

Project area

Project Area Forest category	Area (ha)
Bosques Alluviales	53,584.65
Bosques Colinosos	390,006.72
Bosques Montañosos	863,913.69
Humedales	19,545.84
Total area	1,327,050.90

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Total Project Area	1,327,050.90
Leakage Belt Forest Categories Outside PA	Area (ha)
Anthropogenic Forest	86,873.67
Humedales-vegetacion inundable	246,078.72
Vegetacion de Tierra Firme	1,585,595.70
<i>Total outside PA boundary</i>	<i>1,918,548.09</i>
Leakage Belt Forest Categories Inside PA	Area (ha)
Alluvial	511.92
Hills	424.8
Mountains	825.75
<i>Total inside PA boundary</i>	<i>1762.47</i>
TOTAL leakage belt	1,920,310.56

Total leakage belt	1920310.74
Outside of PA	1918548.27
Inside the PA	1762.47

Forest

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<i>TOTAL leakage belt</i>	<i>1,920,310.56</i>

adding in re
biomass to carbon

			live AGB mid pt.	live AGB wtd avg	AGB C	ABGB C
inundable						
1	2484.9	0-25 Mg/ha	12.5	0.126225		
2	5432.22	25-50 Mg/ha	37.5	0.827817		
3	6207.3	50-75 Mg/ha	62.5	1.576553		
4	2296.26	75-100 Mg/ha	87.5	0.816498		
5	29272.14	100-150 Mg/ha	125	14.8693		
6	14785.29	150-200 Mg/ha	175	10.51463		
7	16614.63	200-250 Mg/ha	225	15.19145		
8	54356.13	250-300 Mg/ha	275	60.74453		
9	79778.52	300-350 Mg/ha	325	105.3647		
10	27576.09	350-400 Mg/ha	375	42.02328		
11	7275.24	> 400 Mg/ha	400	11.82587		
	246079			263.8809	124.024	153.3584
			AGB CO2	454.7547		
tierra firme						
ha						
			mid pt.			
1	514.89	0-25 Mg/ha	12.5	0.004059		
2	7277.13	25-50 Mg/ha	37.5	0.172107		
3	11811.69	50-75 Mg/ha	62.5	0.465586		
4	13999.86	75-100 Mg/ha	87.5	0.772573		
5	241666.4	100-150 Mg/ha	125	19.0517		
6	615439.4	150-200 Mg/ha	175	67.9252		
7	426826.1	200-250 Mg/ha	225	60.56769		
8	178433.4	250-300 Mg/ha	275	30.94684		
9	58541.76	300-350 Mg/ha	325	11.99932		
10	29058.21	350-400 Mg/ha	375	6.872388		
11	2026.89	> 400 Mg/ha	400	0.511326		
	1585596			199.2888	93.66573	116.2848
			AGB CO2	343.441		
anthropogenic						
ha						
			mid pt.			
1	1283.13	0-25 Mg/ha	12.5	0.184626		
2	5355.72	25-50 Mg/ha	37.5	2.311857		
3	4973.4	50-75 Mg/ha	62.5	3.57804		
4	2191.68	75-100 Mg/ha	87.5	2.207481		
5	10861.65	100-150 Mg/ha	125	15.62851		
6	13174.56	150-200 Mg/ha	175	26.53909		
7	14954.85	200-250 Mg/ha	225	38.73258		

8	13810.41	250-300 M	275	43.71708		
9	14095.98	300-350 M	325	52.73397		
10	5410.89	350-400 M	375	23.35672		
11	761.4	> 400 Mg/t	400	3.50578		
	86873.7			212.4957	99.87299	123.8768
			AGB CO2	366.201		

total area **1918548**

total carbon--to covert to co2 equivalent
add in dead wood based on project
roots to total biomass

ABGB C and DE, ABGB and DEAD CO2

164.9014903 604.6388

125.0373923 458.4704

133.2008148 488.403

	ha	ha	ha
Year	Reference reg	Project area	Leakage belt
2009	24,214.50	4,256.82	19,957.68
2010	27,320.04	5,420.34	21,899.70
2011	30,954.06	3,216.33	27,737.73
2012	35,216.91	3,818.16	31,398.75
2013	40,230.18	4,754.79	35,475.39
2014	46,140.21	6,254.28	39,885.93
2015	53,123.04	7,939.89	45,183.15
2016	57,723.84	9,533.52	48,190.32
2017	59,950.80	10,748.34	49,202.46
2018	62,040.60	12,409.38	49,631.22
Total	436,914.18	68,351.85	368,562.33

Project area baseline by vegetation types

	$A_{unplanned,i,t}$ (ha)			
YEAR	Alluvial	Collinsos	Montanosos	Humedales
2009	46.89	1,550.70	2,646.99	12.24
2010	715.86	3,423.51	1,271.97	9.00
2011	93.69	2,108.34	993.24	21.06
2012	150.75	2,369.97	1,267.56	29.88
2013	211.86	2,756.70	1,746.63	39.60
2014	354.87	3,267.18	2,566.44	65.79
2015	488.70	4,368.33	2,987.64	95.22
2016	579.33	5,518.26	3,361.14	74.79
2017	795.87	6,085.80	3,807.99	58.68
2018	1,227.06	6,724.98	4,390.65	66.69
TOTAL	4,664.88	38,173.77	25,040.25	472.95

Leakage belt baseline by vegetation types

	ha	ha	ha	
YEAR	Anthropogenic	Humedales-veget	Vegetacion de Tier	TOTAL
2009	1,416.96	3,786.03	14,754.69	19,957.68
2010	3,110.76	1,139.85	17,649.09	21,899.70
2011	3,387.42	1,435.68	22,914.63	27,737.73
2012	3,443.94	1,638.90	26,315.91	31,398.75
2013	3,558.51	1,943.64	29,973.24	35,475.39
2014	3,718.98	2,411.28	33,755.67	39,885.93
2015	4,170.51	2,957.67	38,054.97	45,183.15
2016	3,938.85	3,567.69	40,683.78	48,190.32
2017	3,628.53	3,910.05	41,663.88	49,202.46
2018	2,692.98	4,639.77	42,298.47	49,631.22
TOTAL	33,067.44	27,430.56	308,064.33	368,562.33

Project Area

Net greenhouse gas emissions in the baseline from un

AGB only		AGB only		
Year	<i>CBSL</i>	CWP	<i>C_{post}</i>	<i>BGB & DW</i>
2009	1,904,197.3	0.0	132,355.64	62,668.51
2010	2,002,973.6	0.0	168,532.51	126,139.76
2011	1,270,517.9	0.0	100,004.09	166,512.36
2012	1,516,529.4	0.0	118,716.55	214,881.61
2013	1,911,717.0	0.0	147,838.82	276,152.29
2014	2,545,860.6	0.0	194,461.88	358,246.38
2015	3,183,141.3	0.0	246,871.89	460,490.42
2016	3,789,914.8	0.0	296,422.00	581,869.95
2017	4,258,008.1	0.0	334,193.93	718,410.32
2018	4,873,035.6	0.0	385,839.99	874,941.71
			ΔCTOT	

Leakage Belt

AGB only		AGB only		
Year	<i>CBSL</i>	CWP	<i>C_{post}</i>	<i>BGB & DW</i>
2009	7,307,972.8	0.0	620,536.33	223,404.28
2010	7,718,936.8	0.0	680,918.80	459,156.10
2011	9,763,182.5	0.0	862,438.38	757,330.36
2012	11,044,434.5	0.0	976,269.04	1,094,627.46
2013	12,481,049.2	0.0	1,103,022.41	1,475,799.31
2014	14,051,516.5	0.0	1,240,157.60	1,904,946.49
2015	15,941,896.6	0.0	1,404,861.99	2,391,846.21
2016	17,037,313.2	0.0	1,498,362.75	2,912,226.44
2017	17,415,970.0	0.0	1,529,832.82	3,444,186.41
2018	17,623,158.6	0.0	1,543,164.09	3,982,512.92
			ΔCTOT	

Emissions from aboveground biomass

	<i>C_{BSL}</i> (t CO ₂ -e)				
<i>TOTAL</i>	YEAR	Alluvial	Collinsos	Montanosos	Humedales
4,256.82	2009	10,023.52	543,572.04	1,347,141.44	3,460.25
5,420.34	2010	153,027.01	1,200,054.37	647,347.93	2,544.30
3,216.33	2011	20,027.80	739,043.45	505,492.94	5,953.66
3,818.16	2012	32,225.33	830,753.48	645,103.54	8,447.08
4,754.79	2013	45,288.61	966,315.24	888,918.23	11,194.92
6,254.28	2014	75,859.38	1,145,255.50	1,306,146.86	18,598.83
7,939.89	2015	104,467.77	1,531,245.28	1,520,509.58	26,918.69
9,533.52	2016	123,841.44	1,934,334.07	1,710,596.18	21,143.13
10,748.34	2017	170,130.48	2,133,275.76	1,938,013.04	16,588.84
12,409.38	2018	262,304.53	2,357,329.66	2,234,548.14	18,853.26
68,351.85	<i>total</i>	997,195.85	13,381,178.84	12,743,817.90	133,702.97

Emissions from aboveground biomass

YEAR	Anthropogenic F	Humedales-veget	Vegetacion de Tie	<i>CBSL</i>
2009	518,892.12	1,721,714.97	5,067,365.70	<i>7,307,972.79</i>
2010	1,139,163.33	518,352.15	6,061,421.37	<i>7,718,936.85</i>
2011	1,240,476.49	652,882.24	7,869,823.77	<i>9,763,182.49</i>
2012	1,261,174.16	745,297.49	9,037,962.82	<i>11,044,434.47</i>
2013	1,303,129.81	883,879.44	10,294,039.94	<i>12,481,049.19</i>
2014	1,361,894.08	1,096,540.93	11,593,081.54	<i>14,051,516.55</i>
2015	1,527,244.80	1,345,014.36	13,069,637.49	<i>15,941,896.65</i>
2016	1,442,410.69	1,622,423.83	13,972,478.66	<i>17,037,313.17</i>
2017	1,328,771.20	1,778,113.65	14,309,085.20	<i>17,415,970.05</i>
2018	986,171.88	2,109,957.25	14,527,029.43	<i>17,623,158.57</i>
<i>Total</i>	<i>12,109,328.56</i>	<i>12,474,176.31</i>	<i>105,801,925.91</i>	<i>130,385,430.78</i>

planned deforestation; t CO2-e

C_{TOT}
1,834,510.1
1,960,580.9
1,337,026.1
1,612,694.5
2,040,030.5
2,709,645.1
3,396,759.9
4,075,362.8
4,642,224.5
5,362,137.3
28,970,971.6

C_{TOT}
6,910,840.7
7,497,174.1
9,658,074.5
11,162,792.9
12,853,826.1
14,716,305.4
16,928,880.9
18,451,176.9
19,330,323.6
20,062,507.4
137,571,902.5

<i>CBSL</i>
1,904,197.25
2,002,973.61
1,270,517.85
1,516,529.42
1,911,716.99
2,545,860.57
3,183,141.32
3,789,914.83
4,258,008.12
4,873,035.59
27,255,895.56

year of defor	BGB deforested t CO2	emissions t CO2					
		2009	2010	2011	2012	2013	
2009	460,136.6	46013.7	46013.7	46013.7	46013.7	46013.7	
2010	449,599.8		44960.0	44960.0	44960.0	44960.0	
2011	290,038.5			29003.9	29003.9	29003.9	
2012	347,891.0				34789.1	34789.1	
2013	441,733.1					44173.3	
2014	593,317.3						
2015	736,907.3						
2016	873,158.2						
2017	981,393.3						
2018	1,123,146.1						
total		46013.7	90973.6	119977.5	154766.6	198939.9	

total CO2 emissions BGB pool	
2009	46013.7
2010	90973.6
2011	119977.5
2012	154766.6
2013	198939.9
2014	258271.6
2015	331962.3
2016	419278.2
2017	517417.5
2018	629732.1

2014	2015	2016	2017	2018
46013.7	46013.7	46013.7	46013.7	46013.7
44960.0	44960.0	44960.0	44960.0	44960.0
29003.9	29003.9	29003.9	29003.9	29003.9
34789.1	34789.1	34789.1	34789.1	34789.1
44173.3	44173.3	44173.3	44173.3	44173.3
59331.7	59331.7	59331.7	59331.7	59331.7
	73690.7	73690.7	73690.7	73690.7
		87315.8	87315.8	87315.8
			98139.3	98139.3
				112314.6
258271.6	331962.3	419278.2	517417.5	629732.1

year of defor	DW deforested t CO2	emissions t CO2					
		2009	2010	2011	2012	2013	
2009	166,548.5	16654.8	16654.8	16654.8	16654.8	16654.8	
2010	185,112.8		18511.3	18511.3	18511.3	18511.3	
2011	113,687.5			11368.7	11368.7	11368.7	
2012	135,801.5				13580.2	13580.2	
2013	170,973.7					17097.4	
2014	227,623.7						
2015	285,533.1						
2016	340,637.2						
2017	384,010.3						
2018	442,167.8						
	total	16654.8	35166.1	46534.9	60115.0	77212.4	

total CO2 emissions DW pool	
2009	16654.8
2010	35166.1
2011	46534.9
2012	60115.0
2013	77212.4
2014	99974.8
2015	128528.1
2016	162591.8
2017	200992.8
2018	245209.6

2014	2015	2016	2017	2018
16654.8	16654.8	16654.8	16654.8	16654.8
18511.3	18511.3	18511.3	18511.3	18511.3
11368.7	11368.7	11368.7	11368.7	11368.7
13580.2	13580.2	13580.2	13580.2	13580.2
17097.4	17097.4	17097.4	17097.4	17097.4
22762.4	22762.4	22762.4	22762.4	22762.4
	28553.3	28553.3	28553.3	28553.3
		34063.7	34063.7	34063.7
			38401.0	38401.0
				44216.8
99974.8	128528.1	162591.8	200992.8	245209.6

year of defor	BGB deforested t CO2	emissions t CO2					
		2009	2010	2011	2012	2013	
2009	1,551,835.6	155183.6	155183.6	155183.6	155183.6	155183.6	
2010	1,636,512.0		163651.2	163651.2	163651.2	163651.2	
2011	2,069,770.4			206977.0	206977.0	206977.0	
2012	2,341,308.2				234130.8	234130.8	
2013	2,645,866.3					264586.6	
2014	2,978,951.4						
2015	3,379,936.9						
2016	3,612,476.9						
2017	3,692,938.9						
2018	3,737,338.1						
total		155183.6	318834.8	525811.8	759942.6	1024529.3	

total CO2 emissions BGB pool	
2009	155183.6
2010	318834.8
2011	525811.8
2012	759942.6
2013	1024529.3
2014	1322424.4
2015	1660418.1
2016	2021665.8
2017	2390959.7
2018	2764693.5

2014	2015	2016	2017	2018
155183.6	155183.6	155183.6	155183.6	155183.6
163651.2	163651.2	163651.2	163651.2	163651.2
206977.0	206977.0	206977.0	206977.0	206977.0
234130.8	234130.8	234130.8	234130.8	234130.8
264586.6	264586.6	264586.6	264586.6	264586.6
297895.1	297895.1	297895.1	297895.1	297895.1
	337993.7	337993.7	337993.7	337993.7
		361247.7	361247.7	361247.7
			369293.9	369293.9
				373733.8
1322424.4	1660418.1	2021665.8	2390959.7	2764693.5

year of defor	DW deforested t CO2	emissions t CO2				
		2009	2010	2011	2012	2013
2009	682,207.2	68220.7	68220.7	68220.7	68220.7	68220.7
2010	721,006.2		72100.6	72100.6	72100.6	72100.6
2011	911,972.2			91197.2	91197.2	91197.2
2012	1,031,662.8				103166.3	103166.3
2013	1,165,852.2					116585.2
2014	1,312,520.4					
2015	1,489,060.3					
2016	1,591,325.4					
2017	1,626,660.7					
2018	1,645,927.0					
total		68220.7	140321.3	231518.6	334684.8	451270.1

total CO2 emissions DW pool	
2009	68220.7
2010	140321.3
2011	231518.6
2012	334684.8
2013	451270.1
2014	582522.1
2015	731428.1
2016	890560.7
2017	1053226.7
2018	1217819.4

2014	2015	2016	2017	2018
68220.7	68220.7	68220.7	68220.7	68220.7
72100.6	72100.6	72100.6	72100.6	72100.6
91197.2	91197.2	91197.2	91197.2	91197.2
103166.3	103166.3	103166.3	103166.3	103166.3
116585.2	116585.2	116585.2	116585.2	116585.2
131252.0	131252.0	131252.0	131252.0	131252.0
	148906.0	148906.0	148906.0	148906.0
		159132.5	159132.5	159132.5
			162666.1	162666.1
				164592.7
582522.1	731428.1	890560.7	1053226.7	1217819.4

Class	Area
Alluvial forest	PNCAZ
Hill forest	PNCAZ
Aguajal	PNCAZ
Mountain forest	PNCAZ
Humedales – vegetacion inundable	Leakage belt outside of PNCAZ
Vegetacion de tierra firme	Leakage belt outside of PNCAZ
Anthropogenic (forest)	Leakage belt outside of PNCAZ
Historical area-weighted average carbon stock for the converted (non forest) conversion project area and leakage	

	Cultivation
Percent area of surveyed representative provinces in San Martin	88.27%
Aboveground biomass carbon stock (t C/ha)	9.3
Historical area-weighted average above ground biomass carbon stock (t C/ha)	8.5

	Cultivation
Percent area of surveyed representative provinces in San Martin	88.27%
Belowground biomass carbon stock (t C/ha)	2.7
Historical area-weighted average belowground biomass carbon stock (t C/ha)	2.8

aboveground biomass	belowground biomass	dead wood
AGB t CO₂/ha	BGB t CO₂/ha	DW t CO₂/ha
213.8	53.2	28.2
350.5	84.3	31.9
282.7	68.9	21.3
508.9	119.2	43.6
454.8	107.6	42.3
343.4	82.9	32.1
366.2	88.0	34.2
AGB t CO₂/ha	BGB t CO₂/ha	DW t CO₂/ha
31.1	10.2	0

Pasture
11.73%
2.3

Pasture
11.73%
3.7

Baseline emissions in LB

year	$C_{TOT\ BSL\ LB}$
2009	6,910,840.7
2010	7,497,174.1
2011	9,658,074.5
2012	11,162,792.9
2013	12,853,826.1
2014	14,716,305.4
2015	16,928,880.9
2016	18,451,176.9
2017	19,330,323.6
2018	20,062,507.4
Total	137,571,902.5

Year	$C_{TOT\ BSL\ PA}$	% deforestation expected to be displaced fr
2009	1,834,510.1	366,902.0
2010	1,960,580.9	392,116.2
2011	1,337,026.1	267,405.2
2012	1,612,694.5	322,538.9
2013	2,040,030.5	408,006.1
2014	2,709,645.1	541,929.0
2015	3,396,759.9	679,352.0
2016	4,075,362.8	815,072.6
2017	4,642,224.5	928,444.9
2018	5,362,137.3	1,072,427.5
Total	28,970,971.6	5,794,194.3

20%

 % leakage ex ante estimate

ΔCP, LB1 (t CO ₂ -e)	ΔCBSL, LK, unplanned	ΔCLK-ASU-LB (t CO ₂ -e)
7,277,742.8	6,910,840.7	366,902.0
7,889,290.3	7,497,174.1	392,116.2
9,925,479.7	9,658,074.5	267,405.2
11,485,331.8	11,162,792.9	322,538.9
13,261,832.2	12,853,826.1	408,006.1
15,258,234.4	14,716,305.4	541,929.0
17,608,232.8	16,928,880.9	679,352.0
19,266,249.4	18,451,176.9	815,072.6
20,258,768.5	19,330,323.6	928,444.9
21,134,934.9	20,062,507.4	1,072,427.5
143,366,096.8	137,571,902.5	5,794,194.3

Forest strata
Humedales – vegetacion inundable
Vegetacion de tierra firme
Anthropogenic forest
Mountain forest (PNCAZ class)
Hill Forest (PNCAZ class)
Alluvial forest (PNCAZ class)
total area

PROPCS
 PROPIMM
 PROPLB
 LKPROP

Year
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

ha	AGB t CO ₂ /ha	area/weighted average
246,079	454.8	58.3
1,585,596	343.4	283.6
86,874	366.2	16.6
826	508.9	0.2
425	350.5	0.1
512	213.8	0.1
1,920,311		358.8

1.048852186

0.325048379

0.028243184

0.331298819

ΔCBSL,LK,unplanned (t CO ₂ -e)	ΔCP,LB1 (t CO ₂ -e)	LKPROP	ΔCLK-ASU,OLB
6,910,840.74	7,277,742.76	0.33	121,554.21
7,497,174.15	7,889,290.32	0.33	129,907.62
9,658,074.47	9,925,479.70	0.33	88,591.04
11,162,792.89	11,485,331.79	0.33	106,856.76
12,853,826.09	13,261,832.18	0.33	135,171.94
14,716,305.43	15,258,234.44	0.33	179,540.44
16,928,880.86	17,608,232.83	0.33	225,068.51
18,451,176.86	19,266,249.42	0.33	270,032.58
19,330,323.63	20,258,768.53	0.33	307,592.70
20,062,507.39	21,134,934.86	0.33	355,293.95

$$\Delta\text{CLK-AS,unplanned} = \Delta\text{CLK-A SU-LB} + \Delta\text{CLK-ASU-OLB} + \text{GHGLK,E}$$

Year	$\Delta\text{CLK-ASU-LB}$	$\Delta\text{CLK-ASU,OLB}$	GHGLK,E	$\Delta\text{CLK-AS,unplanned}$
2009	366,902.0	121,554.2	0.0	488,456.2
2010	392,116.2	129,907.6	0.0	522,023.8
2011	267,405.2	88,591.0	0.0	355,996.3
2012	322,538.9	106,856.8	0.0	429,395.7
2013	408,006.1	135,171.9	0.0	543,178.0
2014	541,929.0	179,540.4	0.0	721,469.5
2015	679,352.0	225,068.5	0.0	904,420.5
2016	815,072.6	270,032.6	0.0	1,085,105.1
2017	928,444.9	307,592.7	0.0	1,236,037.6
2018	1,072,427.5	355,294.0	0.0	1,427,721.4

Datos MUF 2011

Centro poblado o comunidad	Fecha de fundación	# total de la población	# households	total surveyed	Natural
Pucallpa	1835	993	190	344	328
Pongo Isla	1920	207	57	169	164
Porvenir	2003	300	38	181	67
Tahiti	2003	182	37	168	24
Ricardo Palma	undetermined	297	undetermined		
Callanayacu	1925	650	80	210	158
Selva Andina	2001	295	88	219	48
Challual	1998	1900	450	505	129
Puente Juanita	2005	300	60	290	52
Los Cedros	1998	228	60		
La Cumbre	undetermined	90	20		

5145

2086

immigrant (>5 years)	# recent imms (= or < 5 years)	areas of origin of immigrants	% immigrants	weighted average % immigrants
8	8	undetermined	2.3%	0.00448844
4	1	undetermined	0.6%	0.000238066
51	63	undetermined	34.8%	0.020295411
9	135	San Martín, Amazonas y Cajamarca	80.4%	0.028425656
	57	undetermined	19.2%	0.011078717
47	5	undetermined	2.4%	0.003008006
50	121	Piura, Cajamarca, Dorado, Amazonas, etc.	55.3%	0.031679469
168	208	Cajamarca, Lambayeque, Amazonas, Piura, etc.	41.2%	0.15210384
54	184	Cajamarca, Lamayeque, amazonas, piura, etc	63.4%	0.036996079
	188	undetermined	82.5%	0.03654033
	1	Utucuro (Alto Ucayali)	1.1%	0.000194363
				32.5%

Criterios

Region de Referencia (distrito)	Centro Poblado	MUF	< 2km
Huimbayoc	Santa Rosillo		x
Huimbayoc	Pongo Isla	x	x
Huimbayoc	Pucallpa	x	x
Chazuta	San Juan de Solterito		x
Chazuta	Ricardo Palma	x	x
Chazuta	Callanayacu	x	x
Shamboayacu	Porvenir	x	x
Shamboayacu	Progreso		x
Pampa Hermosa	Flor de Café		x
Pampa Hermosa	Nuevo Loreto		x
Pampa Hermosa	Tahiti	x	x
Pampa Hermosa	San Lor		x
Pampa Hermosa	Playa Hermosa		x
Alto Biavo	Los Cedros	x	x
Bajo Biavo	Selva Andina	x	x
Alto Biavo	Challual	x	x
Alto Biavo	Juanita	x	x
Alto Biavo	Las Palmas		x
Jose Crespo y Castillo	Maronilla		x
Contamana	Nuevo eden		x
Contamana	La Cumbre	x	

Year	CTOT Net green	10% of baseline in project area by year
2009	1,834,510.1	183,451.0
2010	1,960,580.9	196,058.1
2011	1,337,026.1	133,702.6
2012	1,612,694.5	161,269.4
2013	2,040,030.5	204,003.0
2014	2,709,645.1	270,964.5
2015	3,396,759.9	339,676.0
2016	4,075,362.8	407,536.3
2017	4,642,224.5	464,222.5
2018	5,362,137.3	536,213.7

Withproject ex-ante estimates

Year	$\Delta CP, DefPA, i, t$ (t CO ₂ -e)	$\Delta CP, Deg, i, t$ (t CO ₂ -e)
2009	183,451.0	0
2010	196,058.1	0
2011	133,702.6	0
2012	161,269.4	0
2013	204,003.0	0
2014	270,964.5	0
2015	339,676.0	0
2016	407,536.3	0
2017	464,222.5	0
2018	536,213.7	0

$\Delta CP, DistPA, i, t$	GHGP-E, i, t (t CO2-e)	$\Delta CP, Enh, i, t$ (t CO2-e)	ΔCP (t CO2-e)
0	0	0	183,451.0
0	0	0	196,058.1
0	0	0	133,702.6
0	0	0	161,269.4
0	0	0	204,003.0
0	0	0	270,964.5
0	0	0	339,676.0
0	0	0	407,536.3
0	0	0	464,222.5
0	0	0	536,213.7
			2,897,097.2

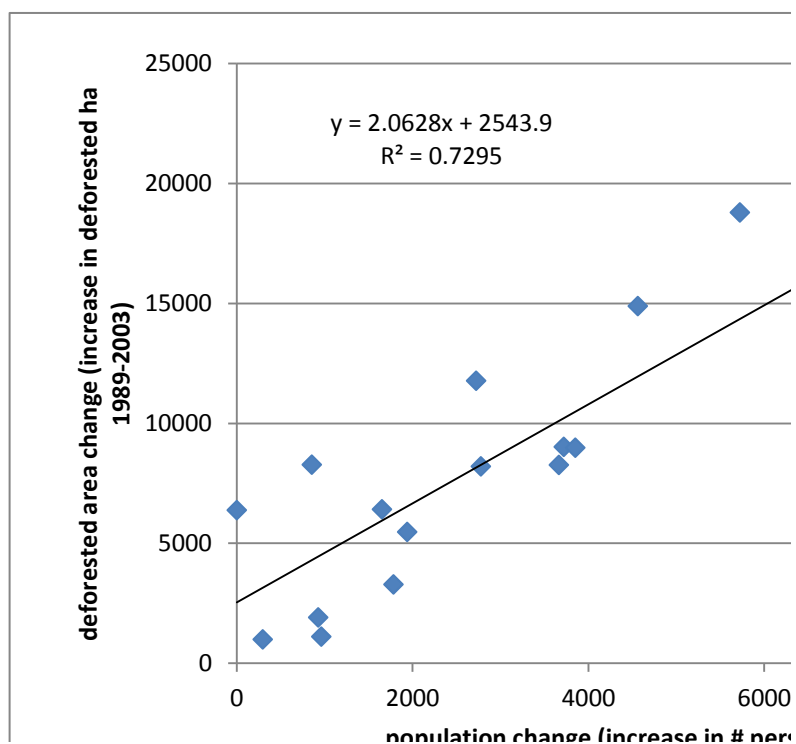
Years	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Risk buffer (%)
2009	1,834,510	183,451	488,456	10%
2010	1,960,581	196,058	522,024	10%
2011	1,337,026	133,703	355,996	10%
2012	1,612,694	161,269	429,396	10%
2013	2,040,030	204,003	543,178	10%
2014	2,709,645	270,965	721,469	10%
2015	3,396,760	339,676	904,420	10%
2016	4,075,363	407,536	1,085,105	10%
2017	4,642,225	464,222	1,236,038	10%
2018	5,362,137	536,214	1,427,721	10%
Total	28,970,972	2,897,097	7,713,804	

Deductions for AFOLU pooled buffer account	Estimated net GHG emission reductions or removals (tCO ₂ e)
165,106	997,497
176,452	1,066,047
120,332	726,995
145,143	876,887
183,603	1,109,247
243,868	1,473,343
305,708	1,846,955
366,783	2,215,939
417,800	2,524,164
482,592	2,915,610
2,607,387	15,752,683

DEPARTAMENTO, PROVINCIA Y DISTRITO	CENSUS	CENSUS	CENSUS	interval interval			2008	2009
	1993	2005	2007				Total	Total
	Total	Total	Total	1	2	diff	Total	Total
ALTO BIAVO	3,839	5,396	6,067	129.75	335.5	205.75	6,433	6,821
BAJO BIAVO	3,611	8,594	11,889	415.25	1647.5	1232.3	13,984	16,447
CAMPANILLA	8,499	7,526	8,309	-81.08	391.5	472.58	8,731	9,173
HUALLAGA	2,190	2,912	2,882	60.167	-15	-75.17	2,867	2,852
NUEVO PROGRESO	9,209	9,569	11,502	30	966.5	936.5	12,610	13,825
PAJARILLO	3,720	5,072	5,255	112.67	91.5	-21.17	5,347	5,438
SAN CRISTOBAL	1,020	1,240	1,321	18.333	40.5	22.167	1,363	1,407
SHAMBOYACU	2,333	5,637	7,107	275.33	735	459.67	7,980	8,960
TINGO DE PONASA	2,605	4,153	4,055	129	-49	-178	4,006	3,957
TRES UNIDOS	2,431	3,335	4,175	75.333	420	344.67	4,671	5,227
CHAZUTA	8,600	9,563	8,835	80.25	-364	-444.3	8,471	8,107
CONTAMANA	17,106	21,873	24,557	397.25	1342	944.75	26,020	27,570
HUIMBAYOC	6,089	4,539	4,528	-129.2	-5.5	123.67	4,523	4,517
INAHUAYA	1,433	2,120	2,266	57.25	73	15.75	2,343	2,422
PAMPA HERMOSA	3,603	5,067	7,690	122	1311.5	1189.5	9,474	11,671
VARGAS GUERRA	7,013	8,431	8,734	118.17	151.5	33.333	8,890	9,048
total change							9,733	

DEFORESTATION PROJECTIONS		SLOPE: Y INTERCEPT		HECTARE
		2.2304	1796.4	
				2009
ALTO BIAVO				994
BAJO BIAVO				5623
CAMPANILLA				1116
HUALLAGA				0
NUEVO PROGRESO				2839
PAJARILLO				332
SAN CRISTOBAL				226
SHAMBOYACU				2315
TINGO DE PONASA				0
TRES UNIDOS				1367
CHAZUTA				0
CONTAMANA				3586
HUIMBAYOC				0
INAHUAYA				305
PAMPA HERMOSA				5029
VARGAS GUERRA				481
TOTAL				24215

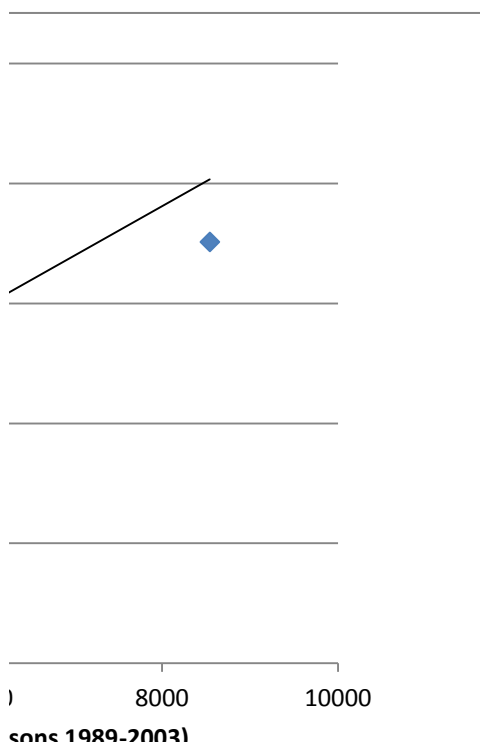
INEI population data	1989	1999	2003	change 1989-2003	change 1999-2003
ALTO BIAVO	2788	4,571	5,510	2,722	939
BAJO BIAVO	3151	4,217	8,873	5,722	4,656
CAMPANILLA	4009	11,785	8,570	4,561	
CHAZUTA	6271	10,984	9,047	2,776	
CONTAMANA	14391	20,233	22,935	8,544	2,702
HUALLAGA	1796	2,274	2,757	961	483
HUIMBAYOC	5603	8,082	5,093		
INAHUAYA	1132	2,054	2,058	926	4
NUEVO PROGRESO	9316	11,255	11,098	1,782	
PAJARILLO	3230	4,611	4,881	1,651	270
PAMPA HERMOSA	2704	4,340	6,423	3,719	2,083
SAN CRISTOBAL	975	1,065	1,270	295	205
SHAMBOYACU	1545	2,943	5,395	3,850	2,452
TINGO DE PONASA	2844	2,734	3,697	853	963
TRES UNIDOS	1763	3,047	3,701	1,938	654
VARGAS GUERRA	4836	9,063	8,499	3,663	



population change (increase in % per:

	Areas no bosque - poligonos de mayores a 0.5 ha (concepto de bosque Peru MDL) minus areas PD	Areas no bosque - poligonos de mayores a 0.5 ha (concepto de bosque Peru MDL) minus areas PD
distrito	1989	1999
ALTO BIAVO	11354.58	17275.86
BAJO BIAVO	19863.81	29751.39
CAMPANILLA	28978.02	38501.91
CHAZUTA	14737.05	20206.35
CONTAMANA	21228.93	28843.20
HUALLAGA	2245.14	3156.12
HUIMBAYOC	15500.79	19426.32
INAHUAYA	1836.00	2371.05
NUEVO PROGRESO	26997.12	29832.66
PAJARILLO	13905.63	19026.09
PAMPA HERMOSA	8269.74	11721.78
SAN CRISTOBAL	1132.11	1837.08
SHAMBOYACU	6477.30	11167.29
TINGO DE PONASA	13292.73	17842.50
TRES UNIDOS	6743.61	9470.52
VARGAS GUERRA	7439.94	11889.72
total non forest	200002.50	272319.84
Total deforestation (in each year)	200002.50	72317.34

Forest



1903-2003

Areas no bosque - poligonos de mayores a 0.5 ha (concepto de bosque Peru MDL) minus areas PD	change 1989- 2003	change 1999-2003
2003		
23133.24	11778.66	5857.38
38658.15	18794.34	8906.76
43869.33	14891.31	5367.42
22945.86	8208.81	2739.51
38794.14	17565.21	9950.94
3357.27	1112.13	201.15
21885.39	6384.60	2459.07
3748.86	1912.86	1377.81
30285.00	3287.88	452.34
20324.61	6418.98	1298.52
17293.23	9023.49	5571.45
2128.50	996.39	291.42
15464.79	8987.49	4297.50
21573.09	8280.36	3730.59
12219.21	5475.60	2748.69
15709.32	8269.38	3819.60

331389.99

59070.15

pop defor area
change 1989-2003 change 1989-2003

2722	11778.66
5722	18794.34
4561	14891.31
2776	8208.81
8544	17565.21
961	1112.13
926	1912.86
1782	3287.88
1651	6418.98
3719	9023.49
295	996.39
3850	8987.49
853	8280.36
1938	5475.6
3663	8269.38

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.87627
R Square	0.767848
Adjusted R Square	0.749991
Standard Error	2786.983
Observations	15

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>
Regression	1	3.34E+08	3.34E+08
Residual	13	1.01E+08	7767277
Total	14	4.35E+08	

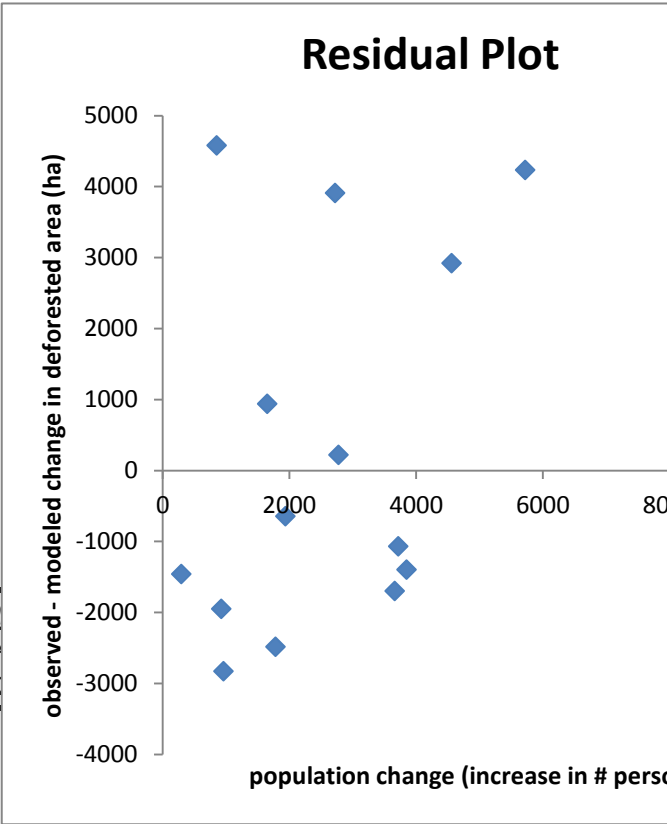
	<i>Coefficient</i>	<i>standard Error</i>	<i>t Stat</i>
Intercept	1796.439	1229.5	1.461114
X Variable 1	2.230428	0.340145	6.557278

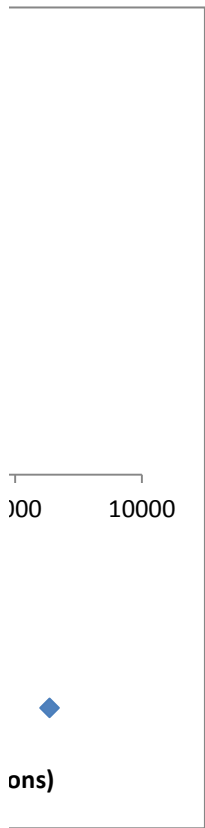
RESIDUAL OUTPUT

<i>Observation</i>		<i>Predicted Y</i>	<i>Residuals</i>	
	1	7867.664	3910.996	3910.996
	2	14558.95	4235.392	4235.392
	3	11969.42	2921.889	2921.889
	4	7988.107	220.703	220.703
	5	20853.22	-3288.01	-3288.01
	6	3939.88	-2827.75	-2827.75
	7	3861.815	-1948.96	-1948.96
	8	5771.062	-2483.18	-2483.18
	9	5478.875	940.1045	940.1045
	10	10091.4	-1067.91	-1067.91
	11	2454.415	-1458.03	-1458.03
	12	10383.59	-1396.1	-1396.1
	13	3698.994	4581.366	4581.366
	14	6119.008	-643.408	-643.408
	15	9966.497	-1697.12	-1697.12

<i>F</i>	<i>significance F</i>
42.9979	1.83E-05

<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>ower 95.0%</i>	<i>Upper 95.0%</i>
0.167731	-859.734	4452.611	-859.734	4452.611
1.83E-05	1.495589	2.965268	1.495589	2.965268





$R^2=$
0.77

t=2.000

DF=13

R^2 analysis

OBSERVED

change def

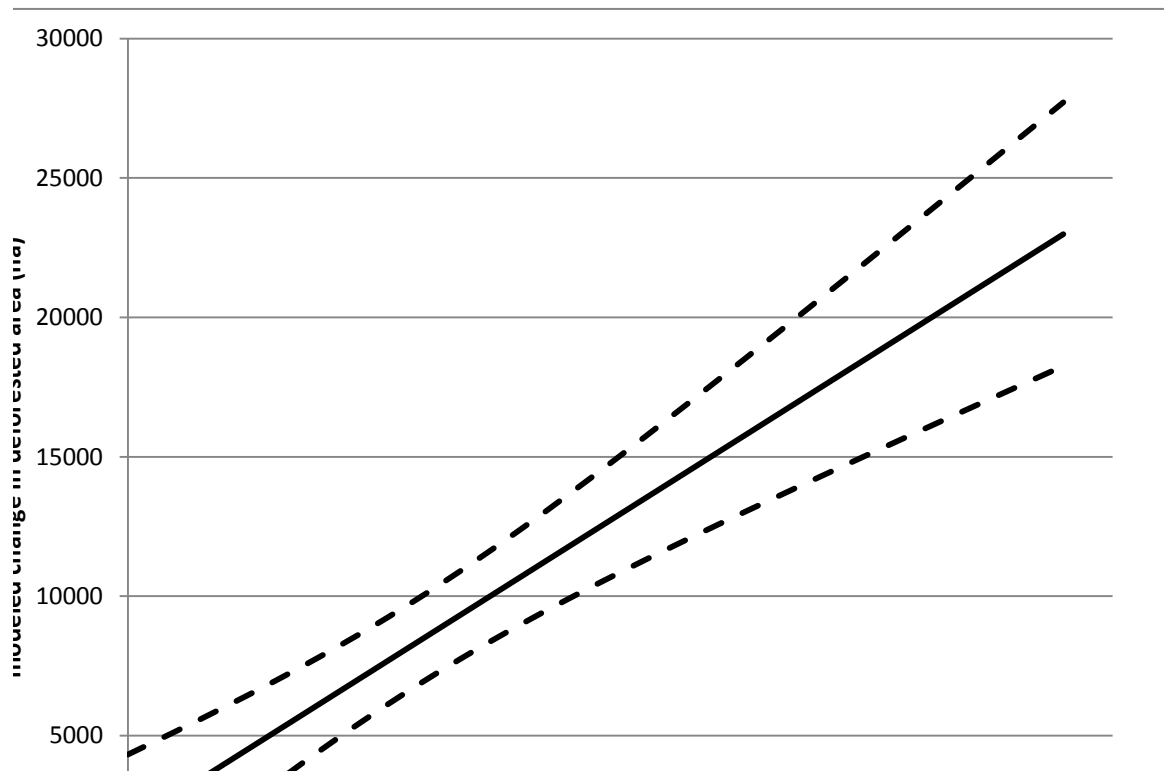
model	change pop	change defor	95% C.I.		95% CI
			plus	minus	as % of y
0		1796.4	4319.4	-726.6	140%
500		2911.6	5175.4	647.8	78%
1000		4026.8	6055.4	1998.2	50%
1500		5142.0	6968.9	3315.1	36%
2000		6257.2	7927.8	4586.6	27%
2500		7372.4	8945.9	5798.9	21%
3000		8487.6	10034.3	6940.9	18%
3500		9602.8	11196.5	8009.1	17%
4000		10718.0	12426.5	9009.5	16%
4500		11833.2	13711.9	9954.5	16%
5000		12948.4	15039.2	10857.6	16%
5500		14063.6	16397.0	11730.2	17%
6000		15178.8	17776.7	12580.9	17%
6500		16294.0	19172.4	13415.6	18%
7000		17409.2	20579.8	14238.6	18%
7500		18524.4	21996.0	15052.8	19%
8000		19639.6	23418.8	15860.4	19%
8500		20754.8	24846.7	16662.9	20%
9000		21870.0	26278.7	17461.3	20%
9500		22985.2	27714.0	18256.4	21%
10000		24100.4	29151.8	19049.0	21%
10500		25215.6	30591.9	19839.3	21%
11000		26330.8	32033.7	20627.9	22%
11500		27446.0	33477.0	21415.0	22%
12000		28561.2	34921.6	22200.8	22%
12500		29676.4	36367.2	22985.6	23%
13000		30791.6	37813.8	23769.4	23%
13500		31906.8	39261.2	24552.4	23%
14000		33022.0	40709.3	25334.7	23%
14500		34137.2	42158.0	26116.4	23%
15000		35252.4	43607.2	26897.6	24%
15500		36367.6	45056.9	27678.3	24%
16000		37482.8	46507.0	28458.6	24%
16500		38598.0	47957.5	29238.5	24%
17000		39713.2	49408.3	30018.1	24%
17500		40828.4	50859.5	30797.3	25%
18000		41943.6	52310.9	31576.3	25%
18500		43058.8	53762.6	32355.0	25%
19000		44174.0	55214.5	33133.5	25%
19500		45289.2	56666.5	33911.9	25%

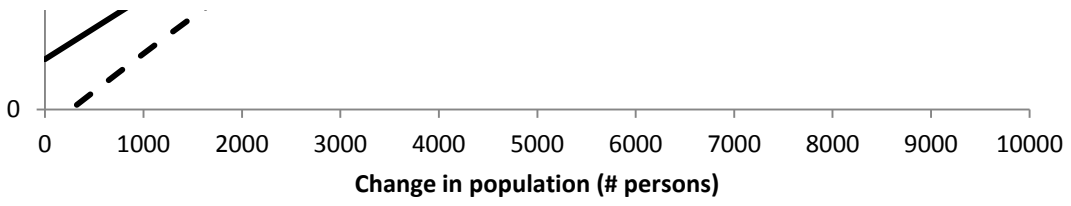
11778.66
18794.34
14891.31
8208.81
17565.21
1112.13
1912.86
3287.88
6418.98
9023.49
996.39
8987.49
8280.36
5475.6
8269.38
8333.526
mean

modeled change in defracted area (ha)

20000	46404.4	58118.8	34690.0	25%
20500	47519.6	59571.3	35467.9	25%
21000	48634.8	61023.9	36245.7	25%
21500	49750.0	62476.7	37023.3	26%
22000	50865.2	63929.5	37800.9	26%
22500	51980.4	65382.6	38578.2	26%
23000	53095.6	66835.7	39355.5	26%
23500	54210.8	68288.9	40132.7	26%
24000	55326.0	69742.3	40909.7	26%
24500	56441.2	71195.7	41686.7	26%
25000	57556.4	72649.2	42463.6	26%
25500	58671.6	74102.8	43240.4	26%
26000	59786.8	75556.5	44017.1	26%
26500	60902.0	77010.2	44793.8	26%
27000	62017.2	78464.0	45570.4	27%
27500	63132.4	79917.9	46346.9	27%
28000	64247.6	81371.8	47123.4	27%
28500	65362.8	82825.8	47899.8	27%
29000	66478.0	84279.8	48676.2	27%
29500	67593.2	85733.9	49452.5	27%
30000	68708.4	87188.1	50228.7	27%
30500	69823.6	88642.2	51005.0	27%
31000	70938.8	90096.5	51781.1	27%
31500	72054.0	91550.7	52557.3	27%
32000	73169.2	93005.0	53333.4	27%
32500	74284.4	94459.3	54109.5	27%
33000	75399.6	95913.7	54885.5	27%
33500	76514.8	97368.1	55661.5	27%
34000	77630.0	98822.5	56437.5	27%
34500	78745.2	100277.0	57213.4	27%
35000	79860.4	101731.4	57989.4	27%
35500	80975.6	103186.0	58765.2	27%
36000	82090.8	104640.5	59541.1	27%
36500	83206.0	106095.0	60317.0	28%
37000	84321.2	107549.6	61092.8	28%
37500	85436.4	109004.2	61868.6	28%
38000	86551.6	110458.8	62644.4	28%
38500	87666.8	111913.5	63420.1	28%
39000	88782.0	113368.2	64195.8	28%

		residual stan dev		MSE	SQRT MSE
		2786.983		6731639.92	2594.54
		RSS			
change pop	predicted	y-yhat^2	y^2	x^2	
2722	7867.5	15296790.82	11868948.28	43625.3	
5722	14558.7	17940232.81	109428629.54	7790425.3	
4561	11969.3	8538408.93	43004530.99	2657334.7	
2776	7988.0	48761.30	15554.08	23983.7	
8544	20852.9	10809152.77	85223989.48	31507265.8	
961	3939.8	7995799.07	52148560.19	3880374.7	
926	3861.8	3798173.79	41224951.88	4019490.4	
1782	5771.0	6165749.85	25458543.56	1319894.6	
1651	5478.8	883956.48	3665486.39	1638058.7	
3719	10091.3	1140127.65	476050.32	621154.2	
295	2454.4	2125699.85	53833564.68	6947793.1	
3850	10383.4	1948676.40	427668.91	844806.1	
853	3698.9	20989489.85	2826.62	4317529.9	
1938	6118.9	413854.45	8167741.02	985784.2	
3663	9966.4	2879724.83	4114.71	536019.2	
2930.866667		100974598.85	434951160.65	67133539.73	
mean		sum	sum		
		R^2=	0.767848421		





FOM values	current			predicted			actual
False Alarms	3	79456.14	1		2		1
Misses	5	61315.2	1		1		2
Correct	6	18632.97	1		2		2

Clase campo			Clase mapa		Total	Exactitud (%)	Error de Omisión (%)
			Bosque	No Bosque			
Bosque primario	72	Bosque	96	9	105	91.4	8.6
Purma alta	2	-105					
Café bajo sombra	31						
Purma media/baja	42	No bosque	10	199	209	95.2	4.8
Cultivos diferentes al café bajo sombra	76	-209					
Sin cobertura	91						
Total			106	208	314		
Exactitud (%)			90.6	95.7			
Error de comisión (%)			9.4	4.3			

0.116891 11.70%