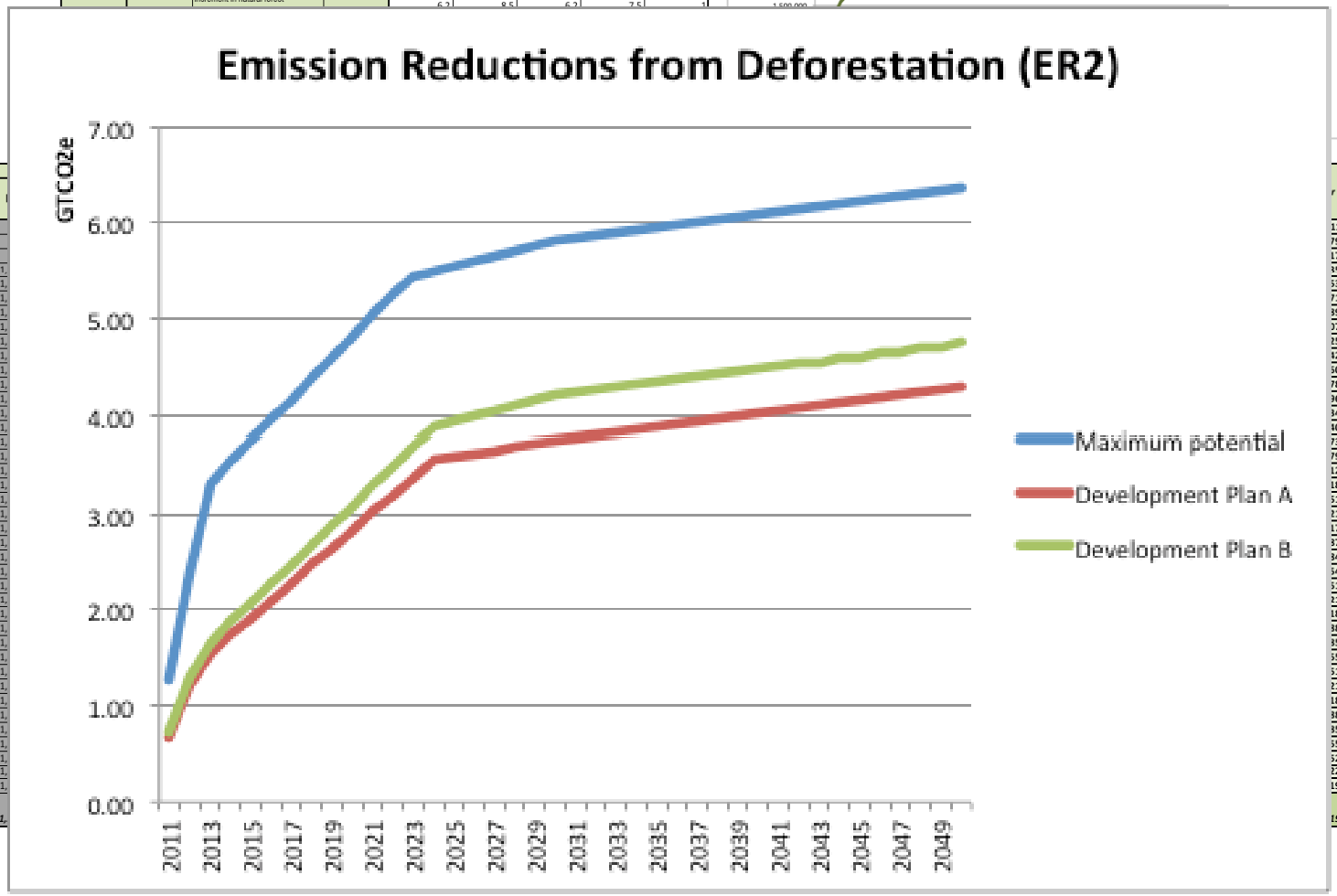
		Management options		
Deforestation - Intact forest	**Hectares**	**0 emissions**	**Development Plan A**	**Development Plan B**
Extension of agricultural and livestock frontier (cover 90%)	15,000,000	Conservation	Conservation	SFM
Extension of agricultural and livestock frontier 2 (cover 70%)	12,000,000	Conservation	SFM	Extension of agricultural &livestock frontier
Settlement (cover 90%)	1,000,000	No settlement	Settlement with reduced impact	No settlement
Mega-infrastructre (e.g. dams) (cover 100%)	3,000,000	No infrastructre	Mega-infrastructure	Reduced mega-infrastructure (70%)
Degradation - Intact forest				
Illegal croping (cover 90%)	3,000,000	No illegal activities	No illegal activites	Illegal activites at 20%
Illegal logging (cover 100%)	5,000,000	No illegal activities	Enrichment & conservation	Enrichment & SFM
Firewood gathering 1 (Cover 90%)	1,200,000	no firewood	cookstoves	Sustainable cookstove wood
Degradation - secundary forest		**0 emissions**	**Development Plan A**	**Development Plan B**
Illegal croping (cover 70%)	500,000	No illegal activities	No illegal activites	Illegal activites at 20%
Illegal logging (cover 70%)	2,000,000	No illegal activities	Conservation	SFM
Firewood gathering 1 (cover 60%)	3,000,000	no firewood	cookstoves	cookstove to 80%
Firewood and buidling wood gathering (Cover 50%)	10000000	no firewood/building materials	Cookstoves and reduced logging	Cookstoves and reduced logging
Forest apt areas (plantations and agroforestry)		**0 emissions**	**Development Plan A**	**Development Plan B**
Abandoned pastures	3,000,000	100% planted in 5 years	100% planted in 10 years	100% planted in 15 years
Biodiversity buffers (Rehabilitation)	1,000,000	100% planted in 5 years	100% planted in 10 years	100% planted in 15 years
Watersheeds (Agroforesty)	1,000,000	100% planted in 5 years	100% planted in 10 years	100% planted in 15 years
Agricultural land (silvopastoral systems)	750,000	100% planted in 5 years	100% planted in 10 years	100% planted in 15 years

Identification	Screening REDD+ potential
Continent	Atlantis
Country	Cuzaland
Climate zone	Tropics

Method	Emission reduction on deforestation (ER2)

Method	For the equations			Your values	Your values	Your values	Your values	Your values
	Abb	Parameter/Constant name	Unit	Act. 1	Act. 2	Act. 3	Act. 4	Act. 5
Emissions reduction on degradation	AGBcc=100	Aboveground biomass per crown cover=100%	tonnes d.m.ha-1	280	250	280	270	1
	AGBbeg	Abovegroundbiomass at the beginning of the project	tonnes d.m.ha-1	252	175	252	270	0.01
	AGBcc=maxdef	Aboveground biomass for the remaining forest	tonnes d.m.ha-1	28	25	0	27	0.01
	AGBinc	Average annual increment in aboveground biomass	tonnes d.m.ha-1	13	7.2	13	10	1
	Rotation for SFM	time	years	0	8	31	0	3
	A	Area	ha	15000000	12000000	1000000	3000000	0
	RSR	Root-shoot ratio	dimensionless	1.24	1.27	1.24	1.21	1
	MAlman	Mean Annual Increment main spp increment in natural forest	m3ha-1yr-1	6.2	8.5	6.2	7.5	1





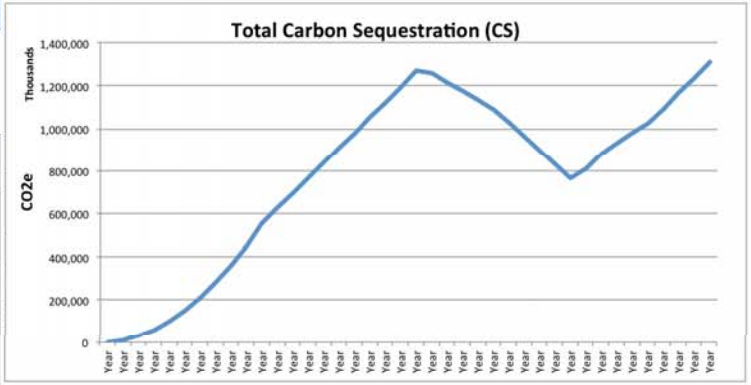
		Conservation on extension to agriculture on 90% Cover				
		Deforestation per year	Baseline	Growth-yield	SFM/Conservation activity	
1	Year 1	-14,581,879	8,562,994,121	442,494,000	9,020,070,000	
2	Year 2	-14,581,879	8,548,412,242	356,850,000	9,376,920,000	
3	Year 3	-14,581,879	8,533,830,362	356,850,000	9,530,640,000	
4	Year 4	-14,581,879	8,519,248,483	0	9,530,640,000	1,
5	Year 5	-14,581,879	8,504,666,604	0	9,530,640,000	1,
6	Year 6	-14,581,879	8,490,084,725	0	9,530,640,000	1,
7	Year 7	-14,581,879	8,475,502,846	0	9,530,640,000	1,
8	Year 8	-14,581,879	8,460,920,966	0	9,530,640,000	1,
9	Year 9	-14,581,879	8,446,339,087	0	9,530,640,000	1,
10	Year 10	-14,581,879	8,431,757,208	0	9,530,640,000	1,
11	Year 11	-14,581,879	8,417,175,329	0	9,530,640,000	1,
12	Year 12	-14,581,879	8,402,593,450	0	9,530,640,000	1,
13	Year 13	-14,581,879	8,388,011,570	0	9,530,640,000	1,
14	Year 14	-14,581,879	8,373,429,691	0	9,530,640,000	1,
15	Year 15	-14,581,879	8,358,847,812	0	9,530,640,000	1,
16	Year 16	-14,581,879	8,344,265,933	0	9,530,640,000	1,
17	Year 17	-14,581,879	8,329,684,054	0	9,530,640,000	1,
18	Year 18	-14,581,879	8,315,102,174	0	9,530,640,000	1,
19	Year 19	-14,581,879	8,300,520,295	0	9,530,640,000	1,
20	Year 20	-14,581,879	8,285,938,416	0	9,530,640,000	1,
21	Year 21	-14,581,879	8,271,356,537	0	9,530,640,000	1,
22	Year 22	-14,581,879	8,256,774,658	0	9,530,640,000	1,
23	Year 23	-14,581,879	8,242,192,778	0	9,530,640,000	1,
24	Year 24	-14,581,879	8,227,610,899	0	9,530,640,000	1,
25	Year 25	-14,581,879	8,213,029,020	0	9,530,640,000	1,
26	Year 26	-14,581,879	8,198,447,141	0	9,530,640,000	1,
27	Year 27	-14,581,879	8,183,865,262	0	9,530,640,000	1,
28	Year 28	-14,581,879	8,169,283,382	0	9,530,640,000	1,
29	Year 29	-14,581,879	8,154,701,503	0	9,530,640,000	1,
30	Year 30	-14,581,879	8,140,119,624	0	9,530,640,000	1,
31	Year 31	-14,581,879	8,125,537,745	0	9,530,640,000	1,
32	Year 32	-14,581,879	8,110,955,866	0	9,530,640,000	1,
33	Year 33	-14,581,879	8,096,373,986	0	9,530,640,000	1,
34	Year 34	-14,581,879	8,081,792,107	0	9,530,640,000	1,
35	Year 35	-14,581,879	8,067,210,228	0	9,530,640,000	1,
36	Year 36	-14,581,879	8,052,628,349	0	9,530,640,000	1,
37	Year 37	-14,581,879	8,038,046,470	0	9,530,640,000	1,
38	Year 38	-14,581,879	8,023,464,590	0	9,530,640,000	1,
39	Year 39	-14,581,879	8,008,882,711	0	9,530,640,000	1,
40	Year 40	-14,581,879	7,994,300,832	0	9,530,640,000	1,
	Total per activity					*1,*

r year
11,752
79,664
17,577
35,489
53,401
71,313
89,225
07,138
25,050
42,962
60,874
78,786
96,699
14,867
40,779
73,619
79,531
12,372
18,284
51,124
21,064
17,932
87,873
84,741
54,681
51,549
21,489
18,358
88,298
85,166
55,106
51,974
21,915
18,783
88,723
85,591
55,531
52,400
22,340
19,208
19,208

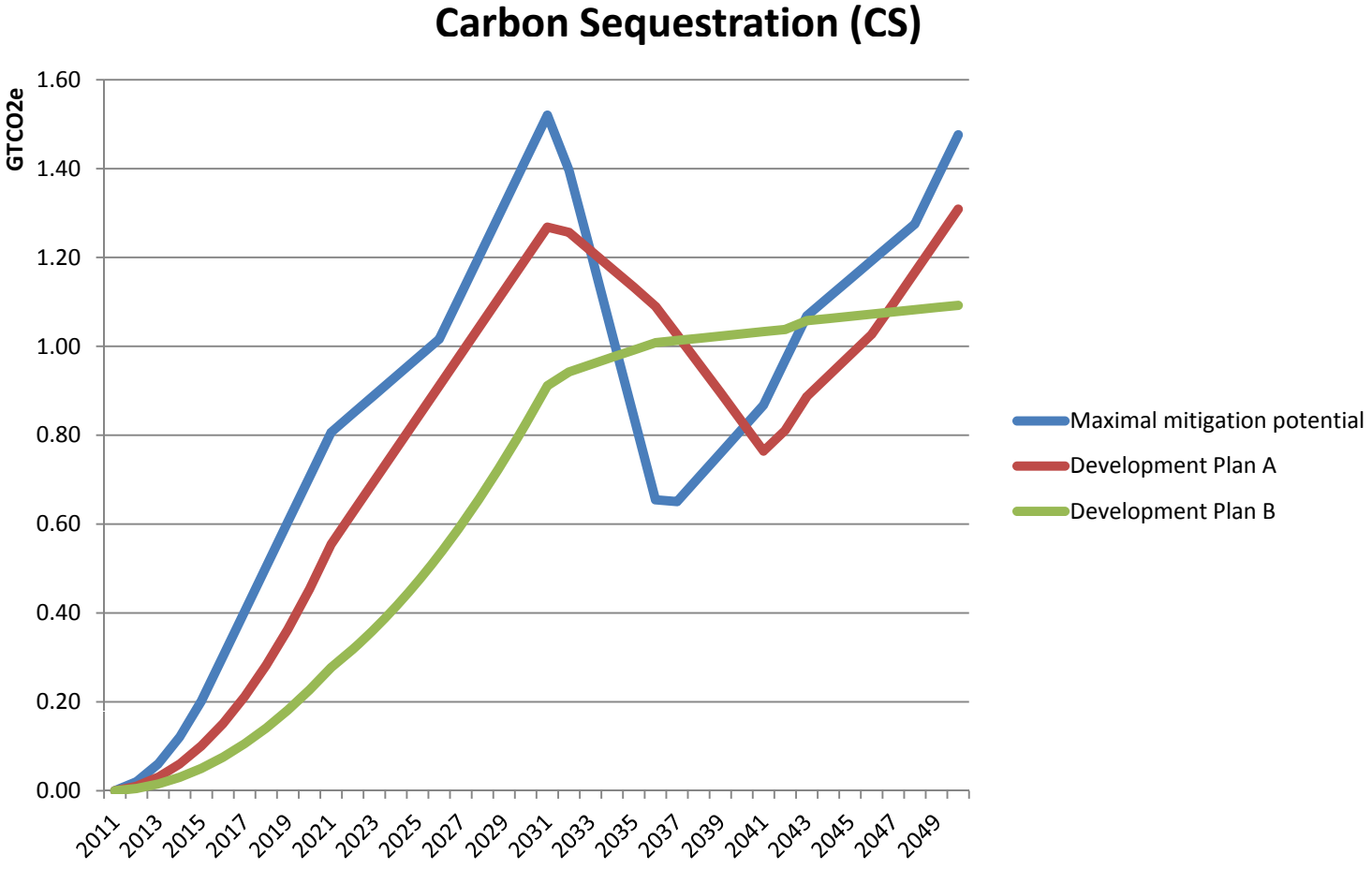
Identification	Screening REDD+ potential
Continent	Atlantis
Country	Cuzaland
Climate zone	Tropics

Method	rbon Sequestration (

Method	For the equations			Your values	Your values	Your values	Your values	Your values	Your values
	Abb	Parameter/Constant name	Unit	Act-1	Act-2	Act-3	Act-4	Act-5	Act-6
Carbon Sequestration OPTION 1	ABG_{PAF}	Aboveground biomass in plantations or agroforestry		300	150	234	80	35	
	$ABG_{PAFincrement}$	yearly increment in ABGpaf	tonnes d.d. ha-1yr-1	16	8	5	2.7	1.75	
	$CO2e\ max$	Maximum CO2e with this syystem and area	CO2e	1,004,670,000	502,335,000	543,839,400	175,680,000	58,125,375	0
	MAI	Mean annual increment	m3 yr-1	25	25	5	1.85	1.2	
	BEF	Biomass Expansion Factor	dimensionless	1.3	1.3	3.4	3.4	3.4	
	D	Density	tones d.m.m-3 merchantable volume	0.5	0.5	0.5	0.43	0.45	
	$Rotation$	time	years	20	10	40	25	25	0
	RSR	Root-shoot ratio							



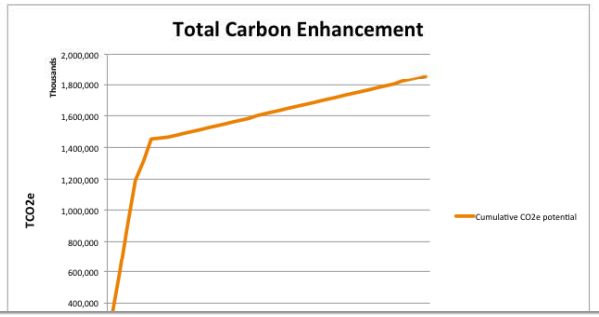
	Pinus patula	
OPTION 1	TCO2e unlimited potential	TCO2e net potential
Year 1	0	
Year 2	5,358,240	5,358,24
Year 3	16,074,720	16,074,72
Year 4	32,149,440	32,149,44
Year 5	53,582,400	53,582,40
Year 6	80,373,600	80,373,60
Year 7	112,523,040	112,523,04
Year 8	150,030,720	150,030,72
Year 9	192,896,640	192,896,64
Year 10	241,120,800	241,120,80
Year 11	294,703,200	294,703,20
Year 12	348,285,600	348,285,60
Year 13	401,868,000	401,868,00
Year 14	455,450,400	455,450,40
Year 15	509,032,800	509,032,80
Year 16	562,615,200	562,615,20
Year 17	616,197,600	616,197,60
Year 18	669,780,000	669,780,00
Year 19	723,362,400	723,362,40
Year 20	776,944,800	776,944,80
Year 21	830,527,200	830,527,20
Year 22	771,586,560	771,586,56
Year 23	712,645,920	712,645,92
Year 24	653,705,280	653,705,28
Year 25	594,764,640	594,764,64
Year 26	535,824,000	535,824,00
Year 27	476,883,360	476,883,36
Year 28	417,942,720	417,942,72
Year 29	359,002,080	359,002,08
Year 30	300,061,440	300,061,44
Year 31	241,120,800	241,120,80
Year 32	294,703,200	294,703,20
Year 33	348,285,600	348,285,60
Year 34	401,868,000	401,868,00
Year 35	455,450,400	455,450,40
Year 36	509,032,800	509,032,80
Year 37	562,615,200	562,615,20
Year 38	616,197,600	616,197,60
Year 39	669,780,000	669,780,00
Year 40	723,362,400	723,362,40
Total per activity in 40 years		723,362,40



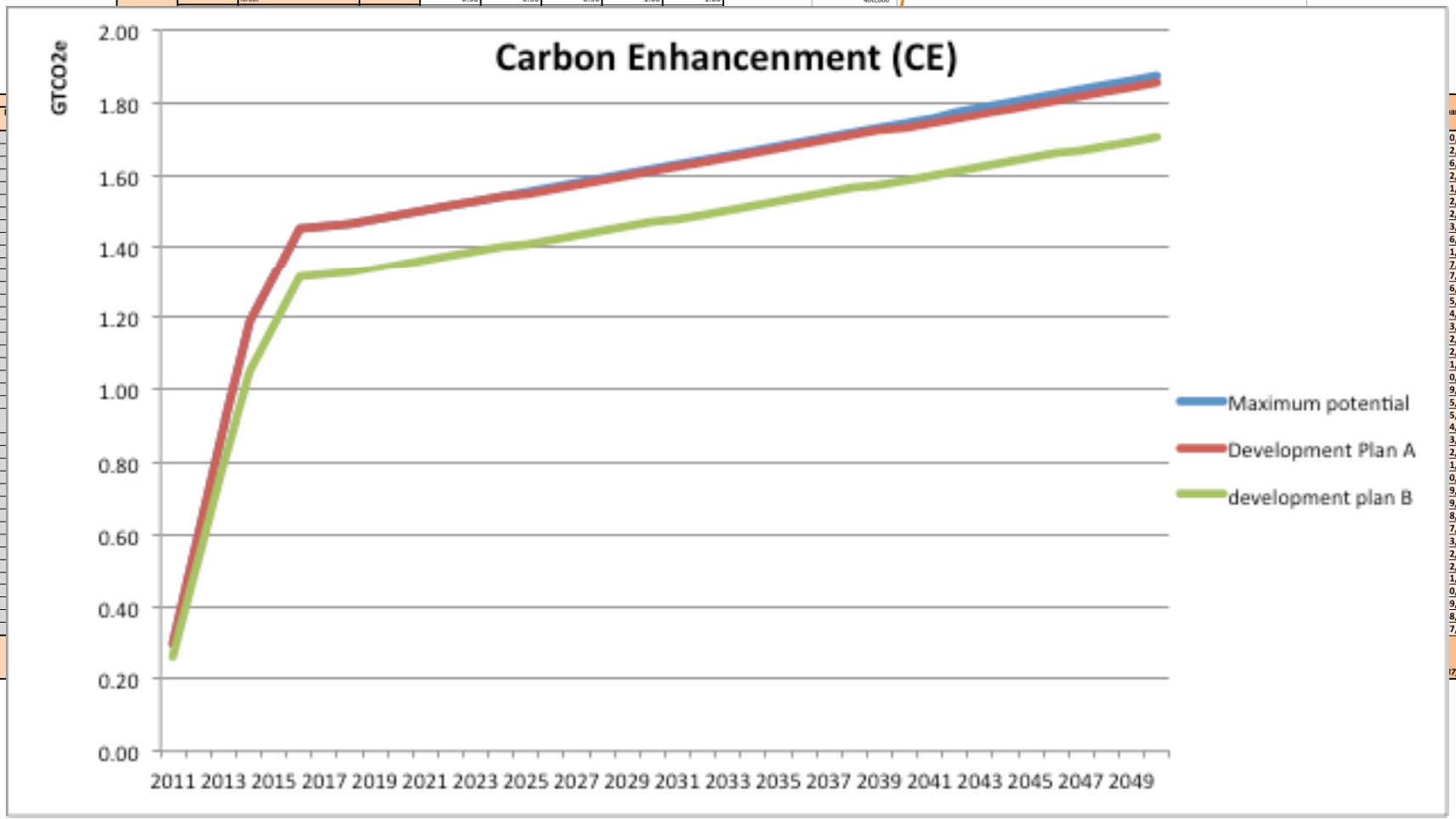
Identification	Screening REDD+ potential
Continent	Atlantis
Country	Cuzaland
Climate zone	Tropics

Method	Carbon Enhancement (CE)

Method	For the equations			Your values	Your values	Your values	Your values	Your values
	Abb	Parameter/Constant name	Unit	Act-1	Act-2	Act-3	Act-4	Act-5
Carbon enhancement	*AGBcc=100*	Aboveground biomass per crown cover	Tonne d.m. ha-1	234.00	300.00	280.00	1.00	1.00
	AGBcc=30%	Above ground biomanss for crown cover 30%	Tonne d.m. ha-1	70.20	90.00	84.00	0.30	0.30
	AGBcc=x%	Aboveground biomass for crown cover in current state of degradation	Tonne d.m. ha-1	163.80	210.00	168.00	0.01	0.01
	Tdeg	time	years	3	5	3	-1	-1
	Tres	time	years	141	90	112	1	1
	A	Area	ha	500000.00	2000000.00	3000000.00	0.00	0.00
	RSR	Root-shoot ratio	dimensionless	1.42	1.42	1.27	1.00	1.00
	MAIdeg	mean annual increment of degraded forest	m3 ha-1 yr-1	8.30	8.30	8.50	1.00	1.00
	MAIres	mean annual increment of the forest in the restoration system	m3 ha-1 yr-1	1.00	1.00	1.00	1.00	1.00
	Vdeg	Volme (for degradation)	m3	22.51	12.51	17.45	0.99	0.99
	Ddeg	Density of main spp in degraded forest		0.50	0.50	0.50	1.00	1.00



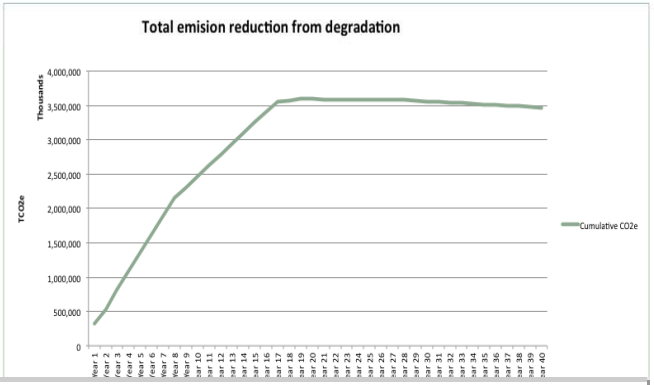
	Baseline	Baseline Cumuliert
Year 1	-40,538,160	-40,538,160
Year 2	-40,538,160	-81,076,320
Year 3	-40,538,160	-121,614,480
Year 4	-40,538,160	-162,152,640
Year 5	0	-162,152,640
Year 6	0	-162,152,640
Year 7	0	-162,152,640
Year 8	0	-162,152,640
Year 9	0	-162,152,640
Year 10	0	-162,152,640
Year 11	0	-162,152,640
Year 12	0	-162,152,640
Year 13	0	-162,152,640
Year 14	0	-162,152,640
Year 15	0	-162,152,640
Year 16	0	-162,152,640
Year 17	0	-162,152,640
Year 18	0	-162,152,640
Year 19	0	-162,152,640
Year 20	0	-162,152,640
Year 21	0	-162,152,640
Year 22	0	-162,152,640
Year 23	0	-162,152,640
Year 24	0	-162,152,640
Year 25	0	-162,152,640
Year 26	0	-162,152,640
Year 27	0	-162,152,640
Year 28	0	-162,152,640
Year 29	0	-162,152,640
Year 30	0	-162,152,640
Year 31	0	-162,152,640
Year 32	0	-162,152,640
Year 33	0	-162,152,640
Year 34	0	-162,152,640
Year 35	0	-162,152,640
Year 36	0	-162,152,640
Year 37	0	-162,152,640
Year 38	0	-162,152,640
Year 39	0	-162,152,640
Year 40	0	-162,152,640
Total/ activity		



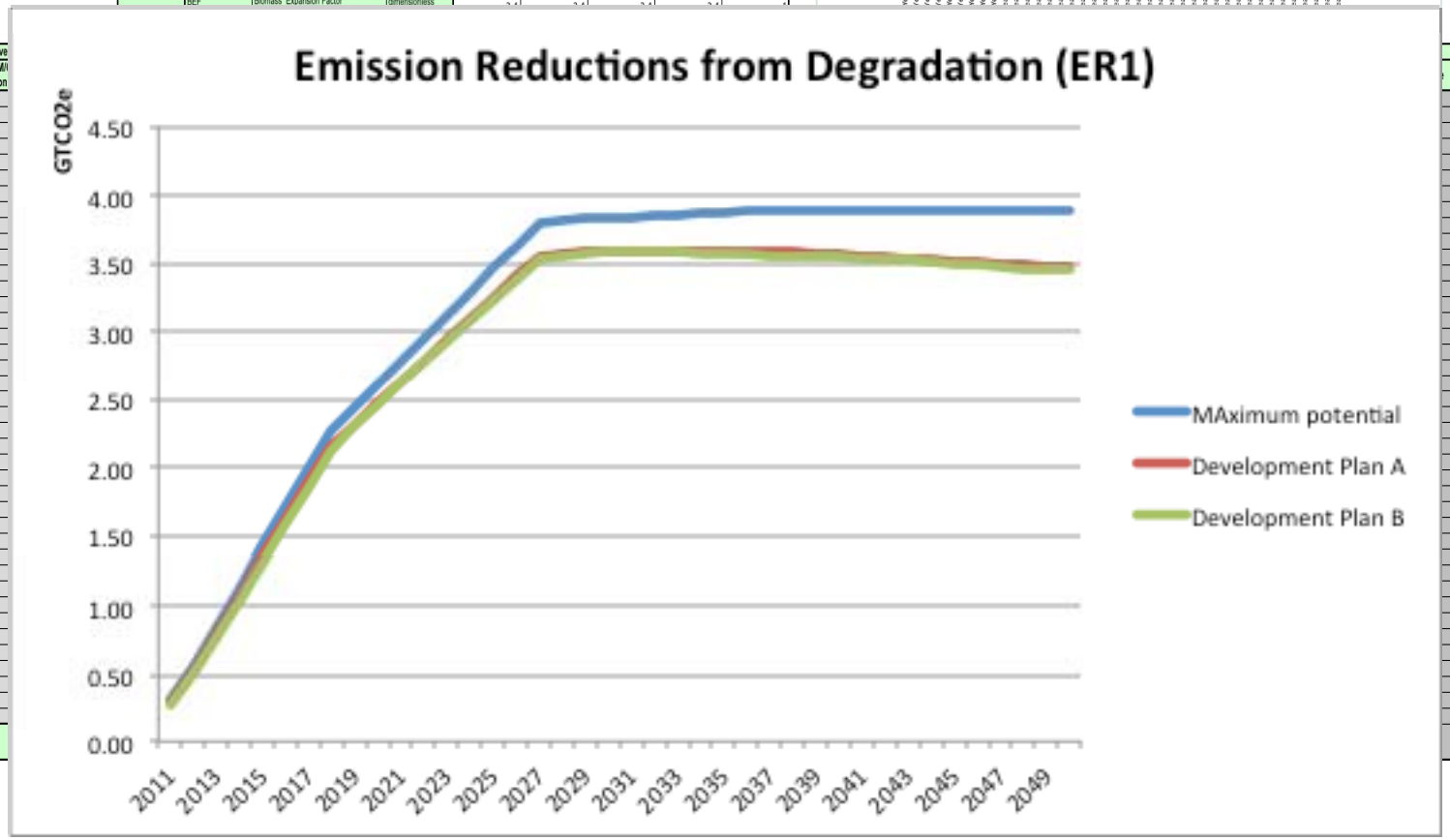
Identification	Screening REDD+ potential
Continent	Atlantis
Country	Cuzaland
Climate zone	Tropics

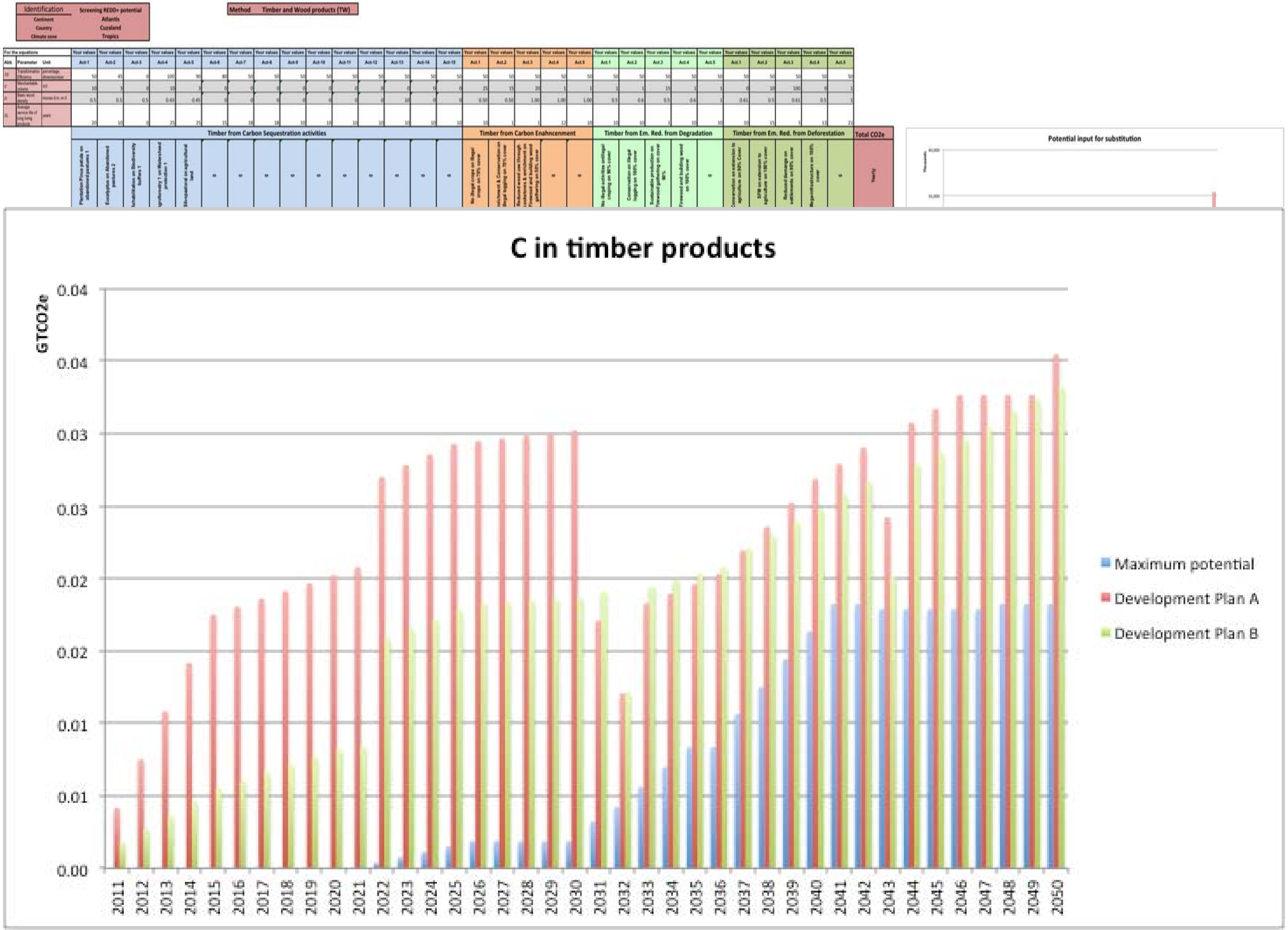
Method	Emission reduction on degradation (ER1)

Method	For the equations			Your values	Your values	Your values	Your values	Your values
	Abb	Parameter/Constant name	Unit	Act-1	Act-2	Act-3	Act-4	Act-5
Emissions reduction on degradation	AGBcc=100	Aboveground biomass per crown cover=100%	tonnes d.m.ha-1	234	280	234	280	1
	AGBcc=30%	Aboveground biomass for the lowest foest threshold	tonnes d.m.ha-1	70.2	84	70.2	84	0.3
	AGBcc=x%	Aboveground biomassbiomass at the beginning of the project	tonnes d.m.ha-1	211	280	211	280	0
	Tdeg	time required for getting the lowest forest threshold with the current degradation rate	years	9	28	20	17	-29
	Tma	time required for gettin to 100%cc with the management activity	years					
	Rotation for SFM	time	years	2	2	9	2	3
	A	Area	ha	3000000	500000	1200000	5000000	0
	RSR	Root-shoot ratio	dimensionless	1.27	1.24	1.27	1.24	1
	MAI sfm	Mean annual increment in SFM activities		3	6.2	3	6.2	1
	MAIfor	Mean Annual increment in natural forest	m3ha-1yr-1	3	6.2	3	6.2	1
	Vdeg	Volume (for degradation)	m3ha-1yr-1	32	11.8	14.25	18.8	0.01
	D	Density	tones d.m.m-3	0.5	0.6	0.5	0.6	1
	BEF	Biomass Expansion Factor	dimensionless					



	No illegal activities onIllegal croping on 90% cove						Total per year
	Degradation per year	Baseline	Growth-yield	SFM/Conservation activity	SFM/ on		
Year 1	-111,556,800	1,356,809,580	10,458,450	1,478,824,830		0	315,528,153
Year 2	-111,556,800	1,245,252,780	10,458,450	1,489,283,280		0	538,200,643
Year 3	-111,556,800	1,133,695,980	10,458,450	1,499,741,730		0	807,300,964
Year 4	-111,556,800	1,022,139,180	10,458,450	1,510,200,180		0	1,076,401,286
Year 5	-111,556,800	910,582,380	10,458,450	1,520,658,630		0	1,345,501,607
Year 6	-111,556,800	799,025,580	10,458,450	1,531,117,080		0	1,614,601,929
Year 7	-111,556,800	687,468,780	10,458,450	1,541,575,530		0	1,883,702,250
Year 8	-111,556,800	575,911,980	10,458,450	1,552,033,980		0	2,152,802,572
Year 9	0	575,911,980	10,458,450	1,562,492,430		0	2,310,346,093
Year 10	0	575,911,980	10,458,450	1,572,950,880		0	2,467,889,615
Year 11	0	575,911,980	10,458,450	1,583,409,330		0	2,625,433,136
Year 12	0	575,911,980	10,458,450	1,593,867,780		0	2,782,976,658
Year 13	0	575,911,980	10,458,450	1,604,326,230		0	2,940,520,179
Year 14	0	575,911,980	10,458,450	1,614,784,680		0	3,098,063,701
Year 15	0	575,911,980	10,458,450	1,625,243,130		0	3,255,607,222
Year 16	0	575,911,980	6,275,070	1,631,518,200		0	3,408,967,364
Year 17	0	575,911,980	0	1,631,518,200		0	3,556,052,435
Year 18	0	575,911,980	0	1,631,518,200		0	3,575,154,627
Year 19	0	575,911,980	0	1,631,518,200		0	3,594,256,818
Year 20	0	575,911,980	0	1,631,518,200		0	3,593,487,955
Year 21	0	575,911,980	0	1,631,518,200		0	3,592,719,091
Year 22	0	575,911,980	0	1,631,518,200		0	3,591,950,228
Year 23	0	575,911,980	0	1,631,518,200		0	3,591,181,364
Year 24	0	575,911,980	0	1,631,518,200		0	3,590,412,501
Year 25	0	575,911,980	0	1,631,518,200		0	3,589,643,637
Year 26	0	575,911,980	0	1,631,518,200		0	3,588,874,773
Year 27	0	575,911,980	0	1,631,518,200		0	3,588,105,910
Year 28	0	575,911,980	0	1,631,518,200		0	3,579,304,078
Year 29	0	575,911,980	0	1,631,518,200		0	3,570,502,247
Year 30	0	575,911,980	0	1,631,518,200		0	3,561,700,415
Year 31	0	575,911,980	0	1,631,518,200		0	3,552,898,584
Year 32	0	575,911,980	0	1,631,518,200		0	3,544,096,752
Year 33	0	575,911,980	0	1,631,518,200		0	3,535,294,921
Year 34	0	575,911,980	0	1,631,518,200		0	3,526,493,089
Year 35	0	575,911,980	0	1,631,518,200		0	3,517,691,258
Year 36	0	575,911,980	0	1,631,518,200		0	3,508,889,426
Year 37	0	575,911,980	0	1,631,518,200		0	3,500,087,595
Year 38	0	575,911,980	0	1,631,518,200		0	3,491,285,763
Year 39	0	575,911,980	0	1,631,518,200		0	3,482,483,932
Year 40	0	575,911,980	0	1,631,518,200		0	3,473,682,100
Total per activity						0	3,473,682,100

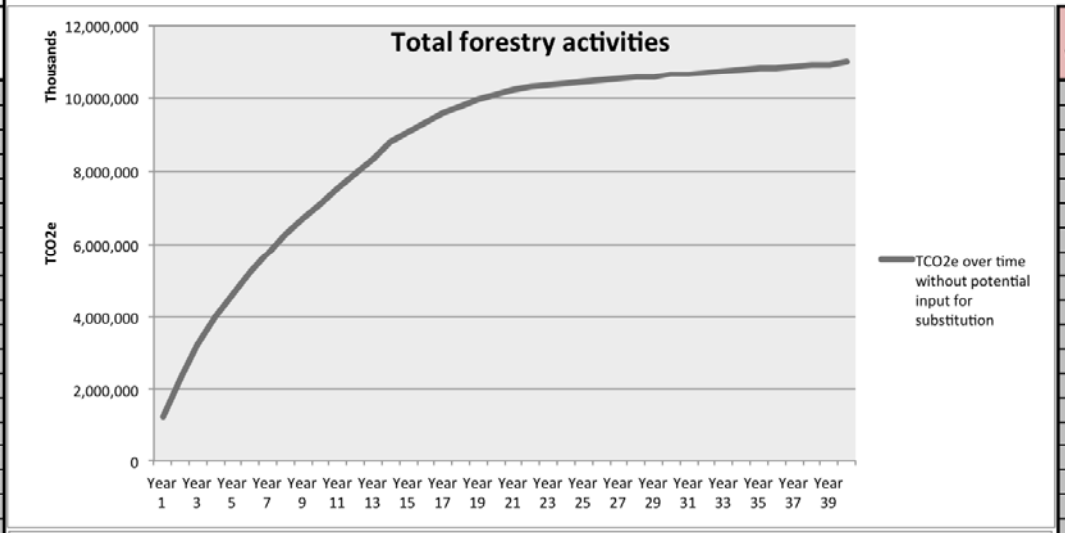


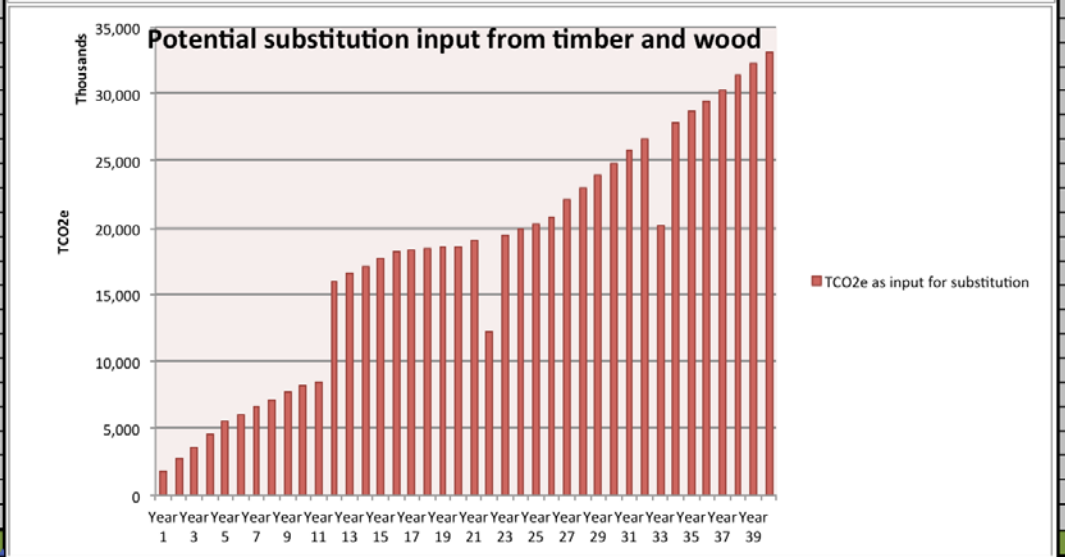


Identification
Screening REDD+ potential
Continent
Atlantis
Country
Cuzaland
Climate zone
Tropics
Method
Timber and Wood products (TW)
Timber from Carbon Sequestration activities
Timber from Carbon Enahncenment
Timber from Em. Red. from Degradation
Timber from Em. Red. from Deforestation
Total CO2e
Potential input for substitution
C in timber products
GTCO2e
Maximum potential
Development Plan A
Development Plan B

Project name	Screening REDD+ potential - Development Plan B
Continent	Atlantis
Country	Cuzaland
Climate zone	Tropics

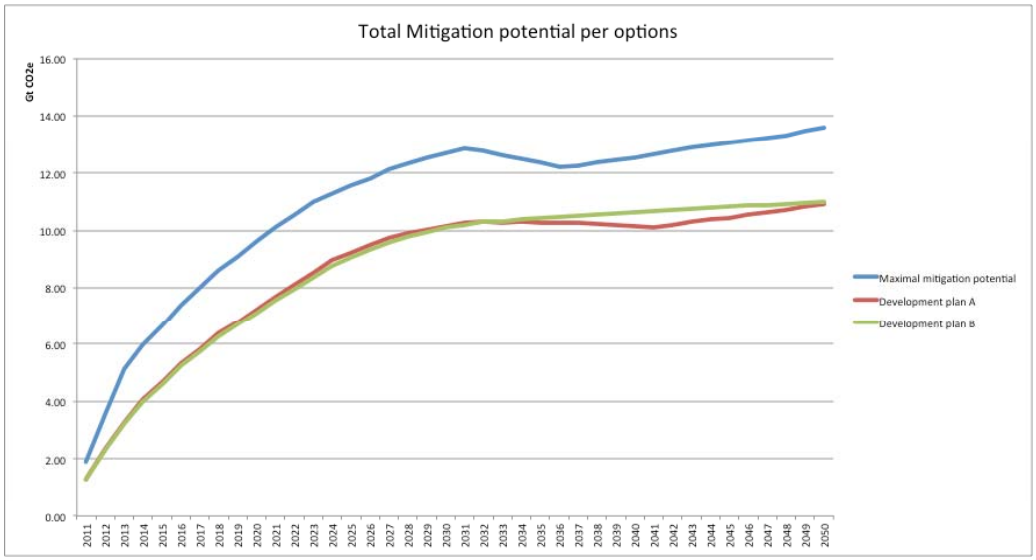
Total area (ha)	*6,500,000*	*5,500,000*	*9,700,000*	*31,000,000*	***52,700,000***	
METHODS	Carbon Sequestration (TCO2e)	Carbon Enhancement (TCO2e)	Ermission Reduction1 (TCO2e)	Emission Reduction 2 (TCO2e)	Total per year (TCO2e)	Timber and Wood (TCO2e)
Year 1	0	261,283,008	283,622,616	716,457,700	**1,261,363,324**	**1,756,800**
Year 2	5,041,478	523,847,655	505,142,352	1,298,871,560	**2,332,903,045**	**2,690,100**
Year 3	15,124,435	787,693,940	768,869,208	1,664,613,421	**3,236,301,003**	**3,623,400**
Year 4	30,248,871	1,052,821,863	1,032,596,064	1,866,387,281	**3,982,054,078**	**4,556,700**
Year 5	50,414,784	1,182,681,218	1,296,322,919	2,068,161,141	**4,597,580,062**	**5,490,000**
Year 6	75,622,177	1,313,822,210	1,569,643,953	2,269,935,001	**5,229,023,341**	**6,039,000**
Year 7	105,871,047	1,321,512,042	1,842,964,986	2,471,708,861	**5,742,056,937**	**6,588,000**
Year 8	141,161,396	1,330,483,511	2,116,286,020	2,673,482,722	**6,261,413,649**	**7,137,000**
Year 9	181,493,224	1,340,736,620	2,300,361,613	2,875,256,582	**6,697,848,039**	**7,686,000**
Year 10	226,866,530	1,352,271,367	2,462,125,847	3,077,030,442	**7,118,294,185**	**8,235,000**
Year 11	277,281,314	1,365,087,752	2,623,890,080	3,278,804,302	**7,545,063,449**	**8,399,700**
Year 12	318,002,417	1,376,687,188	2,773,382,480	3,480,578,162	**7,948,650,247**	**15,903,844**
Year 13	363,764,998	1,388,286,623	2,925,552,536	3,682,352,023	**8,359,956,180**	**16,545,488**
Year 14	414,569,058	1,399,886,059	3,077,722,592	3,883,546,139	**8,775,723,848**	**17,187,131**
Year 15	470,414,596	1,411,485,495	3,229,892,648	3,927,207,999	**9,039,000,737**	**17,828,775**
Year 16	531,301,613	1,423,084,930	3,377,879,324	3,994,296,787	**9,326,562,653**	**18,305,719**
Year 17	597,230,108	1,434,684,366	3,529,185,107	4,037,958,647	**9,599,058,228**	**18,398,363**
Year 18	668,200,081	1,446,283,801	3,552,508,011	4,105,047,436	**9,772,039,328**	**18,491,006**
Year 19	744,211,533	1,457,883,237	3,575,830,914	4,148,709,296	**9,926,634,979**	**18,583,650**
Year 20	825,264,463	1,469,482,672	3,579,282,763	4,215,798,084	**10,089,827,982**	**18,676,294**
Year 21	911,358,872	1,481,082,108	3,582,734,611	4,230,868,024	**10,206,043,615**	**19,112,063**
Year 22	942,531,321	1,493,898,493	3,586,186,460	4,269,364,892	**10,291,981,166**	**12,208,388**
Year 23	958,968,609	1,505,497,929	3,580,044,130	4,284,434,833	**10,328,945,501**	**19,506,656**
Year 24	975,405,898	1,517,097,364	3,573,901,801	4,322,931,701	**10,389,336,765**	**19,942,425**
Year 25	991,843,187	1,528,696,800	3,567,759,472	4,338,001,641	**10,426,301,100**	**20,378,194**
Year 26	1,008,280,476	1,540,296,235	3,561,617,143	4,376,498,509	**10,486,692,363**	**20,813,963**
Year 27	1,013,231,655	1,551,895,671	3,555,474,814	4,391,568,449	**10,512,170,589**	**22,110,861**
Year 28	1,018,182,834	1,563,495,106	3,550,893,694	4,430,065,318	**10,562,636,953**	**23,023,459**
Year 29	1,023,134,014	1,575,094,542	3,546,312,575	4,445,135,258	**10,589,676,388**	**23,936,057**
Year 30	1,028,085,193	1,586,693,978	3,541,731,455	4,483,632,126	**10,640,142,752**	**24,848,655**
Year 31	1,033,036,373	1,598,293,413	3,537,150,336	4,498,702,066	**10,667,182,188**	**25,761,253**
Year 32	1,037,987,552	1,609,892,849	3,532,569,216	4,537,198,934	**10,717,648,551**	**26,673,851**
Year 33	1,057,673,891	1,622,709,234	3,527,988,097	4,552,268,875	**10,760,640,097**	**20,154,362**
Year 34	1,062,625,071	1,634,308,670	3,513,812,800	4,590,765,743	**10,801,512,283**	**27,836,816**
Year 35	1,067,576,250	1,645,908,105	3,499,637,503	4,605,835,683	**10,818,957,541**	**28,656,771**
Year 36	1,072,527,429	1,657,507,541	3,485,462,205	4,644,332,551	**10,859,829,727**	**29,476,725**
Year 37	1,077,478,609	1,669,106,976	3,471,286,908	4,659,402,491	**10,877,274,985**	**30,296,679**
Year 38	1,082,429,788	1,680,706,412	3,457,111,611	4,697,899,360	**10,918,147,171**	**31,500,934**
Year 39	1,087,380,968	1,692,305,847	3,452,530,492	4,712,969,300	**10,945,186,606**	**32,320,888**
Year 40	1,092,332,147	1,703,905,283	3,447,949,372	4,751,466,168	**10,995,652,970**	**33,140,843**
TOTAL	**1,092,332,147**	**1,703,905,283**	**3,447,949,372**	**4,751,466,168**	**10,995,652,970**	**33,140,843**





Total Mitigation potential per options

Year	Total Potential - Maximal GHG	Total Potential - Development plan A	Total Potential - Development Plan B
2011	1,891,225,834.20	1,283,860,465.68	1,261,363,324.08
2012	3,576,999,716.70	2,352,186,022.79	2,332,903,045.15
2013	5,113,976,983.51	3,275,174,007.32	3,236,301,003.21
2014	5,970,358,902.62	4,055,806,587.29	3,982,054,078.26
2015	6,677,500,614.03	4,677,116,002.68	4,597,580,062.31
2016	7,406,089,877.75	5,309,790,013.50	5,229,023,340.94
2017	8,011,227,980.02	5,829,095,819.75	5,742,056,936.56
2018	8,617,647,720.84	6,359,766,221.43	6,261,413,649.18
2019	9,113,792,300.21	6,790,244,418.53	6,697,848,038.78
2020	9,611,218,518.14	7,232,087,211.07	7,118,294,185.38
2021	10,109,926,374.63	7,685,294,599.03	7,545,063,448.97
2022	10,549,693,591.11	8,108,334,436.99	7,948,650,247.39
2023	10,983,004,567.59	8,531,374,274.95	8,359,956,180.25
2024	11,264,659,784.07	8,953,834,368.92	8,775,723,847.55
2025	11,546,315,000.55	9,218,762,206.88	9,039,000,737.29
2026	11,822,113,485.04	9,502,933,592.84	9,326,562,653.47
2027	12,148,067,511.52	9,757,402,980.80	9,599,058,227.68
2028	12,346,038,658.00	9,907,316,416.76	9,772,039,328.33
2029	12,523,092,904.48	10,033,802,924.73	9,926,634,979.41
2030	12,700,147,150.96	10,163,845,305.69	10,089,827,981.94
2031	12,848,609,477.44	10,261,624,786.65	10,206,043,614.90
2032	12,772,025,723.93	10,300,475,705.61	10,291,981,165.86
2033	12,636,501,330.41	10,285,732,146.57	10,328,945,501.22
2034	12,498,070,668.14	10,294,415,515.54	10,389,336,764.59
2035	12,359,640,005.87	10,279,671,956.50	10,426,301,099.95
2036	12,221,209,343.60	10,286,902,191.08	10,486,692,363.31
2037	12,264,786,592.59	10,249,186,413.30	10,512,170,589.30
2038	12,358,748,385.19	10,226,271,675.51	10,562,636,952.88
2039	12,452,710,177.80	10,179,337,089.72	10,589,676,388.47
2040	12,546,671,970.41	10,155,236,511.93	10,640,142,752.06
2041	12,640,633,763.01	10,107,709,006.14	10,667,182,187.64
2042	12,780,539,993.12	10,196,131,468.36	10,717,648,551.23
2043	12,920,446,223.23	10,291,294,552.57	10,760,640,096.82
2044	13,001,411,813.33	10,379,717,014.78	10,801,512,282.80
2045	13,082,377,403.44	10,444,712,548.99	10,818,957,540.79
2046	13,163,342,993.55	10,533,135,011.20	10,859,829,726.78
2047	13,244,308,583.66	10,621,102,764.17	10,877,274,984.77
2048	13,325,274,173.76	10,733,090,365.13	10,918,147,170.75
2049	13,465,180,403.87	10,822,243,958.09	10,945,186,606.34
2050	13,605,086,633.98	10,935,417,399.05	10,995,652,969.93



Maximum potential:

- Highest mitigation potential, but
- No consideration of other development priorities
- High investments required in the first 5 years

Development A:

- Considers other sector's priorities
- Less investment intensive than the previous one

Development B:

- -Considers other sector's priorities
- Less investment intensive than the previous one

Test phase - 2103

- ✓ Methodology design (2012)
- ✓ Methodology review by experts
- ✓ First calculation routine
- ✓ Tests:
  - Sub-national level (at different scales and with different number of forestry activities)
    - Colombia, Ghana and Malaysia
  - National level
    - Test country (using the current information from a real country)

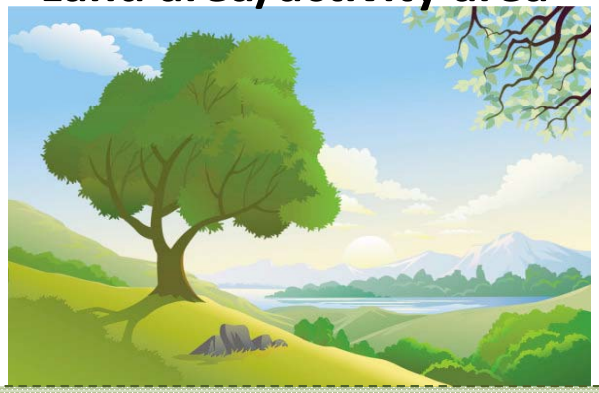
Advantages of **sCreen**

- **One methodological package** for all forestry activities
- Allows **comparing** possible scenarios
- Allows **dialogue** among stakeholders regarding advantages and disadvantages of various management options
- **Flexible** regarding data sources and **cheap** screening option
- User friendly

THANK YOU VERY MUCH FOR YOUR ATTENTION!!

carmenza.robledo@com

Land area/activity area



X

Emission factors

=

Carbon benefits

In the forests/land

Where?

Land area: Forest land, Grassland, Wetland, Degraded land…

Related activities:

Definition of boundaries

Stratification

What?

Carbon stock changes per activity (per land unit)

Other GHG emissions

Related activities:

Inventory per pool and activity (including sampling, field measurements and data analysis)