

ANEXOS

Anexo 1
Consumo de madera en trozas de Pino radiata por rubro industrial: 1970-2003
(miles de m3 ssc)

ANO	TOTAL	PULPA	PULPA	MADERA	TABLEROS	TROZAS	TROZAS	ASTILLAS	CAJONES
		MECANICA	QUIMICA	ASERRADA	Y CHAPAS	ASERRABLES	PULPABLES	PROV.	POSTES
			(1)		(1)	EXPORT.	EXPORT.	MAD.PUL:	
1970	3.694		1.570	2.021	97				7
1971	3.609		1.470	2.021	99				19
1972	3.750		1.607	2.021	101				21
1973	4.190		2.173	1.898	114				6
1974	4.306	298	1.600	2.300	108				
1975	3.560	275	1.662	1.555	62	6			
1976	4.814	311	1.989	2.413	83	17	0	0	0
1977	4.877	313	2.417	1.871	129	147	0	0	0
1978	6.685	323	2.731	2.827	129	674	0	0	0
1979	8.224	326	2.872	3.910	163	954	0	0	0
1980	7.611	255	2.343	3.833	177	1.004	0	0	0
1981	6.732	312	2.758	3.041	262	360	0	0	0
1982	5.931	289	2.432	2.117	205	888	0	0	0
1983	7.498	409	2.866	2.974	225	1.023	0	0	0
1984	8.115	391	3.056	3.573	195	901	0	0	0
1985	8.657	394	2.862	3.910	219	1.257	14	0	0
1986	8.463	416	3.018	3.638	229	1.023	139	0	0
1987	10.453	439	3.037	4.827	257	1.270	623	0	0
1988	11.095	476	2.919	4.976	389	1.389	946	0	0
1989	10.035	431	2.566	4.855	448	861	617	257	0
1990	10.718	414	2.023	6.000	457	1.030	235	387	172
1991	11.374	472	2.917	5.823	450	751	313	505	144
1992	14.007	500	5.718	5.427	474	1.029	162	447	251
1993	14.626	463	5.465	5.635	608	1.390	62	712	290
1994	16.006	501	5.977	6.182	642	1.550	122	702	331
1995	18.548	755	6.253	7.403	722	1.665	274	1.159	316
1996	17.995	524	5.998	7.852	635	1.391	132	1.111	352
1997	18.369	526	5.773	8.926	620	1.436	105	659	325
1998	16.409	577	5.654	8.470	643	221	116	512	216
1999	17.739	635	5.281	9.701	731	395	96	389	512
2000	18.806	764	5.733	10.618	810	64	95	276	447
2001	20.385	1.012	6.441	11.288	955	39	118	162	371
2002	20.188	852	5.268	11.999	1.193	139	137	159	440
2003	22.088	815	5.992	13.144	1.326	25	148	229	409

Anexo 2

Superficie de plantaciones, nacional y por Región

Total nacional: superficie por edad y régimen de manejo (hectáreas)

EDAD	Esquema de Manejo				TOTAL
	1	2 y 3	4	5 a 8	
	Pulpable	Aserrable	Multipropósito	Poda	
0	2.653	12.234	7.380	31.555	53.822
1	7.260	12.452	6.891	25.293	51.896
2	5.406	15.039	9.429	33.883	63.756
3	3.312	17.189	9.372	30.192	60.065
4	3.733	17.147	9.076	28.623	58.579
5	5.472	22.431	8.798	34.839	71.540
6	6.981	17.665	8.562	43.281	76.488
7	9.104	28.429	6.358	29.180	73.070
8	9.234	31.499	5.295	22.940	68.967
9	10.860	29.873	3.766	22.338	66.836
10	9.391	25.900	8.555	23.545	67.391
11	11.867	29.357	8.456	26.117	75.797
12	9.314	24.118	6.749	25.208	65.389
13	7.565	21.051	3.262	28.305	60.183
14	9.427	15.697	3.638	21.983	50.745
15	16.206	5.885	1.799	22.654	46.544
16	16.016	6.073	3.045	18.793	43.927
17	26.968	9.094	2.610	17.786	56.459
18	25.158	8.292	2.179	18.754	54.383
19	14.628	5.239	2.633	19.731	42.230
20	17.950	5.577	4.195	23.284	51.006
21	15.144	5.897	3.978	29.226	54.245
22	10.530	5.213	1.783	16.740	34.265
23	6.147	2.652	1.881	9.765	20.444
24	7.585	2.171	1.388	7.381	18.525
25	6.935	1.810	910	5.156	14.811
26	7.798	1.080	2.084	3.597	14.558
27	3.233	855	384	2.231	6.702
28	1.987	486	59	233	2.764
29	1.807	262	148	55	2.271
>= 30	5.497	1.603	438	443	7.980
TOTAL	295.165	382.269	135.096	623.109	1.435.639

Región 5: superficie por edad y régimen de manejo (hectáreas)

EDAD	Esquema de Manejo				TOTAL
	1	2 y 3	4	5 a 8	
	Pulpable	Aserrable	Multipropósito	Poda	
0	45	110	52	116	323
1	80	194	91	205	569
2	9	22	10	23	64
3	16	40	19	42	116
4	109	264	124	280	777
5	62	149	70	158	440
6	94	228	107	241	670
7	97	234	110	248	689
8	487	487	0	0	974
9	223	223	0	0	445
10	246	246	0	0	492
11	709	709	0	0	1.418
12	379	379	0	0	759
13	207	207	0	0	413
14	244	244	0	0	488
15	600	189	0	0	789
16	221	70	0	0	291
17	452	143	0	0	595
18	285	90	0	0	375
19	491	155	0	0	646
20	265	84	0	0	349
21	474	150	0	0	624
22	542	0	0	0	542
23	138	0	0	0	138
24	332	0	0	0	332
25	318	0	0	0	318
26	33	0	0	0	33
27	430	0	0	0	430
28	149	0	0	0	149
29	110	0	0	0	110
>= 30	825	0	0	0	825
TOTAL	8.669	4.616	584	1.314	15.182

Región 6: superficie por edad y régimen de manejo (hectáreas)

EDAD	Esquema de Manejo				TOTAL
	1	2 y 3	4	5 a 8	
	Pulpable	Aserrable	Multipropósito	Poda	
0	182	526	91	701	1.501
1	312	1.431	442	559	2.744
2	518	2.334	121	2.652	5.625
3	242	2.995	262	779	4.278
4	352	1.626	180	1.777	3.934
5	316	957	283	1.166	2.722
6	379	1.051	222	1.640	3.292
7	376	1.207	642	1.273	3.497
8	852	3.369	398	0	4.620
9	906	3.558	259	0	4.722
10	601	2.565	165	0	3.331
11	429	1.647	199	0	2.275
12	483	1.905	168	0	2.556
13	385	1.650	86	0	2.120
14	579	730	100	0	1.409
15	775	365	0	0	1.140
16	1.076	348	0	0	1.424
17	1.913	954	27	194	3.089
18	2.940	0	8	220	3.168
19	1.860	0	0	0	1.860
20	1.027	249	0	0	1.276
21	1.149	42	0	0	1.191
22	602	0	0	0	602
23	852	0	0	0	852
24	1.792	0	0	0	1.792
25	1.388	0	0	0	1.388
26	3.324	0	0	48	3.372
27	152	0	0	0	152
28	186	0	0	0	186
29	147	0	0	0	147
>= 30	563	0	0	0	563
TOTAL	26.658	29.508	3.653	11.009	70.828

Región 7: superficie por edad y régimen de manejo (hectáreas)

EDAD	Esquema de Manejo				TOTAL
	1	2 y 3	4	5 a 8	
	Pulpable	Aserrable	Multipropósito	Poda	
0	1.004	4.987	2.328	5.732	14.052
1	3.096	5.158	2.667	5.746	16.666
2	595	6.830	2.081	5.303	14.808
3	590	8.423	3.943	3.237	16.192
4	415	7.876	2.325	3.254	13.871
5	485	10.210	2.364	6.610	19.669
6	1.384	6.735	870	8.619	17.608
7	2.909	14.036	459	2.928	20.331
8	2.978	11.250	299	2.801	17.328
9	3.324	10.849	157	1.014	15.344
10	2.856	10.319	449	1.615	15.238
11	3.290	7.996	584	3.388	15.258
12	2.283	9.170	184	4.046	15.683
13	3.096	7.561	243	3.375	14.275
14	3.379	4.635	384	2.199	10.597
15	6.621	1.502	690	2.336	11.149
16	6.056	2.346	127	2.986	11.515
17	11.186	3.865	319	3.862	19.232
18	8.841	3.936	476	4.048	17.301
19	4.422	1.933	476	3.539	10.370
20	5.934	2.250	169	3.865	12.218
21	3.854	2.365	700	4.322	11.241
22	3.006	1.509	106	2.064	6.685
23	886	758	426	505	2.574
24	1.226	997	86	584	2.894
25	867	706	6	283	1.862
26	606	566	173	193	1.536
27	449	231	5	22	707
28	190	132	26	68	415
29	413	126	75	8	621
>= 30	742	186	106	43	1.078
TOTAL	86.980,4	149.442,6	23.297,7	88.592,9	348.313,6

Región 8: superficie por edad y régimen de manejo (hectáreas)

EDAD	Esquema de Manejo				TOTAL
	1	2 y 3	4	5 a 8	
	Pulpable	Aserrable	Multipropósito	Poda	
0	1.348	6.181	4.782	16.297	28.608
1	3.318	4.793	3.479	10.893	22.483
2	3.722	4.373	4.957	17.477	30.530
3	1.494	4.491	3.910	17.282	27.178
4	2.113	5.269	4.812	14.841	27.035
5	3.686	8.120	4.779	15.501	32.085
6	4.013	7.203	6.458	19.712	37.386
7	4.167	9.744	4.444	11.386	29.741
8	3.428	10.305	3.215	9.147	26.095
9	4.139	8.360	1.997	9.476	23.971
10	2.750	6.838	1.364	9.931	20.883
11	3.531	9.693	2.215	11.881	27.320
12	3.605	8.352	910	11.598	24.464
13	2.476	7.866	701	14.592	25.636
14	2.766	6.703	534	12.556	22.559
15	4.403	2.521	717	11.702	19.343
16	3.723	2.364	2.278	8.999	17.364
17	7.053	2.055	1.999	8.904	20.011
18	6.056	2.763	798	9.341	18.959
19	4.517	2.264	1.353	12.149	20.282
20	5.834	1.851	2.133	15.557	25.375
21	4.678	1.976	2.478	18.034	27.166
22	3.075	2.602	1.160	8.001	14.838
23	2.717	1.240	858	5.710	10.525
24	1.879	679	675	5.482	8.714
25	1.776	676	125	3.301	5.877
26	1.499	292	894	1.497	4.182
27	830	368	370	1.902	3.470
28	568	265	27	141	1.001
29	744	75	73	39	931
>= 30	1.657	1.173	328	286	3.444
TOTAL	97.564	131.455	64.820	313.615	607.455

Región 9: superficie por edad y régimen de manejo (hectáreas)

EDAD	Esquema de Manejo				TOTAL
	1	2 y 3	4	5 a 8	
	Pulpable	Aserrable	Multipropósito	Poda	
0	66	183	99	6.418	6.766
1	451	555	122	5.851	6.979
2	549	1.402	1.847	6.170	9.968
3	950	1.159	929	6.335	9.372
4	742	1.917	1.252	5.761	9.672
5	914	2.694	757	8.410	12.775
6	1.076	2.396	502	8.635	12.610
7	1.443	2.686	129	10.922	15.180
8	1.363	4.530	466	7.927	14.286
9	2.146	4.989	574	7.166	14.875
10	2.671	4.897	5.194	5.325	18.088
11	2.934	8.142	3.423	5.403	19.901
12	2.141	3.346	2.666	6.121	14.274
13	1.266	1.758	1.268	6.849	11.141
14	1.837	2.057	1.882	3.428	9.204
15	3.093	569	384	4.031	8.077
16	3.570	573	556	3.630	8.329
17	5.052	1.568	261	2.584	9.466
18	5.261	884	721	2.846	9.711
19	2.596	673	799	3.043	7.111
20	3.595	1.019	1.856	3.574	10.044
21	4.176	1.206	683	5.418	11.483
22	1.731	1.056	516	5.927	9.230
23	1.041	612	475	2.690	4.817
24	1.172	452	573	656	2.853
25	1.577	312	671	840	3.399
26	1.398	190	949	1.339	3.876
27	1.181	215	9	136	1.541
28	519	89	6	14	628
29	219	49		7	274
>= 30	1.230	200	3	89	1.522
TOTAL	57.961	52.377	29.570	137.545	277.452

Región 10: superficie por edad y régimen de manejo (hectáreas)

EDAD	Esquema de Manejo				TOTAL
	1	2 y 3	4	5 a 8	
	Pulpable	Aserrable	Multipropósito	Poda	
0	7	246	29	2.291	2.573
1	4	322	90	2.039	2.454
2	13	78	412	2.257	2.760
3	19	81	311	2.517	2.928
4	2	196	383	2.710	3.290
5	10	301	546	2.994	3.851
6	34	52	403	4.434	4.923
7	112	521	575	2.424	3.632
8	126	1.558	917	3.065	5.665
9	122	1.896	779	4.682	7.478
10	268	1.035	1.384	6.674	9.360
11	974	1.170	2.036	5.446	9.625
12	423	967	2.821	3.443	7.654
13	135	2.010	964	3.489	6.598
14	623	1.328	737	3.799	6.487
15	713	739	9	4.586	6.046
16	1.370	373	84	3.178	5.004
17	1.312	509	4	2.242	4.066
18	1.776	619	176	2.300	4.870
19	742	215	5	1.000	1.961
20	1.296	124	38	287	1.745
21	813	158	117	1.453	2.541
22	1.575	45	1	748	2.369
23	514	43	122	860	1.538
24	1.184	43	54	659	1.940
25	1.010	116	109	732	1.968
26	938	32	69	520	1.559
27	191	41	0	171	402
28	375	0	0	10	385
29	175	12	0	1	188
>= 30	481	44	0	25	549
TOTAL	17.333	14.871	13.171	71.035	116.409

Anexo 3

Incrementos medios anuales por zona, sitio y manejo. Las edades de rotación para el cálculo de los IMA son: esquema 1 edad 20 años, esquemas 2 y 3, edad 22 años, y esquemas 4 al 8, edad 24 años.

Zona 1. Incremento medio anual por sitio y esquema de manejo

Zona 1					
Sitio	Esq.	Vol. Cosecha	Vol. Raleo	Vol. Total	IMA
1	1	578		578	29
	2	550	40	590	27
	3	519	35	554	25
	4	541	25	566	24
	5	508	51	559	23
	6	502	53	555	23
	7	557	30	587	24
	8	554	30	584	24
2	1	478		478	24
	2	449	41	490	22
	3	422	36	458	21
	4	439	26	465	19
	5	390	49	439	18
	6	387	49	436	18
	7	440	28	468	20
	8	435	28	463	19
3	1	385		385	19
	2	363	42	405	18
	3	342	39	381	17
	4	357	27	384	16
	5	332	60	392	16
	6	327	61	388	16
	7	386	32	418	17
	8	376	33	409	17
4	1	316		316	16
	2	293	46	339	15
	3	277	44	321	15
	4	292	54	346	14
	5	254	62	316	13
	6	251	61	312	13
	7	305	32	337	14
	8	302	32	334	14

Zona 2. Incremento medio anual por sitio y esquema de manejo

Zona 2					
Sitio	Esq.	Vol. Cosecha	Vol. Raleo	Vol. total	IMA
1	1	656		656	33
	2	648	38	686	31
	3	598	35	633	29
	4	636	25	661	28
	5	539	53	592	25
	6	532	55	587	24
	7	679	35	714	30
	8	643	30	673	28
2	1	491		491	25
	2	472	38	510	23
	3	439	37	476	22
	4	448	32	480	20
	5	378	51	429	18
	6	376	51	427	18
	7	462	26	488	20
	8	453	26	479	20
3	1	398		398	20
	2	379	42	421	19
	3	355	38	393	18
	4	376	44	420	18
	5	312	51	363	15
	6	307	52	359	15
	7	379	26	405	17
	8	373	27	400	17
4	1	334		334	17
	2	307	48	355	16
	3	286	44	330	15
	4	306	47	353	15
	5	242	60	302	13
	6	241	60	301	13
	7	308	31	339	14
	8	305	31	336	14

Zona 4. Incremento medio anual por sitio y esquema de manejo

Zona 4					
Sitio	Esq.	Vol. Cosecha	Vol. Raleo	Vol. total	IMA
1	1	666		666	33
	2	611	51	662	30
	3	559	41	600	27
	4	605	35	640	27
	5	465	57	522	22
	6	459	56	515	21
	7	567	32	599	25
	8	545	39	584	24
2	1	563		563	28
	2	518	49	567	26
	3	473	41	514	23
	4	489	29	518	22
	5	395	57	452	19
	6	388	56	444	18
	7	489	30	519	22
	8	468	38	506	21
3	1	449		449	22
	2	408	49	457	21
	3	370	43	413	19
	4	416	60	476	20
	5	312	56	368	15
	6	300	60	360	15
	7	392	28	420	17
	8	385	28	413	17
4	1	349		349	17
	2	308	54	362	16
	3	279	47	326	15
	4	298	59	357	15
	5	248	71	319	13
	6	244	72	316	13
	7	321	35	356	15
	8	319	36	355	15

Zona 5. Incremento medio anual por sitio y esquema de manejo

Zona 5					
Sitio	Esq.	Vol. Cosecha	Vol. Raleo	Vol. total	IMA
2	1	442		442	22
	2	383	83	466	21
	3	369	89	458	21
	4	434	17	451	19
	5	388	41	429	18
	6	381	42	423	18
	7	438	21	459	19
	8	434	21	455	19
3	1	342		342	17
	2	288	64	352	16
	3	265	67	332	15
	4	297	22	319	13
	5	259	53	312	13
	6	245	48	293	12
	7	359	25	384	16
	8	299	25	324	14
4	1	246		246	12
	2	204	52	256	12
	3	181	54	235	11
	4	215	27	242	10
	5	158	52	210	9
	6	163	59	222	9
	7	244	30	274	11
	8	222	29	251	10

Zona 6. Incremento medio anual por sitio y esquema de manejo

Zona 6					
Sitio	Esq.	Vol. Cosecha	Vol. Raleo	Vol. total	IMA
1	1	676		676	34
	2	599	124	723	33
	3	549	123	672	31
	4	635	25	660	27
	5	506	53	559	23
	6	514	62	576	24
	7	638	34	672	28
	8	638	33	671	28
2	1	565		565	28
	2	509	100	609	28
	3	464	99	563	26
	4	542	23	565	24
	5	442	56	498	21
	6	417	50	467	19
	7	528	27	555	23
	8	522	25	547	23
3	1	459		459	23
	2	418	79	497	23
	3	380	78	458	21
	4	442	25	467	19
	5	359	63	422	18
	6	341	55	396	17
	7	436	27	463	19
	8	430	28	458	19
4	1	357		357	18
	2	309	65	374	17
	3	275	61	336	15
	4	303	27	330	14
	5	226	62	288	12
	6	222	63	285	12
	7	300	32	332	14
	8	297	31	328	14

Zona 7. Incremento medio anual por sitio y esquema de manejo

Zona 7					
Sitio	Esq.	Vol. Cosecha	Vol. Raleo	Vol. total	IMA
1	1	520		520	26
	2	521	36	557	25
	3	504	34	538	24
	4	538	23	561	23
	5	496	49	545	23
	6	491	50	541	23
	7	557	27	584	24
	8	550	27	577	24
2	1	435		435	22
	2	424	36	460	21
	3	404	33	437	20
	4	422	23	445	19
	5	377	45	422	18
	6	375	45	420	17
	7	428	24	452	19
	8	426	24	450	19
3	1	361		361	18
	2	347	37	384	17
	3	329	35	364	17
	4	348	24	372	15
	5	318	51	369	15
	6	310	53	363	15
	7	368	28	396	17
	8	362	28	390	16
4	1	303		303	15
	2	282	42	324	15
	3	265	39	304	14
	4	279	47	326	14
	5	248	56	304	13
	6	243	58	301	13
	7	296	32	328	14
	8	291	32	323	13

Zona 9-10. Incremento medio anual por sitio y esquema de manejo

Zona 9					
Sitio	Esq.	Vol. Cosecha	Vol. Raleo	Vol. total	IMA
1	1	621		621	31
	2	585	51	636	29
	3	535	43	578	26
	4	585	41	626	26
	5	498	64	562	23
	6	489	66	555	23
	7	590	38	628	26
	8	579	39	618	26
2	1	530		530	27
	2	498	50	548	25
	3	453	42	495	23
	4	474	32	506	21
	5	389	56	445	19
	6	386	56	442	18
	7	495	32	527	22
	8	467	32	499	21
3	1	427		427	21
	2	394	51	445	20
	3	358	45	403	18
	4	381	56	437	18
	5	330	65	395	16
	6	325	66	391	16
	7	408	36	444	19
	8	401	37	438	18
4	1	339		339	17
	2	301	55	356	16
	3	273	49	322	15
	4	288	64	352	15
	5	228	65	293	12
	6	226	65	291	12
	7	293	35	328	14
	8	290	35	325	14

Anexo 4

Descripción matemática del Modelo de Oferta

a) Variables del modelo de programación lineal

- $X_{przsmij}$: Superficie [ha] de plantaciones del propietario p , en la región r , en zona de crecimiento z , clase de sitio s , esquema de manejo m , plantada en el período i y cosechada en el período j .
- W_{przsmi} : Superficie [ha] de plantaciones del propietario p , en la región r , en zona de crecimiento z , clase de sitio s , esquema de manejo m , plantada en el período i que queda como inventario final (no es cosechada dentro del horizonte de planificación).
- S_{rzsmj} : Superficie total [ha] de plantaciones en la región r , en zona de crecimiento z , clase de sitio s , esquema de manejo m , que es cosechada en el período j .
- F_{przsmj} : Superficie [ha] a forestar por el propietario p , en la región r , en zona de crecimiento z , clase de sitio s , estableciendo una plantación en el período j , con esquema de manejo m .
- F_{pj} : Superficie [ha] a forestar por el propietario p , en la región r , estableciendo una plantación en el período j .
- V_{rmkj} : Volumen [m³] de producto k obtenido por corta final, en el período j , en la región r , proveniente de una plantación con esquema de manejo m .
- R_{rmj} : Volumen [m³] de producto *pulpable* obtenido por raleo comercial, en el período j , en la región r , proveniente de una plantación con esquema de manejo m .
- O_{rkj} : Volumen total [m³] de producto k obtenido por corta final y raleos comerciales, en el período j , en la región r .

b) Coeficientes del modelo

- V_{kzsme} : Rendimiento [m³/ha] de producto k , por corta final de una plantación en zona de crecimiento z , clase de sitio s , esquema de manejo m , que es cosechada a la edad de e períodos. Este coeficiente está corregido por el efecto de plagas, cosecha, técnicas de establecimiento y genética.
- r_{zsme} : Rendimiento [m³/ha] de producto *pulpable*, por raleo comercial de una plantación en zona de crecimiento z , clase de sitio s , esquema de manejo m , que es intervenida a la edad de e períodos.
- SUP_{przsmi} : Coeficiente RHS del modelo, correspondiente a la superficie [ha] de plantaciones en el inventario inicial del propietario p , en la región r , en zona de crecimiento z , clase de sitio s , esquema de manejo m , plantada en el período i .
- FOR_{prj} : Coeficiente RHS del modelo, correspondiente a la superficie [ha] disponible para forestación del propietario p , en la región r , en el período j .

- $SMIN_{mi}$: Coeficiente RHS del modelo, correspondiente a la superficie [ha] mínima exigida para plantaciones del período i , con esquema de manejo m en el inventario final.

b) Formulación del problema lineal

- Función Objetivo:

$$MAX \quad Z = \left(\sum_{k=1}^4 v_{kzsm(j-i)} \right) * \sum_{p=1}^9 \sum_{r=5}^{10} X_{przsmij}$$

- Restricciones

- Restricción de inventario inicial

$$AI_{przsmi}) \quad \sum_{j=0}^9 X_{przsmij} + W_{przsmi} = SUP_{przsmi}$$

$p = 1, \dots, 9; \quad r = 5, \dots, 10; \quad z = 1, \dots, 10;$
 $s = 1, \dots, 3; \quad m = 1, \dots, 5; \quad i = -10, \dots, -1$

- Cuantificación de superficie cosechada

$$SC_{rzsmj}) \quad \sum_{p=1}^9 \sum_{i=-10}^3 X_{przsmij} - S_{rzsmj} = 0$$

$r = 5, \dots, 10; \quad z = 1, \dots, 10; \quad s = 1, \dots, 3;$
 $m = 1, \dots, 5; \quad j = 0, \dots, 9$

- Cuantificación de volumen de corta final

$$VC_{rmkj}) \quad \sum_{z=1}^{10} \sum_{s=1}^3 \sum_{i=-10}^3 (v_{kzsm(j-i)} * \sum_{p=1}^9 X_{przsmij}) - V_{rmkj} = 0$$

$r = 5, \dots, 10; \quad m = 1, \dots, 5; \quad k = 1, \dots, 4;$
 $j = 0, \dots, 9$

- Reforestación (continuidad del inventario)

$$RF_{przsmj}) \quad \sum_{i=-10}^3 X_{przsmij} + F_{przsmj} - \sum_{l=j+6}^9 X_{przsmil} - W_{przsmj} = 0$$

$p = 1, \dots, 9; \quad r = 5, \dots, 10; \quad z = 1, \dots, 10;$
 $s = 1, \dots, 3; \quad m = 1, \dots, 5; \quad j = 0, \dots, 9$

- Cuantificación de volumen de raleos

$$\begin{aligned}
RT_{rmj}) \quad & \sum_{p=1}^9 \sum_{z=1}^{10} \sum_{s=1}^3 \sum_{l=3}^4 \sum_{n=-l}^9 r_{zsm(j-l)} * X_{przsm(j-l)n} + \\
& \sum_{p=1}^9 \sum_{z=1}^{10} \sum_{s=1}^3 \sum_{l=3}^4 r_{zsm(j-l)} * W_{przsm(j-l)} - R_{rmj} = 0 \\
& r = 5, \dots, 10; \quad m = 1, \dots, 5; \quad j = 0, \dots, 9
\end{aligned}$$

- Superficie disponible para forestación

$$\begin{aligned}
FT_{prj}) \quad & F_{prj} \leq FOR_{prj} \\
& p = 1, \dots, 9; \quad r = 5, \dots, 10; \quad j = 0, \dots, 9
\end{aligned}$$

- Cuantificación de superficie forestada

$$\begin{aligned}
FB_{prj}) \quad & F_{prj} - \sum_{z=1}^{10} \sum_{s=1}^3 \sum_{m=1}^5 F_{przsmj} = 0 \\
& p = 1, \dots, 9; \quad r = 5, \dots, 10; \quad j = 0, \dots, 9
\end{aligned}$$

- Cuantificación de oferta total

$$\begin{aligned}
VT_{rkj}) \quad & \sum (V_{rmkj} + R_{rmj}) - O_{rkj} = 0 \\
& r = 5, \dots, 10; \quad k = 1, \dots, 4; \quad j = 0, \dots, 9
\end{aligned}$$

- Superficie mínima por clase de edad en inventario final

$$\begin{aligned}
IF_{mi}) \quad & \sum_{p=1}^9 \sum_{r=5}^{10} \sum_{z=1}^{10} \sum_{s=1}^3 W_{przsmi} \geq SMIN_{mi} \\
& m = 1, \dots, 5; \quad i = 0, \dots, 9
\end{aligned}$$

- Oferta total no decreciente en el tiempo

$$\begin{aligned}
ND_j) \quad & \sum_{r=5}^{10} \sum_{k=1}^4 O_{rkj} - \sum_{r=5}^{10} \sum_{k=1}^4 O_{rk(j-1)} \geq 0 \\
& j = 1, \dots, 9
\end{aligned}$$

Anexo 5

Resultados Escenario (A) Base: Volúmenes en pie.

Cuadro 5.1. Volúmenes anuales en pie, por tipo de producto y año (m3)

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	5.080.349	3.759.565	4.282.993	3.870.148	2.508.503	2.036.560	15.630	83.242	6.462	35.137	381.292	27.660	22.087.541
2004	5.713.972	3.913.540	4.435.456	4.011.506	2.524.491	2.306.352	49.320	267.793	22.723	141.396	1.011.631	74.040	24.472.221
2005	6.002.543	4.301.662	4.809.024	4.183.132	2.645.303	2.753.721	31.373	182.552	14.136	114.910	1.209.318	57.049	26.304.721
2006	5.989.449	4.218.525	4.864.405	4.357.701	3.025.809	3.027.950	31.175	166.164	14.647	135.260	1.492.915	75.747	27.399.746
2007	6.286.928	4.725.456	5.704.204	5.126.757	3.338.963	2.820.958	24.276	98.162	15.404	142.817	1.106.325	105.398	29.495.648
2008	5.789.403	4.352.564	5.478.937	5.309.112	3.871.914	3.690.147	88.118	218.910	31.650	236.586	1.624.838	82.370	30.774.547
2009	5.691.763	4.148.381	5.250.991	5.151.551	3.859.586	4.401.511	22.920	209.865	10.808	265.315	2.241.306	114.552	31.368.549
2010	5.903.501	4.286.483	5.265.398	5.152.686	3.967.945	4.260.076	31.036	221.621	19.326	232.339	2.015.596	96.542	31.452.549
2011	5.858.696	4.037.652	5.206.003	5.302.581	3.849.787	3.213.030	77.438	499.907	42.440	444.767	2.763.728	156.521	31.452.548
2012	6.103.038	4.439.636	5.517.548	5.347.832	3.702.947	2.773.853	72.849	363.973	28.753	384.650	2.598.349	119.120	31.452.548
2013	6.161.249	4.262.159	5.302.979	5.184.683	3.698.529	2.961.482	54.109	159.635	18.183	444.302	3.087.740	117.499	31.452.549
2014	5.151.700	4.029.717	4.987.099	5.071.819	3.726.801	3.361.251	77.921	217.901	25.107	460.744	4.155.486	187.001	31.452.547
2015	4.773.010	4.030.110	5.034.578	5.134.797	3.799.835	3.423.361	89.533	250.178	25.184	492.187	4.215.812	183.963	31.452.548
2016	6.303.026	3.910.401	5.143.315	5.393.282	3.536.551	2.200.395	394.118	1.069.903	121.813	564.055	2.640.977	174.712	31.452.547
2017	5.787.881	3.864.832	5.020.782	5.371.893	3.514.235	2.586.096	270.225	733.249	123.591	628.109	3.363.530	188.123	31.452.547
2018	6.206.331	4.070.827	5.063.796	5.220.050	3.291.245	2.406.306	172.038	493.892	73.879	735.475	3.556.456	162.254	31.452.548
2019	6.458.191	4.091.382	4.936.283	5.185.038	3.065.387	2.222.909	205.702	572.330	86.011	677.525	3.757.576	194.213	31.452.547
2020	8.194.963	3.484.042	4.455.295	5.041.297	2.923.637	1.970.209	286.689	722.533	95.163	736.400	3.331.556	210.766	31.452.549
2021	4.557.615	4.302.458	4.624.496	4.477.984	3.606.279	3.316.465	68.838	160.484	45.336	270.612	5.743.127	278.855	31.452.548
2022	5.314.026	4.212.557	4.973.705	4.910.598	3.492.106	2.660.053	110.066	380.856	97.494	558.082	4.522.727	220.279	31.452.549
2023	5.401.758	3.872.910	4.894.205	5.338.953	3.613.058	2.408.661	198.166	550.941	102.874	628.016	4.175.411	267.595	31.452.549
2024	5.909.995	4.268.334	5.011.436	5.012.142	3.533.260	2.503.519	147.949	429.624	44.414	409.937	3.962.276	219.662	31.452.548
2025	6.577.338	4.598.792	5.340.034	5.322.080	3.433.184	2.405.622	225.021	837.467	58.558	460.203	2.989.145	155.604	32.403.047
2026	6.507.692	4.848.039	5.957.184	6.254.935	4.265.301	3.019.614	113.698	273.361	63.798	663.484	4.458.807	331.703	36.757.615
2027	7.206.458	5.737.301	6.852.608	6.315.247	4.173.734	2.727.915	79.908	146.204	25.976	456.589	3.933.660	277.625	37.933.225
2028	7.318.890	5.633.065	6.844.667	6.498.718	4.276.125	2.606.078	57.974	129.401	22.643	601.018	3.614.978	329.667	37.933.225
2029	7.466.586	5.505.125	6.585.526	6.147.671	4.435.202	2.967.947	13.083	42.887	4.956	416.394	4.740.210	379.823	38.705.409
2030	7.201.508	5.601.352	6.758.321	6.465.760	4.428.047	2.952.881	0	0	0	603.255	4.355.226	339.058	38.705.409
2031	7.292.645	5.297.004	6.672.855	6.639.607	4.583.329	3.329.454	46.546	56.012	46.182	395.601	3.985.775	360.396	38.705.406
2032	7.540.987	5.236.867	6.800.545	6.945.580	4.488.908	2.632.049	150.540	214.077	91.841	726.791	3.612.137	265.087	38.705.409

Donde:

- PULP: trozas pulpables, 8 cm., 2,44 m.
- AS16: trozas aserrables, 16 cm., 4,1 m.
- AS20: trozas aserrables, 20 cm., 4,1 m
- AS24: trozas aserrables, 24 cm., 4,1 m
- AS28: trozas aserrables, 28 cm., 4,1 m
- AS32: trozas aserrables, 32 cm., 4,1 m
- MP28: trozas multipropósito (poda), 28 cm., 5 m.
- MP32: trozas multipropósito (poda), 32 cm., 5 m
- MPT32: trozas multipropósito torno (poda), 32 cm., 2,7 m
- TP28: trozas podadas, 28 cm., total de 4,1 y 5 m
- TP32: trozas podadas, 32 cm., total de 4,1 y 5 m
- PT32: trozas podadas torno, 32 cm, 2,7 m.

Cuadro 5.2. Volumen en pie trozas podadas (m³/año)

AÑO	PT32	PC32	PC28	PL32	PL28	TP32	TP28	Total Podado
2003	27.660	81.047	13.666	300.245	21.471	381.292	35.137	444.089
2004	74.040	298.683	69.755	712.947	71.642	1.011.631	141.396	1.227.067
2005	57.049	296.635	41.849	912.683	73.061	1.209.318	114.910	1.381.276
2006	75.747	586.291	52.431	906.624	82.829	1.492.915	135.260	1.703.921
2007	105.398	187.331	30.859	918.994	111.958	1.106.325	142.817	1.354.540
2008	82.370	658.861	90.340	965.977	146.246	1.624.838	236.586	1.943.793
2009	114.552	1.001.759	176.296	1.239.547	89.019	2.241.306	265.315	2.621.173
2010	96.542	755.941	95.344	1.259.655	136.995	2.015.596	232.339	2.344.477
2011	156.520	872.654	145.899	1.891.075	298.868	2.763.728	444.767	3.365.016
2012	119.120	944.302	191.165	1.654.046	193.485	2.598.348	384.650	3.102.118
2013	117.499	1.171.581	223.487	1.916.160	220.815	3.087.741	444.302	3.649.542
2014	187.001	1.689.585	220.090	2.465.901	240.653	4.155.486	460.743	4.893.231
2015	183.963	1.595.291	214.363	2.620.521	277.824	4.215.812	492.187	4.891.963
2016	174.712	1.237.668	305.641	1.403.310	258.413	2.640.978	564.054	3.379.744
2017	188.123	1.405.536	329.926	1.957.994	298.183	3.363.530	628.109	4.179.762
2018	162.254	1.036.608	322.691	2.519.848	412.784	3.556.456	735.475	4.454.184
2019	194.213	959.927	316.299	2.797.649	361.226	3.757.577	677.525	4.629.315
2020	210.766	958.298	275.473	2.373.258	460.927	3.331.556	736.400	4.278.721
2021	278.855	1.373.327	141.114	4.369.800	129.498	5.743.127	270.612	6.292.594
2022	220.279	1.129.347	195.890	3.393.380	362.192	4.522.727	558.082	5.301.088
2023	267.595	1.222.438	318.790	2.952.972	309.226	4.175.410	628.016	5.071.021
2024	219.662	940.643	217.931	3.021.633	192.005	3.962.276	409.937	4.591.875
2025	155.604	919.270	222.488	2.069.875	237.715	2.989.145	460.203	3.604.952
2026	331.703	1.241.740	225.115	3.217.067	438.370	4.458.807	663.484	5.453.994
2027	277.625	1.336.808	178.978	2.596.853	277.612	3.933.661	456.589	4.667.875
2028	329.667	1.305.897	259.075	2.309.082	341.943	3.614.979	601.018	4.545.663
2029	379.823	1.506.417	189.499	3.233.793	226.895	4.740.209	416.394	5.536.426
2030	339.058	1.445.329	130.920	2.909.897	472.335	4.355.226	603.255	5.297.538
2031	360.396	1.491.332	147.905	2.494.444	247.697	3.985.775	395.601	4.741.773
2032	265.087	1.718.709	291.662	1.893.428	435.129	3.612.137	726.791	4.604.015

Donde:

PT32: podado torno, diámetro 32 cm, largo 2,7 m

PC32: podado corto, diámetro 32 cm, largo 4,1 m

PC28: podado corto, diámetro 28 cm, largo 4,1 m

PL32: podado largo, diámetro 32 cm, largo 5 m

PL28: podado largo, diámetro 28 cm, largo 5 m

TP32: total podado aserrable 32 cm, ambos largos

TP28: total podado aserrable 28cm, ambos largos

Cuadro 5.3. Volumen en pie trozas podadas de esquema 4 o Multipropósito (m³/año)

AÑO	MPT32	MP32	MP28	TOTAL MP
2003	6.462	83.242	15.630	105.334
2004	22.723	267.793	49.320	339.836
2005	14.136	182.552	31.373	228.061
2006	14.647	166.164	31.175	211.986
2007	15.404	98.162	24.276	137.842
2008	31.650	218.910	88.118	338.677
2009	10.808	209.865	22.920	243.593
2010	19.326	221.621	31.036	271.983
2011	42.440	499.907	77.438	619.785
2012	28.753	363.973	72.849	465.575
2013	18.183	159.635	54.109	231.927
2014	25.107	217.901	77.921	320.929
2015	25.184	250.178	89.533	364.894
2016	121.813	1.069.903	394.118	1.585.833
2017	123.591	733.249	270.225	1.127.065
2018	73.879	493.892	172.038	739.809
2019	86.011	572.330	205.702	864.043
2020	95.163	722.533	286.689	1.104.384
2021	45.336	160.484	68.838	274.658
2022	97.494	380.856	110.066	588.417
2023	102.874	550.941	198.166	851.982
2024	44.414	429.624	147.949	621.987
2025	58.558	837.467	225.021	1.121.045
2026	63.798	273.361	113.698	450.857
2027	25.976	146.204	79.908	252.087
2028	22.643	129.401	57.974	210.018
2029	4.956	42.887	13.083	60.927
2030	0	0	0	0
2031	46.182	56.012	46.546	148.740
2032	91.841	214.077	150.540	456.458

Donde:

MPT32: podado multipropósito torno, 32 cm, largo 2,7 m.

MP32: podado multipropósito aserrable, 32 cm, largo 5 m.

MP28: podado multipropósito aserrable, 28 cm, largo 5 m

Cuadro 5.4. Volumen en pie trozas aserrables (m3/año)

año	AS32	AS28	AS24	AS20	AS16	Tot ASE
2003	2.036.560	2.508.503	3.870.148	4.282.993	3.759.565	16.457.769
2004	2.306.352	2.524.491	4.011.506	4.435.456	3.913.540	17.191.346
2005	2.753.721	2.645.303	4.183.132	4.809.024	4.301.662	18.692.841
2006	3.027.950	3.025.809	4.357.701	4.864.405	4.218.525	19.494.390
2007	2.820.958	3.338.963	5.126.757	5.704.204	4.725.456	21.716.338
2008	3.690.147	3.871.914	5.309.112	5.478.937	4.352.564	22.702.674
2009	4.401.511	3.859.586	5.151.551	5.250.991	4.148.381	22.812.020
2010	4.260.076	3.967.945	5.152.686	5.265.398	4.286.483	22.932.588
2011	3.213.030	3.849.787	5.302.581	5.206.003	4.037.652	21.609.051
2012	2.773.853	3.702.947	5.347.832	5.517.548	4.439.636	21.781.816
2013	2.961.482	3.698.529	5.184.683	5.302.979	4.262.159	21.409.833
2014	3.361.251	3.726.801	5.071.819	4.987.099	4.029.717	21.176.687
2015	3.423.361	3.799.835	5.134.797	5.034.578	4.030.110	21.422.681
2016	2.200.395	3.536.551	5.393.282	5.143.315	3.910.401	20.183.944
2017	2.586.096	3.514.235	5.371.893	5.020.782	3.864.832	20.357.838
2018	2.406.306	3.291.245	5.220.050	5.063.796	4.070.827	20.052.224
2019	2.222.909	3.065.387	5.185.038	4.936.283	4.091.382	19.500.999
2020	1.970.209	2.923.637	5.041.297	4.455.295	3.484.042	17.874.481
2021	3.316.465	3.606.279	4.477.984	4.624.496	4.302.458	20.327.682
2022	2.660.053	3.492.106	4.910.598	4.973.705	4.212.557	20.249.018
2023	2.408.661	3.613.058	5.338.953	4.894.205	3.872.910	20.127.787
2024	2.503.519	3.533.260	5.012.142	5.011.436	4.268.334	20.328.691
2025	2.405.622	3.433.184	5.322.080	5.340.034	4.598.792	21.099.712
2026	3.019.614	4.265.301	6.254.935	5.957.184	4.848.039	24.345.072
2027	2.727.915	4.173.734	6.315.247	6.852.608	5.737.301	25.806.805
2028	2.606.078	4.276.125	6.498.718	6.844.667	5.633.065	25.858.654
2029	2.967.947	4.435.202	6.147.671	6.585.526	5.505.125	25.641.470
2030	2.952.881	4.428.047	6.465.760	6.758.321	5.601.352	26.206.361
2031	3.329.454	4.583.329	6.639.607	6.672.855	5.297.004	26.522.249
2032	2.632.049	4.488.908	6.945.580	6.800.545	5.236.867	26.103.949

Donde:

AS32: Trozas aserrables de 32 cm. Largo, 4,1 m

AS28: Trozas aserrables de 28 cm. Largo, 4,1 m

AS24: Trozas aserrables de 24 cm. Largo, 4,1 m

AS20: Trozas aserrables de 20 cm. Largo, 4,1 m

AS16: Trozas aserrables de 16 cm. Largo, 4,1 m

Cuadro 5.5. Volumen en pie Pulpable de raleos y Cosecha final (m3/año)

año	Raleos	Cosecha final	Total
2003	2.006.167	3.074.182	5.080.349
2004	2.162.789	3.551.183	5.713.972
2005	2.112.745	3.889.798	6.002.543
2006	2.199.798	3.789.650	5.989.449
2007	2.165.018	4.121.910	6.286.928
2008	2.026.456	3.762.948	5.789.403
2009	2.109.148	3.582.615	5.691.763
2010	2.208.522	3.694.980	5.903.501
2011	2.275.003	3.583.693	5.858.696
2012	2.186.658	3.916.380	6.103.038
2013	2.269.096	3.892.153	6.161.249
2014	1.527.560	3.624.140	5.151.700
2015	1.128.621	3.644.389	4.773.010
2016	2.683.928	3.619.098	6.303.026
2017	2.080.654	3.707.227	5.787.881
2018	2.152.873	4.053.457	6.206.331
2019	2.469.240	3.988.951	6.458.191
2020	4.808.619	3.386.343	8.194.963
2021	514.336	4.043.279	4.557.615
2022	1.402.916	3.911.110	5.314.026
2023	1.932.220	3.469.538	5.401.758
2024	2.094.579	3.815.416	5.909.995
2025	2.385.904	4.191.435	6.577.338
2026	2.171.815	4.335.877	6.507.692
2027	1.883.365	5.323.094	7.206.458
2028	2.131.000	5.187.890	7.318.890
2029	2.438.936	5.027.650	7.466.586
2030	2.172.816	5.028.692	7.201.508
2031	2.485.294	4.807.351	7.292.645
2032	2.867.890	4.673.097	7.540.987

Cuadro 5.6. Volumen trozas en pie por tipo de producto (m3/año)

año	Podado	Multiprop	Aserrable	Pulpable	Total
2003	444.089	105.334	16.457.769	5.080.349	22.087.541
2004	1.227.067	339.836	17.191.346	5.713.972	24.472.222
2005	1.381.276	228.061	18.692.841	6.002.543	26.304.721
2006	1.703.921	211.986	19.494.390	5.989.449	27.399.745
2007	1.354.540	137.842	21.716.338	6.286.928	29.495.648
2008	1.943.793	338.677	22.702.674	5.789.403	30.774.547
2009	2.621.173	243.593	22.812.020	5.691.763	31.368.549
2010	2.344.477	271.983	22.932.588	5.903.501	31.452.549
2011	3.365.016	619.785	21.609.051	5.858.696	31.452.549
2012	3.102.118	465.575	21.781.816	6.103.038	31.452.548
2013	3.649.542	231.927	21.409.833	6.161.249	31.452.551
2014	4.803.231	320.929	21.176.687	5.151.700	31.452.547
2015	4.891.963	364.894	21.422.681	4.773.010	31.452.548
2016	3.379.744	1.585.833	20.183.944	6.303.026	31.452.547
2017	4.179.762	1.127.065	20.357.838	5.787.881	31.452.546
2018	4.454.184	739.809	20.052.224	6.206.331	31.452.547
2019	4.629.315	864.043	19.500.999	6.458.191	31.452.548
2020	4.278.721	1.104.384	17.874.481	8.194.963	31.452.548
2021	6.292.594	274.658	20.327.682	4.557.615	31.452.549
2022	5.301.088	588.417	20.249.018	5.314.026	31.452.550
2023	5.071.021	851.982	20.127.787	5.401.758	31.452.548
2024	4.591.875	621.987	20.328.691	5.909.995	31.452.548
2025	3.604.952	1.121.045	21.099.712	6.577.338	32.403.047
2026	5.453.994	450.857	24.345.072	6.507.692	36.757.615
2027	4.667.875	252.087	25.806.805	7.206.458	37.933.225
2028	4.545.663	210.018	25.858.654	7.318.890	37.933.224
2029	5.536.426	60.927	25.641.470	7.466.586	38.705.409
2030	5.297.538		26.206.361	7.201.508	38.705.408
2031	4.741.773	148.741	26.522.249	7.292.645	38.705.408
2032	4.604.015	456.458	26.103.949	7.540.987	38.705.409

Anexo 6.

Resultados Escenario (B) Base más Forestación de 30 mil ha hasta año 2011

Cuadro 6.1. Volúmenes anuales en pie, por tipo de producto y año (m3)

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	4.938.151	3.620.480	4.202.218	3.885.729	2.578.469	2.167.964	20.011	92.836	8.053	60.997	477.863	34.769	22.087.542
2004	5.596.658	3.818.800	4.320.048	3.968.869	2.569.280	2.515.187	49.563	287.316	23.144	120.643	1.132.064	70.647	24.472.221
2005	6.061.162	4.338.904	4.825.493	4.166.120	2.636.312	2.684.367	31.968	170.567	13.597	128.189	1.192.628	55.413	26.304.721
2006	6.085.090	4.330.720	5.002.092	4.469.634	2.978.847	2.796.625	30.702	136.934	13.629	144.425	1.319.935	91.117	27.399.748
2007	6.310.490	4.705.170	5.683.701	5.157.719	3.365.081	2.882.548	27.590	99.616	15.415	167.310	1.004.577	76.431	29.495.648
2008	5.678.219	4.234.560	5.233.435	4.959.433	3.895.032	4.373.750	26.438	334.154	20.953	79.785	1.854.087	84.702	30.774.547
2009	5.628.512	4.105.786	5.100.293	4.967.525	3.869.484	4.454.958	24.933	220.107	12.673	177.517	2.685.824	120.938	31.368.549
2010	6.055.640	4.499.866	5.594.579	5.475.073	3.920.329	3.470.647	73.381	200.747	28.081	355.405	1.659.922	118.879	31.452.548
2011	5.916.495	4.114.552	5.358.533	5.458.749	3.879.872	3.191.834	90.446	405.221	43.049	479.887	2.362.071	151.840	31.452.549
2012	5.926.113	4.298.323	5.410.386	5.354.239	3.586.772	2.664.255	83.315	380.075	35.115	515.795	3.018.576	179.583	31.452.546
2013	6.162.323	4.318.174	5.349.105	5.258.417	3.500.906	2.711.412	140.892	297.830	41.434	510.701	3.009.201	152.151	31.452.547
2014	5.316.533	4.225.188	5.231.402	5.224.361	3.738.758	3.098.007	42.502	155.102	16.681	409.749	3.793.826	200.438	31.452.548
2015	5.522.473	3.650.055	4.666.934	4.913.161	3.846.069	3.528.662	85.433	317.605	22.998	401.873	4.312.103	185.182	31.452.548
2016	6.342.549	3.776.332	4.959.718	5.277.185	3.461.664	2.605.123	389.890	1.100.436	133.024	568.120	2.729.344	109.163	31.452.548
2017	5.627.401	3.554.016	4.648.137	5.284.611	3.720.780	3.109.154	187.243	508.885	74.060	596.223	3.932.735	209.303	31.452.548
2018	5.730.815	3.524.290	4.536.509	5.179.451	3.626.933	3.042.430	160.413	489.747	67.732	611.297	4.260.257	222.675	31.452.548
2019	6.381.662	4.094.313	4.813.603	5.134.093	3.275.419	2.292.529	261.012	703.834	92.708	539.737	3.634.844	228.792	31.452.547
2020	6.865.379	4.065.059	4.882.029	5.368.518	3.083.092	1.974.788	251.479	605.293	81.241	730.242	3.323.578	221.849	31.452.548
2021	4.791.876	4.186.516	4.812.071	4.952.093	3.626.001	2.945.781	95.242	351.853	75.334	322.993	5.043.928	248.860	31.452.548
2022	5.351.413	3.926.307	5.010.457	5.225.101	3.805.980	2.705.892	95.794	353.796	70.227	599.817	4.080.402	227.361	31.452.549
2023	6.098.504	4.439.499	5.206.014	5.112.076	3.440.768	2.185.288	134.831	475.370	97.569	559.642	3.537.402	165.583	31.452.547
2024	6.519.243	4.987.818	5.815.239	5.516.828	3.789.538	2.601.575	121.433	305.049	36.858	483.420	4.087.786	222.731	34.487.516
2025	8.146.666	6.357.244	7.622.789	7.457.788	4.721.364	2.821.716	183.639	586.752	95.293	719.394	3.939.221	235.397	42.887.262
2026	8.607.129	6.515.037	7.912.998	7.489.222	4.680.994	2.669.909	175.181	402.871	60.953	699.953	3.441.706	231.308	42.887.262
2027	8.688.029	7.180.969	8.428.295	7.699.508	4.636.314	2.526.454	91.515	161.936	25.020	691.255	3.864.842	287.253	44.281.390
2028	8.958.613	7.500.389	8.873.264	7.799.168	4.560.704	2.175.342	92.230	166.987	49.525	627.066	3.200.773	277.326	44.281.387
2029	9.002.745	7.089.291	8.742.980	7.938.219	4.540.483	2.296.984	107.936	319.348	80.528	777.153	3.142.019	243.703	44.281.387
2030	8.629.242	7.143.056	8.548.734	7.983.012	4.777.385	2.820.508	137.121	440.107	70.910	499.070	3.334.188	241.938	44.625.273
2031	8.511.346	7.166.603	8.717.728	8.083.595	4.623.413	2.826.713	176.002	493.461	111.318	679.712	3.031.034	204.350	44.625.273
2032	7.719.482	5.675.257	7.308.995	7.423.064	5.624.796	4.681.978	146.276	509.085	129.375	357.454	4.813.318	236.194	44.625.273

Donde:

- PULP: trozas pulpables, 8 cm., 2,44 m.
- AS16: trozas aserrables, 16 cm., 4,1 m.
- AS20: trozas aserrables, 20 cm., 4,1 m
- AS24: trozas aserrables, 24 cm., 4,1 m
- AS28: trozas aserrables, 28 cm., 4,1 m
- AS32: trozas aserrables, 32 cm., 4,1 m
- MP28: trozas multipropósito (poda), 28 cm., 5 m.
- MP32: trozas multipropósito (poda), 32 cm., 5 m
- MPT32: trozas multipropósito torno (poda), 32 cm., 2,7 m
- TP28: trozas podadas, 28 cm., total de 4,1 y 5 m
- TP32: trozas podadas, 32 cm., total de 4,1 y 5 m
- PT32: trozas podadas torno, 32 cm, 2,7 m.

Cuadro 6.2. Volumen en pie trozas podadas (m3/año)

año	PT32	PC32	PC28	PL32	PL28	TP32	TP28	Tot. Pod
2003	34.769	158.899	34.565	318.964	26.432	477.863	60.997	573.629
2004	70.647	219.513	50.169	912.551	70.474	1.132.064	120.643	1.323.355
2005	55.413	341.945	41.799	850.683	86.390	1.192.628	128.189	1.376.230
2006	91.117	515.272	57.715	804.663	86.709	1.319.935	144.425	1.555.477
2007	76.431	266.712	46.832	737.865	120.478	1.004.577	167.310	1.248.318
2008	84.702	772.315	27.456	1.081.771	52.329	1.854.087	79.785	2.018.573
2009	120.938	818.342	116.152	1.867.481	61.365	2.685.824	177.517	2.984.279
2010	118.879	602.025	141.951	1.057.897	213.454	1.659.922	355.405	2.134.206
2011	151.840	959.371	163.425	1.402.700	316.462	2.362.071	479.887	2.993.798
2012	179.583	1.105.066	235.279	1.913.510	280.516	3.018.576	515.795	3.713.954
2013	152.151	1.079.063	250.392	1.930.138	260.309	3.009.201	510.701	3.672.053
2014	200.438	1.344.910	177.894	2.448.916	231.855	3.793.826	409.749	4.404.013
2015	185.182	1.431.845	187.012	2.880.258	214.861	4.312.103	401.873	4.899.159
2016	109.163	1.122.009	232.593	1.607.335	335.527	2.729.344	568.120	3.406.628
2017	209.303	1.369.244	267.956	2.563.491	328.267	3.932.735	596.223	4.738.262
2018	222.675	1.343.816	280.216	2.916.440	331.081	4.260.257	611.297	5.094.228
2019	228.792	1.165.545	280.740	2.469.299	258.997	3.634.844	539.737	4.403.374
2020	221.849	974.291	296.226	2.349.287	434.016	3.323.578	730.242	4.275.669
2021	248.860	1.467.188	166.595	3.576.739	156.398	5.043.928	322.993	5.615.781
2022	227.361	1.303.345	337.678	2.777.058	262.139	4.080.402	599.817	4.907.580
2023	165.583	1.117.259	311.479	2.420.143	248.163	3.537.402	559.642	4.262.628
2024	222.731	1.171.694	310.425	2.916.092	172.995	4.087.786	483.420	4.793.936
2025	235.397	1.521.247	395.879	2.417.974	323.514	3.939.221	719.394	4.894.011
2026	231.308	1.462.397	354.633	1.979.309	345.320	3.441.706	699.953	4.372.967
2027	287.253	1.302.430	397.048	2.562.412	294.207	3.864.842	691.255	4.843.351
2028	277.326	859.398	292.178	2.341.375	334.888	3.200.773	627.066	4.105.165
2029	243.703	1.362.419	389.316	1.779.599	387.836	3.142.019	777.153	4.162.874
2030	241.938	1.004.872	265.240	2.329.316	233.831	3.334.188	499.070	4.075.196
2031	204.350	1.415.826	422.283	1.615.207	257.429	3.031.034	679.712	3.915.095
2032	236.194	1.990.594	233.944	2.822.724	123.511	4.813.318	357.454	5.406.967

Donde:

PT32: podado torno, diámetro 32 cm, largo 2,7 m

PC32: podado corto, diámetro 32 cm, largo 4,1 m

PC28: podado corto, diámetro 28 cm, largo 4,1 m

PL32: podado largo, diámetro 32 cm, largo 5 m

PL28: podado largo, diámetro 28 cm, largo 5 m

TP32: total podado aserrable 32 cm, ambos largos

TP28: total podado aserrable 28cm, ambos largos

Cuadro 6.3. Volumen en pie trozas podadas de esquema 4 o Multipropósito (m3/año)

año	MPT32	MP32	MP28	Tot MP
2003	8.053	92.836	20.011	120.901
2004	23.144	287.316	49.563	360.023
2005	13.597	170.567	31.968	216.132
2006	13.629	136.934	30.702	181.265
2007	15.415	99.616	27.590	142.621
2008	20.953	334.154	26.438	381.544
2009	12.673	220.107	24.933	257.713
2010	28.081	200.747	73.381	302.209
2011	43.049	405.221	90.446	538.716
2012	35.115	380.075	83.315	498.505
2013	41.434	297.830	140.892	480.156
2014	16.681	155.102	42.502	214.285
2015	22.998	317.605	85.433	426.036
2016	133.024	1.100.436	389.890	1.623.350
2017	74.060	508.885	187.243	770.188
2018	67.732	489.747	160.413	717.891
2019	92.708	703.834	261.012	1.057.554
2020	81.241	605.293	251.479	938.013
2021	75.334	351.853	95.242	522.429
2022	70.227	353.796	95.794	519.817
2023	97.569	475.370	134.831	707.770
2024	36.858	305.049	121.433	463.340
2025	95.293	586.752	183.639	865.684
2026	60.953	402.871	175.181	639.006
2027	25.020	161.936	91.515	278.471
2028	49.525	166.987	92.230	308.742
2029	80.528	319.348	107.936	507.811
2030	70.910	440.107	137.121	648.139
2031	111.318	493.461	176.002	780.780
2032	129.375	509.085	146.276	784.736

Donde:

MPT32: podado multipropósito torno, 32 cm, largo 2,7 m.

MP32: podado multipropósito aserrable, 32 cm, largo 5 m.

MP28: podado multipropósito aserrable, 28 cm, largo 5 m

Cuadro 6.4. Volumen en pie trozas aserrables (m3/año)

año	AS32	AS28	AS24	AS20	AS16	Tot ASE
2003	2.167.964	2.578.469	3.885.729	4.202.218	3.620.480	16.454.861
2004	2.515.187	2.569.280	3.968.869	4.320.048	3.818.800	17.192.184
2005	2.684.367	2.636.312	4.166.120	4.825.493	4.338.904	18.651.197
2006	2.796.625	2.978.847	4.469.634	5.002.092	4.330.720	19.577.917
2007	2.882.548	3.365.081	5.157.719	5.683.701	4.705.170	21.794.219
2008	4.373.750	3.895.032	4.959.433	5.233.435	4.234.560	22.696.210
2009	4.454.958	3.869.484	4.967.525	5.100.293	4.105.786	22.498.045
2010	3.470.647	3.920.329	5.475.073	5.594.579	4.499.866	22.960.493
2011	3.191.834	3.879.872	5.458.749	5.358.533	4.114.552	22.003.540
2012	2.664.255	3.586.772	5.354.239	5.410.386	4.298.323	21.313.974
2013	2.711.412	3.500.906	5.258.417	5.349.105	4.318.174	21.138.015
2014	3.098.007	3.738.758	5.224.361	5.231.402	4.225.188	21.517.716
2015	3.528.662	3.846.069	4.913.161	4.666.934	3.650.055	20.604.881
2016	2.605.123	3.461.664	5.277.185	4.959.718	3.776.332	20.080.021
2017	3.109.154	3.720.780	5.284.611	4.648.137	3.554.016	20.316.698
2018	3.042.430	3.626.933	5.179.451	4.536.509	3.524.290	19.909.613
2019	2.292.529	3.275.419	5.134.093	4.813.603	4.094.313	19.609.957
2020	1.974.788	3.083.092	5.368.518	4.882.029	4.065.059	19.373.486
2021	2.945.781	3.626.001	4.952.093	4.812.071	4.186.516	20.522.462
2022	2.705.892	3.805.980	5.225.101	5.010.457	3.926.307	20.673.737
2023	2.185.288	3.440.768	5.112.076	5.206.014	4.439.499	20.383.646
2024	2.601.575	3.789.538	5.516.828	5.815.239	4.987.818	22.710.997
2025	2.821.716	4.721.364	7.457.788	7.622.789	6.357.244	28.980.900
2026	2.669.909	4.680.994	7.489.222	7.912.998	6.515.037	29.268.161
2027	2.526.454	4.636.314	7.699.508	8.428.295	7.180.969	30.471.539
2028	2.175.342	4.560.704	7.799.168	8.873.264	7.500.389	30.908.867
2029	2.296.984	4.540.483	7.938.219	8.742.980	7.089.291	30.607.957
2030	2.820.508	4.777.385	7.983.012	8.548.734	7.143.056	31.272.696
2031	2.826.713	4.623.413	8.083.595	8.717.728	7.166.603	31.418.052
2032	4.681.978	5.624.796	7.423.064	7.308.995	5.675.257	30.714.089

Donde:

AS32: Trozas aserrables de 32 cm. Largo, 4,1 m

AS28: Trozas aserrables de 28 cm. Largo, 4,1 m

AS24: Trozas aserrables de 24 cm. Largo, 4,1 m

AS20: Trozas aserrables de 20 cm. Largo, 4,1 m

AS16: Trozas aserrables de 16 cm. Largo, 4,1 m

Cuadro 6.5. Volumen en pie Pulpable de raleos y Cosecha final (m3/año)

año	Raleos	Cosecha final	Total
2003	2.006.167	2.931.983	4.938.151
2004	2.162.789	3.433.869	5.596.658
2005	2.112.745	3.948.418	6.061.162
2006	2.199.798	3.885.292	6.085.090
2007	2.165.018	4.145.472	6.310.490
2008	2.026.456	3.651.763	5.678.219
2009	2.109.148	3.519.364	5.628.512
2010	2.208.522	3.847.118	6.055.640
2011	2.275.003	3.641.492	5.916.495
2012	2.080.498	3.845.615	5.926.113
2013	2.199.351	3.962.972	6.162.323
2014	1.532.038	3.784.495	5.316.533
2015	2.245.268	3.277.205	5.522.473
2016	2.868.704	3.473.845	6.342.549
2017	2.359.522	3.267.879	5.627.401
2018	2.451.149	3.279.667	5.730.815
2019	2.621.682	3.759.980	6.381.662
2020	3.185.052	3.680.328	6.865.379
2021	1.121.582	3.670.294	4.791.876
2022	1.844.869	3.506.544	5.351.413
2023	2.120.718	3.977.786	6.098.504
2024	1.890.064	4.629.179	6.519.243
2025	2.384.312	5.762.354	8.146.666
2026	2.684.456	5.922.673	8.607.129
2027	1.981.812	6.706.217	8.688.029
2028	2.003.554	6.955.059	8.958.613
2029	2.294.369	6.708.376	9.002.745
2030	2.001.912	6.627.330	8.629.242
2031	1.766.509	6.744.837	8.511.346
2032	2.705.137	5.014.344	7.719.482

Cuadro 6.6. Volumen en pie trozas por tipo de producto (m3/año)

año	Podado	Multiprop.	Aserrable	Pulpable	Total
2003	573.629	120.901	16.454.861	4.938.151	22.087.542
2004	1.323.355	360.023	17.192.184	5.596.658	24.472.221
2005	1.376.230	216.132	18.651.197	6.061.162	26.304.721
2006	1.555.477	181.265	19.577.917	6.085.090	27.399.748
2007	1.248.318	142.621	21.794.219	6.310.490	29.495.648
2008	2.018.573	381.544	22.696.210	5.678.219	30.774.547
2009	2.984.279	257.713	22.498.045	5.628.512	31.368.549
2010	2.134.206	302.209	22.960.493	6.055.640	31.452.548
2011	2.993.798	538.716	22.003.540	5.916.495	31.452.549
2012	3.713.954	498.505	21.313.974	5.926.113	31.452.546
2013	3.672.053	480.156	21.138.015	6.162.323	31.452.547
2014	4.404.013	214.285	21.517.716	5.316.533	31.452.548
2015	4.899.159	426.036	20.604.881	5.522.473	31.452.548
2016	3.406.628	1.623.350	20.080.021	6.342.549	31.452.548
2017	4.738.262	770.188	20.316.698	5.627.401	31.452.548
2018	5.094.228	717.891	19.909.613	5.730.815	31.452.548
2019	4.403.374	1.057.554	19.609.957	6.381.662	31.452.547
2020	4.275.669	938.013	19.373.486	6.865.379	31.452.548
2021	5.615.781	522.429	20.522.462	4.791.876	31.452.548
2022	4.907.580	519.817	20.673.737	5.351.413	31.452.549
2023	4.262.628	707.770	20.383.646	6.098.504	31.452.547
2024	4.793.936	463.340	22.710.997	6.519.243	34.487.516
2025	4.894.011	865.684	28.980.900	8.146.666	42.887.262
2026	4.372.967	639.006	29.268.161	8.607.129	42.887.262
2027	4.843.351	278.471	30.471.539	8.688.029	44.281.390
2028	4.105.165	308.742	30.908.867	8.958.613	44.281.387
2029	4.162.874	507.811	30.607.957	9.002.745	44.281.387
2030	4.075.196	648.139	31.272.696	8.629.242	44.625.273
2031	3.915.095	780.780	31.418.052	8.511.346	44.625.273
2032	5.406.967	784.736	30.714.089	7.719.482	44.625.273

Anexo 7

Resultados Escenario (C) Base más mayor ganancia genética

Cuadro 7.1. Volúmenes anuales en pie, por tipo de producto y año (m3)

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	4.988.420	3.663.169	4.237.483	3.883.449	2.551.941	2.101.633	22.597	97.144	8.764	57.764	443.464	31.714	22.087.541
2004	5.628.779	3.862.971	4.354.774	3.991.589	2.593.697	2.469.780	48.418	280.266	22.788	117.724	1.035.306	66.129	24.472.222
2005	6.033.099	4.323.481	4.829.125	4.188.957	2.617.664	2.719.156	29.353	172.459	13.125	113.275	1.208.836	56.192	26.304.721
2006	6.053.765	4.289.478	4.940.084	4.376.283	2.992.174	2.901.606	24.894	124.409	11.146	161.155	1.438.329	86.427	27.399.748
2007	6.221.156	4.631.012	5.563.585	5.067.367	3.346.794	3.137.120	22.297	91.648	12.922	112.258	1.194.687	94.803	29.495.648
2008	5.816.734	4.375.815	5.501.116	5.303.470	3.889.484	3.629.912	84.640	211.437	31.629	221.682	1.617.072	91.558	30.774.547
2009	5.763.784	4.223.682	5.359.123	5.193.188	3.808.567	4.148.167	22.772	224.369	13.362	266.423	2.219.570	125.542	31.368.548
2010	5.919.450	4.333.364	5.315.237	5.192.517	3.963.341	4.215.617	33.745	265.444	21.263	249.869	1.845.030	97.672	31.452.548
2011	5.864.358	4.057.299	5.218.516	5.297.317	3.869.232	3.265.967	76.460	495.662	42.374	411.505	2.704.452	149.408	31.452.549
2012	6.111.712	4.466.093	5.568.716	5.391.664	3.676.559	2.692.134	85.465	386.119	34.119	408.925	2.504.931	126.111	31.452.548
2013	6.211.257	4.476.533	5.521.763	5.227.002	3.631.836	2.808.669	45.975	142.125	15.480	404.784	2.845.185	121.939	31.452.548
2014	5.058.394	4.093.413	5.082.463	5.137.157	3.777.538	3.415.515	74.020	203.329	21.941	440.446	3.974.167	174.164	31.452.547
2015	5.013.097	3.972.288	5.008.784	5.182.896	3.753.847	3.174.029	89.412	248.251	25.220	539.407	4.225.839	219.479	31.452.547
2016	5.990.830	3.767.560	4.923.949	5.245.078	3.571.262	2.624.137	367.917	974.725	112.430	557.712	3.156.322	160.628	31.452.549
2017	5.303.143	3.601.363	4.782.666	5.371.762	3.666.663	2.855.912	282.385	810.794	118.549	692.018	3.754.739	212.557	31.452.549
2018	5.550.692	3.717.324	4.633.398	5.095.505	3.477.055	2.834.042	189.224	525.658	83.421	767.209	4.407.862	171.156	31.452.547
2019	5.789.232	3.966.087	4.724.845	5.123.085	3.304.092	2.420.858	205.968	591.644	91.989	679.584	4.329.258	225.904	31.452.546
2020	7.433.237	3.713.668	4.570.500	5.233.039	3.110.694	1.961.272	289.307	729.898	94.039	709.829	3.356.146	250.921	31.452.550
2021	4.728.261	4.305.203	4.696.569	4.687.245	3.612.387	3.045.464	84.631	253.235	56.696	321.594	5.388.234	273.028	31.452.546
2022	5.184.344	4.087.943	5.083.834	5.434.581	3.555.019	2.377.648	173.367	622.017	129.234	623.614	3.932.200	248.748	31.452.549
2023	5.499.131	4.226.803	4.890.965	5.260.506	3.481.825	2.411.937	135.428	537.000	115.092	546.152	4.112.976	234.731	31.452.549
2024	6.056.009	4.225.002	4.992.654	5.127.997	3.441.734	2.383.600	126.681	287.965	26.135	501.075	4.052.276	231.420	31.452.549
2025	7.703.665	6.053.007	7.040.814	6.809.037	4.127.159	2.693.062	241.924	599.102	73.462	566.754	3.784.937	215.777	39.908.701
2026	7.714.406	5.916.583	7.287.108	6.851.537	4.497.307	2.855.870	96.106	263.162	61.264	447.670	3.634.511	283.175	39.908.700
2027	8.192.426	6.770.414	8.011.565	6.883.359	4.234.520	2.559.080	118.854	215.286	36.094	333.914	2.666.320	205.513	40.227.344
2028	8.041.651	6.455.793	7.866.658	7.018.779	4.499.394	2.472.545	14.635	33.157	4.934	540.912	3.027.412	251.471	40.227.342
2029	8.334.387	6.065.318	7.282.921	6.579.082	4.380.322	2.752.778	8.721	50.296	10.092	434.558	4.053.351	275.517	40.227.343
2030	7.636.833	6.021.422	7.286.556	6.983.777	4.700.326	3.008.248	8.966	20.042	5.403	535.178	3.760.293	260.300	40.227.344
2031	7.643.041	6.314.414	7.729.987	7.441.844	4.708.647	2.857.883	43.559	47.969	45.376	370.141	2.817.734	206.748	40.227.343
2032	7.916.946	5.652.679	7.310.438	7.257.320	4.628.175	2.419.239	91.446	191.398	94.310	748.010	3.613.855	303.530	40.227.345

Donde:

- PULP: trozas pulpables, 8 cm., 2,44 m.
- AS16: trozas aserrables, 16 cm., 4,1 m.
- AS20: trozas aserrables, 20 cm., 4,1 m.
- AS24: trozas aserrables, 24 cm., 4,1 m.
- AS28: trozas aserrables, 28 cm., 4,1 m.
- AS32: trozas aserrables, 32 cm., 4,1 m.
- MP28: trozas multipropósito (poda), 28 cm., 5 m.
- MP32: trozas multipropósito (poda), 32 cm., 5 m.
- MPT32: trozas multipropósito torno (poda), 32 cm., 2,7 m.
- TP28: trozas podadas, 28 cm., total de 4,1 y 5 m.
- TP32: trozas podadas, 32 cm., total de 4,1 y 5 m.
- PT32: trozas podadas torno, 32 cm., 2,7 m.

Cuadro 7.2. Volumen en pie trozas podadas (m3/año)

año	PT32	PC32	PC28	PL32	PL28	TP32	TP28	Tot. Pod
2003	31.714	123.139	30.890	320.324	26.873	443.464	57.764	532.942
2004	66.129	231.517	40.972	803.789	76.752	1.035.306	117.724	1.219.159
2005	56.192	340.457	50.013	868.378	63.261	1.208.836	113.275	1.378.302
2006	86.427	534.223	63.893	904.105	97.262	1.438.329	161.155	1.685.911
2007	94.803	223.234	16.157	971.454	96.101	1.194.687	112.258	1.401.749
2008	91.558	608.812	62.014	1.008.260	159.667	1.617.072	221.682	1.930.312
2009	125.542	984.242	163.727	1.235.327	102.696	2.219.570	266.423	2.611.535
2010	97.672	653.378	104.641	1.191.652	145.228	1.845.030	249.869	2.192.571
2011	149.408	951.153	152.825	1.753.299	258.680	2.704.452	411.505	3.265.365
2012	126.111	972.909	222.549	1.532.022	186.376	2.504.931	408.925	3.039.967
2013	121.939	950.664	184.622	1.894.521	220.162	2.845.185	404.784	3.371.908
2014	174.164	1.767.671	223.142	2.206.496	217.304	3.974.167	440.446	4.588.776
2015	219.479	1.537.579	235.986	2.688.259	303.422	4.225.839	539.407	4.984.725
2016	160.628	1.334.673	295.896	1.821.649	261.816	3.156.322	557.712	3.874.662
2017	212.557	1.677.564	374.800	2.077.175	317.217	3.754.739	692.018	4.659.314
2018	171.156	982.494	301.381	3.425.368	465.828	4.407.862	767.209	5.346.227
2019	225.904	1.219.623	352.883	3.109.635	326.701	4.329.258	679.584	5.234.746
2020	250.921	787.862	213.421	2.568.285	496.408	3.356.146	709.829	4.316.897
2021	273.028	1.322.972	109.027	4.065.262	212.567	5.388.234	321.594	5.982.856
2022	248.748	1.124.040	293.458	2.808.160	330.156	3.932.200	623.614	4.804.562
2023	234.731	1.177.942	271.160	2.935.034	274.992	4.112.976	546.152	4.893.860
2024	231.420	947.130	204.799	3.105.145	296.277	4.052.276	501.075	4.784.771
2025	215.777	1.033.362	284.872	2.751.575	281.882	3.784.937	566.754	4.567.468
2026	283.175	978.291	205.234	2.656.220	242.435	3.634.511	447.670	4.365.356
2027	205.513	1.257.973	187.833	1.408.348	146.081	2.666.320	333.914	3.205.747
2028	251.471	1.172.182	226.909	1.855.230	314.002	3.027.412	540.912	3.819.795
2029	275.517	1.356.707	221.747	2.696.644	212.811	4.053.351	434.558	4.763.426
2030	260.300	1.392.508	186.443	2.367.785	348.735	3.760.293	535.178	4.555.771
2031	206.748	1.174.653	157.356	1.643.080	212.785	2.817.734	370.141	3.394.623
2032	303.530	1.556.596	266.504	2.057.259	481.507	3.613.855	748.010	4.665.395

Donde:

PT32: podado torno, diámetro 32 cm, largo 2,7 m

PC32: podado corto, diámetro 32 cm, largo 4,1 m

PC28: podado corto, diámetro 28 cm, largo 4,1 m

PL32: podado largo, diámetro 32 cm, largo 5 m

PL28: podado largo, diámetro 28 cm, largo 5 m

TP32: total podado aserrable 32 cm, ambos largos

TP28: total podado aserrable 28cm, ambos largos

Cuadro 7.3. Volumen en pie trozas podadas de esquema 4 o Multipropósito (m3/año)

año	MPT32	MP32	MP28	Tot MP
2003	8.764	97.144	22.597	128.505
2004	22.788	280.266	48.418	351.473
2005	13.125	172.459	29.353	214.937
2006	11.146	124.409	24.894	160.448
2007	12.922	91.648	22.297	126.866
2008	31.629	211.437	84.640	327.706
2009	13.362	224.369	22.772	260.502
2010	21.263	265.444	33.745	320.452
2011	42.374	495.662	76.460	614.496
2012	34.119	386.119	85.465	505.703
2013	15.480	142.125	45.975	203.581
2014	21.941	203.329	74.020	299.291
2015	25.220	248.251	89.412	362.883
2016	112.430	974.725	367.917	1.455.072
2017	118.549	810.794	282.385	1.211.727
2018	83.421	525.658	189.224	798.303
2019	91.989	591.644	205.968	889.600
2020	94.039	729.898	289.307	1.113.243
2021	56.696	253.235	84.631	394.561
2022	129.234	622.017	173.367	924.619
2023	115.092	537.000	135.428	787.521
2024	26.135	287.965	126.681	440.781
2025	73.462	599.102	241.924	914.488
2026	61.264	263.162	96.106	420.532
2027	36.094	215.286	118.854	370.234
2028	4.934	33.157	14.635	52.726
2029	10.092	50.296	8.721	69.109
2030	5.403	20.042	8.966	34.411
2031	45.376	47.969	43.559	136.905
2032	94.310	191.398	91.446	377.154

Donde:

MPT32: podado multipropósito torno, 32 cm, largo 2,7 m.

MP32: podado multipropósito aserrable, 32 cm, largo 5 m.

MP28: podado multipropósito aserrable, 28 cm, largo 5 m

Cuadro 7.4. Volumen en pie trozas aserrables (m³/año)

año	AS32	AS28	AS24	AS20	AS16	Tot ASE
2003	2.101.633	2.551.941	3.883.449	4.237.483	3.663.169	16.437.674
2004	2.469.780	2.593.697	3.991.589	4.354.774	3.862.971	17.272.811
2005	2.719.156	2.617.664	4.188.957	4.829.125	4.323.481	18.678.383
2006	2.901.606	2.992.174	4.376.283	4.940.084	4.289.478	19.499.624
2007	3.137.120	3.346.794	5.067.367	5.563.585	4.631.012	21.745.878
2008	3.629.912	3.889.484	5.303.470	5.501.116	4.375.815	22.699.795
2009	4.148.167	3.808.567	5.193.188	5.359.123	4.223.682	22.732.727
2010	4.215.617	3.963.341	5.192.517	5.315.237	4.333.364	23.020.076
2011	3.265.967	3.869.232	5.297.317	5.218.516	4.057.299	21.708.330
2012	2.692.134	3.676.559	5.391.664	5.568.716	4.466.093	21.795.166
2013	2.808.669	3.631.836	5.227.002	5.521.763	4.476.533	21.665.802
2014	3.415.515	3.777.538	5.137.157	5.082.463	4.093.413	21.506.086
2015	3.174.029	3.753.847	5.182.896	5.008.784	3.972.288	21.091.843
2016	2.624.137	3.571.262	5.245.078	4.923.949	3.767.560	20.131.985
2017	2.855.912	3.666.663	5.371.762	4.782.666	3.601.363	20.278.366
2018	2.834.042	3.477.055	5.095.505	4.633.398	3.717.324	19.757.325
2019	2.420.858	3.304.092	5.123.085	4.724.845	3.966.087	19.538.967
2020	1.961.272	3.110.694	5.233.039	4.570.500	3.713.668	18.589.172
2021	3.045.464	3.612.387	4.687.245	4.696.569	4.305.203	20.346.868
2022	2.377.648	3.555.019	5.434.581	5.083.834	4.087.943	20.539.024
2023	2.411.937	3.481.825	5.260.506	4.890.965	4.226.803	20.272.037
2024	2.383.600	3.441.734	5.127.997	4.992.654	4.225.002	20.170.988
2025	2.693.062	4.127.159	6.809.037	7.040.814	6.053.007	26.723.080
2026	2.855.870	4.497.307	6.851.537	7.287.108	5.916.583	27.408.406
2027	2.559.080	4.234.520	6.883.359	8.011.565	6.770.414	28.458.938
2028	2.472.545	4.499.394	7.018.779	7.866.658	6.455.793	28.313.170
2029	2.752.778	4.380.322	6.579.082	7.282.921	6.065.318	27.060.421
2030	3.008.248	4.700.326	6.983.777	7.286.556	6.021.422	28.000.329
2031	2.857.883	4.708.647	7.441.844	7.729.987	6.314.414	29.052.775
2032	2.419.239	4.628.175	7.257.320	7.310.438	5.652.679	27.267.851

Donde:

AS32: Trozas aserrables de 32 cm. Largo, 4,1 m

AS28: Trozas aserrables de 28 cm. Largo, 4,1 m

AS24: Trozas aserrables de 24 cm. Largo, 4,1 m

AS20: Trozas aserrables de 20 cm. Largo, 4,1 m

AS16: Trozas aserrables de 16 cm. Largo, 4,1 m

Cuadro 7.5. Volumen en pie Pulpable de raleos y Cosecha final (m3/año)

año	Raleos	Cosecha final	Total
2003	2.006.167	2.982.253	4.988.420
2004	2.162.789	3.465.990	5.628.779
2005	2.112.745	3.920.354	6.033.099
2006	2.199.798	3.853.966	6.053.765
2007	2.165.018	4.056.138	6.221.156
2008	2.026.456	3.790.278	5.816.734
2009	2.109.148	3.654.636	5.763.784
2010	2.208.522	3.710.928	5.919.450
2011	2.275.003	3.589.355	5.864.358
2012	2.144.682	3.967.030	6.111.712
2013	2.091.353	4.119.905	6.211.257
2014	1.365.589	3.692.805	5.058.394
2015	1.408.743	3.604.354	5.013.097
2016	2.456.325	3.534.505	5.990.830
2017	1.874.027	3.429.115	5.303.143
2018	1.988.962	3.561.730	5.550.692
2019	2.063.838	3.725.394	5.789.232
2020	3.964.827	3.468.410	7.433.237
2021	773.995	3.954.267	4.728.261
2022	1.615.864	3.568.480	5.184.344
2023	1.857.318	3.641.814	5.499.131
2024	2.254.800	3.801.209	6.056.009
2025	2.190.481	5.513.184	7.703.665
2026	2.369.250	5.345.156	7.714.406
2027	1.862.665	6.329.761	8.192.426
2028	2.054.315	5.987.336	8.041.651
2029	2.726.178	5.608.209	8.334.387
2030	2.195.651	5.441.182	7.636.833
2031	1.915.387	5.727.654	7.643.041
2032	2.820.263	5.096.683	7.916.946

Cuadro 7.6. Volumen en pie trozas por tipo de producto (m3/año)

año	Podado	Multiprop.	Aserrable	Pulpable	Total
2003	532.942	128.505	16.437.674	4.988.420	22.087.541
2004	1.219.159	351.473	17.272.811	5.628.779	24.472.222
2005	1.378.302	214.937	18.678.383	6.033.099	26.304.721
2006	1.685.911	160.448	19.499.624	6.053.765	27.399.748
2007	1.401.749	126.866	21.745.878	6.221.156	29.495.648
2008	1.930.312	327.706	22.699.795	5.816.734	30.774.547
2009	2.611.535	260.502	22.732.727	5.763.784	31.368.548
2010	2.192.571	320.452	23.020.076	5.919.450	31.452.548
2011	3.265.365	614.496	21.708.330	5.864.358	31.452.549
2012	3.039.967	505.703	21.795.166	6.111.712	31.452.548
2013	3.371.908	203.581	21.665.802	6.211.257	31.452.548
2014	4.588.776	299.291	21.506.086	5.058.394	31.452.547
2015	4.984.725	362.883	21.091.843	5.013.097	31.452.547
2016	3.874.662	1.455.072	20.131.985	5.990.830	31.452.549
2017	4.659.314	1.211.727	20.278.366	5.303.143	31.452.549
2018	5.346.227	798.303	19.757.325	5.550.692	31.452.547
2019	5.234.746	889.600	19.538.967	5.789.232	31.452.546
2020	4.316.897	1.113.243	18.589.172	7.433.237	31.452.550
2021	5.982.856	394.561	20.346.868	4.728.261	31.452.546
2022	4.804.562	924.619	20.539.024	5.184.344	31.452.549
2023	4.893.860	787.521	20.272.037	5.499.131	31.452.549
2024	4.784.771	440.781	20.170.988	6.056.009	31.452.549
2025	4.567.468	914.488	26.723.080	7.703.665	39.908.701
2026	4.365.356	420.532	27.408.406	7.714.406	39.908.700
2027	3.205.747	370.234	28.458.938	8.192.426	40.227.344
2028	3.819.795	52.726	28.313.170	8.041.651	40.227.342
2029	4.763.426	69.109	27.060.421	8.334.387	40.227.343
2030	4.555.771	34.411	28.000.329	7.636.833	40.227.344
2031	3.394.623	136.905	29.052.775	7.643.041	40.227.343
2032	4.665.395	377.154	27.267.851	7.916.946	40.227.345

Anexo 8.

Resultados Escenario (D) Libre

Cuadro 8.1. Volúmenes anuales en pie, por tipo de producto y año (m3)

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	5.020.801	3.777.416	4.242.204	3.880.066	2.494.664	2.001.210	15.593	83.181	6.462	69.225	459.136	37.582	22.087.541
2004	4.385.065	2.664.559	3.335.172	3.438.993	2.629.503	3.102.308	58.835	315.479	26.421	153.409	1.455.357	76.803	21.641.902
2005	4.240.878	2.531.242	3.148.048	3.191.464	2.299.658	2.653.387	36.569	211.484	16.796	187.724	1.349.750	96.032	19.963.032
2006	4.413.001	2.651.249	3.448.832	3.719.977	2.964.121	3.607.451	23.678	145.369	12.691	154.225	1.867.698	99.466	23.107.757
2007	4.216.209	2.435.686	3.226.898	3.512.415	2.956.857	3.865.922	19.093	196.850	13.084	122.795	1.971.610	111.811	22.649.231
2008	4.394.924	2.736.620	3.691.153	3.986.069	3.719.835	4.552.706	54.035	479.767	24.042	161.994	2.852.843	151.201	26.805.190
2009	5.609.561	4.192.010	5.439.023	5.678.490	4.039.944	3.383.445	107.936	384.923	39.596	391.116	2.437.462	181.975	31.885.481
2010	5.714.968	4.230.193	5.553.607	5.389.914	3.921.404	3.244.974	88.060	206.742	39.622	369.790	1.340.333	139.798	30.239.405
2011	6.661.752	5.217.191	6.954.456	7.054.932	4.665.050	3.183.283	80.410	231.162	25.079	571.650	2.004.618	217.823	36.867.405
2012	6.574.090	5.389.086	6.889.104	6.879.624	4.512.807	2.820.790	117.068	210.380	26.771	531.650	2.511.465	227.247	36.690.082
2013	6.369.393	4.890.834	6.295.352	6.373.341	4.387.297	3.254.841	167.953	324.440	44.695	440.413	2.925.295	202.983	35.676.836
2014	6.364.587	5.432.964	6.874.167	6.468.191	4.472.246	3.148.357	184.720	424.651	49.428	403.013	2.823.037	200.614	36.845.977
2015	5.229.549	4.161.558	5.118.715	5.004.577	3.105.877	2.387.049	216.381	547.563	66.420	397.604	2.791.053	154.020	29.180.365
2016	5.360.123	4.093.369	5.024.268	5.100.855	3.268.904	2.627.519	113.898	353.406	31.809	473.857	3.097.556	215.821	29.761.386
2017	5.539.629	4.106.975	5.218.546	5.371.103	3.600.360	3.115.353	97.569	236.352	32.272	497.643	3.130.524	215.563	31.161.887
2018	5.610.324	4.193.073	5.328.023	5.541.114	3.798.399	3.274.486	131.134	315.818	42.245	464.638	3.140.424	219.390	32.059.069
2019	5.463.199	4.032.673	5.298.791	5.593.919	3.739.172	2.958.143	72.570	149.880	31.741	540.873	2.657.793	239.974	30.778.729
2020	5.612.785	4.448.815	5.497.196	5.658.540	3.515.812	2.732.085	151.200	422.654	51.288	416.595	3.148.535	223.002	31.878.507
2021	6.293.462	4.483.493	5.180.154	5.418.178	3.632.927	2.993.772	224.810	810.748	125.582	344.042	3.230.360	226.588	32.964.116
2022	6.410.217	4.588.223	5.501.691	5.657.803	3.743.375	3.150.661	155.499	516.130	62.042	477.849	3.895.772	214.241	34.373.502
2023	6.406.177	4.658.710	5.694.184	5.893.843	4.072.008	3.311.177	145.293	394.676	86.942	494.854	4.330.391	201.120	35.689.376
2024	6.297.015	4.729.303	5.691.983	5.944.154	4.007.289	2.996.177	192.577	694.100	84.154	627.259	4.203.957	232.803	35.700.770
2025	6.653.605	4.752.970	5.938.123	6.235.191	4.327.490	3.314.324	171.932	728.924	91.705	556.925	4.601.020	240.466	37.612.676
2026	6.649.927	4.849.233	6.293.933	6.549.295	4.528.891	3.467.066	187.066	514.180	85.301	542.749	5.188.165	279.328	39.135.528
2027	6.517.360	4.418.792	5.840.499	5.714.048	3.566.393	2.110.051	112.008	228.799	39.145	543.922	3.123.776	276.413	32.491.205
2028	6.651.856	4.609.543	5.716.241	5.834.917	4.149.614	3.435.924	30.094	63.067	11.688	521.117	4.623.205	300.014	35.947.280
2029	6.911.525	4.787.033	6.083.870	5.906.325	4.044.777	2.802.895	39.319	268.995	13.098	591.649	3.975.823	251.227	35.676.535
2030	7.296.857	5.837.609	7.002.800	6.524.042	4.049.124	2.427.908	39.641	253.856	15.740	685.699	3.438.111	273.621	37.845.008
2031	6.111.482	4.727.216	5.864.242	5.906.218	4.121.205	2.887.158	38.871	259.140	17.255	511.751	4.229.008	249.587	34.923.133
2032	6.099.710	5.131.428	6.406.964	6.741.976	5.267.775	4.235.965	34.171	224.792	7.982	429.465	4.876.308	272.280	39.728.814

Donde:

- PULP: trozas pulpables, 8 cm., 2,44 m.
- AS16: trozas aserrables, 16 cm., 4,1 m.
- AS20: trozas aserrables, 20 cm., 4,1 m
- AS24: trozas aserrables, 24 cm., 4,1 m
- AS28: trozas aserrables, 28 cm., 4,1 m
- AS32: trozas aserrables, 32 cm., 4,1 m
- MP28: trozas multipropósito (poda), 28 cm., 5 m.
- MP32: trozas multipropósito (poda), 32 cm., 5 m
- MPT32: trozas multipropósito torno (poda), 32 cm., 2,7 m
- TP28: trozas podadas, 28 cm., total de 4,1 y 5 m
- TP32: trozas podadas, 32 cm., total de 4,1 y 5 m
- PT32: trozas podadas torno, 32 cm, 2,7 m.

Cuadro 8.2. Volumen en pie trozas podadas (m3/año)

año	PT32	PC32	PC28	PL32	PL28	TP32	TP28	Tot. Pod
2003	37.582	159.566	47.822	299.571	21.403	459.136	69.225	565.944
2004	76.803	318.757	52.780	1.136.600	100.629	1.455.357	153.409	1.685.568
2005	96.032	459.550	78.286	890.200	109.439	1.349.750	187.724	1.633.506
2006	99.466	589.243	54.333	1.278.455	99.892	1.867.698	154.225	2.121.389
2007	111.811	749.083	52.262	1.222.528	70.533	1.971.610	122.795	2.206.216
2008	151.201	848.518	53.534	2.004.325	108.460	2.852.843	161.994	3.166.039
2009	181.975	886.986	158.019	1.550.476	233.097	2.437.462	391.116	3.010.553
2010	139.798	497.728	142.345	842.605	227.445	1.340.333	369.790	1.849.921
2011	217.823	653.164	188.189	1.351.454	383.461	2.004.618	571.650	2.794.091
2012	227.247	854.814	222.779	1.656.652	308.871	2.511.465	531.650	3.270.362
2013	202.983	1.022.964	258.164	1.902.331	182.250	2.925.295	440.413	3.568.692
2014	200.614	1.158.323	211.226	1.664.714	191.788	2.823.037	403.013	3.426.664
2015	154.020	1.236.340	190.437	1.554.713	207.167	2.791.053	397.604	3.342.677
2016	215.821	1.146.364	180.059	1.951.193	293.798	3.097.556	473.857	3.787.234
2017	215.563	1.212.773	181.563	1.917.750	316.080	3.130.524	497.643	3.843.729
2018	219.390	1.179.558	200.182	1.960.866	264.457	3.140.424	464.638	3.824.452
2019	239.974	791.843	247.834	1.865.949	293.039	2.657.793	540.873	3.438.640
2020	223.002	1.117.140	194.936	2.031.395	221.659	3.148.535	416.595	3.788.132
2021	226.588	1.272.148	203.885	1.958.212	140.156	3.230.360	344.042	3.800.990
2022	214.241	1.320.644	245.598	2.575.128	232.251	3.895.772	477.849	4.587.862
2023	201.120	1.161.615	264.144	3.168.776	230.710	4.330.391	494.854	5.026.366
2024	232.803	1.282.231	328.338	2.921.726	298.921	4.203.957	627.259	5.064.019
2025	240.466	1.310.910	283.903	3.290.110	273.022	4.601.020	556.925	5.398.411
2026	279.328	1.729.579	279.444	3.458.586	263.305	5.188.165	542.749	6.010.242
2027	276.413	751.982	273.693	2.371.793	270.229	3.123.776	543.922	3.944.111
2028	300.014	1.258.125	211.588	3.365.081	309.529	4.623.205	521.117	5.444.337
2029	251.227	1.225.482	262.160	2.750.341	329.488	3.975.823	591.649	4.818.698
2030	273.621	1.187.804	281.114	2.250.307	404.585	3.438.111	685.699	4.397.431
2031	249.587	1.388.988	209.013	2.840.020	302.738	4.229.008	511.751	4.990.346
2032	272.280	1.603.315	195.133	3.272.994	234.332	4.876.308	429.465	5.578.052

Donde:

PT32: podado torno, diámetro 32 cm, largo 2,7 m

PC32: podado corto, diámetro 32 cm, largo 4,1 m

PC28: podado corto, diámetro 28 cm, largo 4,1 m

PL32: podado largo, diámetro 32 cm, largo 5 m

PL28: podado largo, diámetro 28 cm, largo 5 m

TP32: total podado aserrable 32 cm, ambos largos

TP28: total podado aserrable 28cm, ambos largos

Cuadro 8.3. Volumen en pie trozas podadas de esquema 4 o Multipropósito (m³/año)

año	MPT32	MP32	MP28	Tot MP
2003	6.462	83.181	15.593	105.236
2004	26.421	315.479	58.835	400.735
2005	16.796	211.484	36.569	264.848
2006	12.691	145.369	23.678	181.737
2007	13.084	196.850	19.093	229.027
2008	24.042	479.767	54.035	557.844
2009	39.596	384.923	107.936	532.455
2010	39.622	206.742	88.060	334.424
2011	25.079	231.162	80.410	336.651
2012	26.771	210.380	117.068	354.219
2013	44.695	324.440	167.953	537.088
2014	49.428	424.651	184.720	658.800
2015	66.420	547.563	216.381	830.363
2016	31.809	353.406	113.898	499.113
2017	32.272	236.352	97.569	366.193
2018	42.245	315.818	131.134	489.198
2019	31.741	149.880	72.570	254.191
2020	51.288	422.654	151.200	625.142
2021	125.582	810.748	224.810	1.161.139
2022	62.042	516.130	155.499	733.671
2023	86.942	394.676	145.293	626.911
2024	84.154	694.100	192.577	970.831
2025	91.705	728.924	171.932	992.561
2026	85.301	514.180	187.066	786.547
2027	39.145	228.799	112.008	379.952
2028	11.688	63.067	30.094	104.849
2029	13.098	268.995	39.319	321.413
2030	15.740	253.856	39.641	309.237
2031	17.255	259.140	38.871	315.266
2032	7.982	224.792	34.171	266.944

Donde:

MPT32: podado multipropósito torno, 32 cm, largo 2,7 m.

MP32: podado multipropósito aserrable, 32 cm, largo 5 m.

MP28: podado multipropósito aserrable, 28 cm, largo 5 m

Cuadro 8.4. Volumen en pie trozas aserrables (m3/año)

año	AS32	AS28	AS24	AS20	AS16	Tot ASE
2003	2.001.210	2.494.664	3.880.066	4.242.204	3.777.416	16.395.560
2004	3.102.308	2.629.503	3.438.993	3.335.172	2.664.559	15.170.534
2005	2.653.387	2.299.658	3.191.464	3.148.048	2.531.242	13.823.799
2006	3.607.451	2.964.121	3.719.977	3.448.832	2.651.249	16.391.630
2007	3.865.922	2.956.857	3.512.415	3.226.898	2.435.686	15.997.779
2008	4.552.706	3.719.835	3.986.069	3.691.153	2.736.620	18.686.384
2009	3.383.445	4.039.944	5.678.490	5.439.023	4.192.010	22.732.912
2010	3.244.974	3.921.404	5.389.914	5.553.607	4.230.193	22.340.091
2011	3.183.283	4.665.050	7.054.932	6.954.456	5.217.191	27.074.911
2012	2.820.790	4.512.807	6.879.624	6.889.104	5.389.086	26.491.412
2013	3.254.841	4.387.297	6.373.341	6.295.352	4.890.834	25.201.664
2014	3.148.357	4.472.246	6.468.191	6.874.167	5.432.964	26.395.926
2015	2.387.049	3.105.877	5.004.577	5.118.715	4.161.558	19.777.777
2016	2.627.519	3.268.904	5.100.855	5.024.268	4.093.369	20.114.915
2017	3.115.353	3.600.360	5.371.103	5.218.546	4.106.975	21.412.336
2018	3.274.486	3.798.399	5.541.114	5.328.023	4.193.073	22.135.096
2019	2.958.143	3.739.172	5.593.919	5.298.791	4.032.673	21.622.699
2020	2.732.085	3.515.812	5.658.540	5.497.196	4.448.815	21.852.449
2021	2.993.772	3.632.927	5.418.178	5.180.154	4.483.493	21.708.525
2022	3.150.661	3.743.375	5.657.803	5.501.691	4.588.223	22.641.752
2023	3.311.177	4.072.008	5.893.843	5.694.184	4.658.710	23.629.922
2024	2.996.177	4.007.289	5.944.154	5.691.983	4.729.303	23.368.905
2025	3.314.324	4.327.490	6.235.191	5.938.123	4.752.970	24.568.098
2026	3.467.460	4.528.891	6.549.295	6.293.933	4.849.233	25.688.812
2027	2.110.051	3.566.393	5.714.048	5.840.499	4.418.792	21.649.782
2028	3.435.924	4.149.614	5.834.917	5.716.241	4.609.543	23.746.238
2029	2.802.895	4.044.777	5.906.325	6.083.870	4.787.033	23.624.898
2030	2.427.908	4.049.124	6.524.042	7.002.800	5.837.609	25.841.483
2031	2.887.158	4.121.205	5.906.218	5.864.242	4.727.216	23.506.038
2032	4.235.965	5.267.775	6.741.976	6.406.964	5.131.428	27.784.107

Donde:

AS32: Trozas aserrables de 32 cm. Largo, 4,1 m

AS28: Trozas aserrables de 28 cm. Largo, 4,1 m

AS24: Trozas aserrables de 24 cm. Largo, 4,1 m

AS20: Trozas aserrables de 20 cm. Largo, 4,1 m

AS16: Trozas aserrables de 16 cm. Largo, 4,1 m

Cuadro 8.5. Volumen en pie Pulpable de raleos y Cosecha final (m3/año)

año	Raleos	Cosecha final	Total
2003	2.006.167	3.014.634	5.020.801
2004	2.162.789	2.222.276	4.385.065
2005	2.112.745	2.128.134	4.240.878
2006	2.199.798	2.213.202	4.413.001
2007	2.165.018	2.051.191	4.216.209
2008	2.026.456	2.368.468	4.394.924
2009	2.109.148	3.500.413	5.609.561
2010	2.208.522	3.506.447	5.714.968
2011	2.275.003	4.386.749	6.661.752
2012	2.080.498	4.493.591	6.574.090
2013	2.167.906	4.201.486	6.369.393
2014	1.686.053	4.678.533	6.364.587
2015	1.608.588	3.620.960	5.229.549
2016	1.748.202	3.611.921	5.360.123
2017	1.878.457	3.661.172	5.539.629
2018	1.883.734	3.726.590	5.610.324
2019	1.753.824	3.709.375	5.463.199
2020	1.595.277	4.017.508	5.612.785
2021	2.088.661	4.204.801	6.293.462
2022	2.078.571	4.331.645	6.410.217
2023	1.965.971	4.440.206	6.406.177
2024	1.749.044	4.547.971	6.297.015
2025	2.129.590	4.524.015	6.653.605
2026	2.028.382	4.621.545	6.649.927
2027	2.300.044	4.217.316	6.517.360
2028	2.242.250	4.409.606	6.651.856
2029	2.276.118	4.635.407	6.911.525
2030	1.658.303	5.638.554	7.296.857
2031	1.735.748	4.375.734	6.111.482
2032	1.503.010	4.596.700	6.099.710

Cuadro 8.6. Volumen en pie trozas por tipo de producto (m3/año)

año	Podado	Multiprop.	Aserrable	Pulpable	Total
2003	565.944	105.236	16.395.560	5.020.801	22.087.541
2004	1.685.568	400.735	15.170.534	4.385.065	21.641.902
2005	1.633.506	264.848	13.823.799	4.240.878	19.963.032
2006	2.121.389	181.737	16.391.630	4.413.001	23.107.757
2007	2.206.216	229.027	15.997.779	4.216.209	22.649.231
2008	3.166.039	557.844	18.686.384	4.394.924	26.805.190
2009	3.010.553	532.455	22.732.912	5.609.561	31.885.481
2010	1.849.921	334.424	22.340.091	5.714.968	30.239.405
2011	2.794.091	336.651	27.074.911	6.661.752	36.867.405
2012	3.270.362	354.219	26.491.412	6.574.090	36.690.082
2013	3.568.692	537.088	25.201.664	6.369.393	35.676.836
2014	3.426.664	658.800	26.395.926	6.364.587	36.845.977
2015	3.342.677	830.363	19.777.777	5.229.549	29.180.365
2016	3.787.234	499.113	20.114.915	5.360.123	29.761.386
2017	3.843.729	366.193	21.412.336	5.539.629	31.161.887
2018	3.824.452	489.198	22.135.096	5.610.324	32.059.069
2019	3.438.640	254.191	21.622.699	5.463.199	30.778.729
2020	3.788.132	625.142	21.852.449	5.612.785	31.878.507
2021	3.800.990	1.161.139	21.708.525	6.293.462	32.964.116
2022	4.587.862	733.671	22.641.752	6.410.217	34.373.502
2023	5.026.366	626.911	23.629.922	6.406.177	35.689.376
2024	5.064.019	970.831	23.368.905	6.297.015	35.700.770
2025	5.398.411	992.561	24.568.098	6.653.605	37.612.676
2026	6.010.242	786.547	25.688.812	6.649.927	39.135.528
2027	3.944.111	379.952	21.649.782	6.517.360	32.491.205
2028	5.444.337	104.849	23.746.238	6.651.856	35.947.280
2029	4.818.698	321.413	23.624.898	6.911.525	35.676.535
2030	4.397.431	309.237	25.841.483	7.296.857	37.845.008
2031	4.990.346	315.266	23.506.038	6.111.482	34.923.133
2032	5.578.052	266.944	27.784.107	6.099.710	39.728.814

Anexo 9.

Resultados Escenario (E) de Flujo No Decreciente en Aserrable más Podado

Cuadro 9.1. Volúmenes anuales en pie, por tipo de producto y año (m3)

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	5.032.452	3.794.865	4.259.493	3.873.677	2.491.477	1.994.815	15.593	83.181	6.462	59.614	510.295	33.206	22.087.541
2004	4.290.995	2.577.320	3.235.000	3.416.490	2.615.118	3.124.499	58.835	315.479	26.421	159.775	1.705.099	77.699	21.346.084
2005	4.364.888	2.700.162	3.465.093	3.520.674	2.589.913	2.851.779	36.569	211.484	16.796	188.785	1.550.399	98.351	21.419.977
2006	4.340.740	2.534.948	3.224.987	3.456.994	2.681.964	3.416.535	20.191	141.927	13.139	140.322	1.981.409	106.493	21.937.913
2007	4.282.527	2.522.641	3.242.922	3.498.699	2.828.087	3.630.626	14.964	165.569	12.251	118.323	1.953.058	104.128	22.223.191
2008	4.645.235	3.069.082	4.114.125	4.451.331	4.170.695	4.953.738	54.379	480.784	24.199	170.667	3.405.532	159.495	29.272.857
2009	5.593.998	4.201.962	5.493.480	5.731.791	4.224.706	3.678.983	75.576	382.574	33.145	365.400	2.822.619	201.121	32.498.356
2010	6.374.682	4.976.293	6.331.910	6.104.523	4.142.525	3.207.743	113.885	228.381	42.697	373.364	1.379.971	117.560	33.279.039
2011	5.697.454	4.003.529	5.702.719	6.036.774	4.405.456	3.231.089	58.497	207.463	18.230	566.407	2.600.258	222.902	32.601.811
2012	6.506.358	5.212.171	6.504.783	6.248.615	3.766.259	2.021.057	139.524	239.904	36.700	532.544	2.079.091	224.089	33.410.715
2013	6.089.631	4.595.609	5.725.954	5.760.508	3.883.068	2.880.872	163.725	311.788	40.195	454.716	3.041.313	194.673	32.993.987
2014	6.033.828	4.946.514	6.085.275	5.863.385	3.777.303	2.414.198	216.695	510.197	54.422	479.038	2.696.753	154.079	32.938.185
2015	5.821.928	4.828.365	5.977.283	5.646.826	3.797.857	2.658.445	206.951	529.028	68.606	416.618	2.920.417	176.038	32.726.286
2016	5.364.068	4.191.516	5.353.190	5.404.528	3.797.187	3.460.329	93.755	302.785	29.799	364.916	3.882.365	233.019	32.268.425
2017	5.425.860	4.232.132	5.420.713	5.634.950	3.845.350	3.448.910	111.024	259.578	30.991	486.255	3.387.068	195.938	32.330.216
2018	5.605.693	4.249.985	5.453.602	5.742.631	3.894.426	3.305.613	113.711	283.309	44.524	502.053	3.281.454	202.648	32.510.050
2019	5.484.653	4.186.789	5.549.487	5.767.058	4.036.194	3.279.591	93.620	249.230	37.204	405.667	3.224.256	230.871	32.389.010
2020	5.614.350	4.453.519	5.465.976	5.744.812	3.693.989	2.981.265	139.006	415.175	48.700	507.611	3.530.189	200.285	32.518.707
2021	6.030.715	4.538.808	5.265.511	5.518.444	3.674.521	2.932.584	166.495	627.565	97.313	454.305	3.845.292	244.591	32.935.074
2022	6.637.819	4.591.944	5.432.050	5.472.672	3.531.021	2.804.478	199.519	643.313	83.827	433.308	3.964.258	191.763	33.542.176
2023	5.854.563	4.632.973	5.610.169	5.777.095	3.955.668	3.265.179	144.587	395.220	86.222	502.727	4.669.025	203.386	34.846.180
2024	6.327.056	4.784.642	5.807.224	6.092.823	4.115.311	3.028.977	204.266	711.874	90.278	609.816	4.561.197	242.142	36.068.000
2025	6.444.146	4.683.704	5.747.183	5.969.280	4.023.874	3.074.856	183.009	740.632	98.012	581.455	4.977.047	219.519	36.185.092
2026	6.851.457	4.800.024	6.186.954	6.301.068	4.021.901	2.583.820	221.286	573.609	99.203	650.851	4.379.545	275.005	36.592.400
2027	7.114.587	4.556.045	6.144.825	6.126.597	4.325.341	3.105.445	50.113	116.524	16.402	514.983	4.570.602	280.478	36.855.532
2028	7.048.719	4.852.538	5.975.554	5.906.304	4.158.693	3.381.685	28.839	120.794	10.681	557.544	4.551.306	288.963	36.789.665
2029	7.277.514	5.419.801	6.615.909	6.212.194	3.958.245	2.613.768	50.121	232.338	18.281	570.263	3.967.182	265.059	37.018.459
2030	6.713.603	5.158.160	6.535.827	6.321.798	4.164.354	2.632.218	36.737	247.321	15.740	663.322	3.911.215	264.836	36.454.547
2031	6.054.324	4.838.783	5.905.838	6.019.542	4.338.761	3.216.131	53.773	285.658	15.740	478.197	4.556.887	263.520	35.795.270
2032	5.916.352	5.057.230	6.260.919	6.588.205	5.006.764	3.904.466	40.396	267.819	18.559	476.165	4.743.463	253.981	38.306.898

Donde:

- PULP: trozas pulpables, 8 cm., 2,44 m.
- AS16: trozas aserrables, 16 cm., 4,1 m.
- AS20: trozas aserrables, 20 cm., 4,1 m
- AS24: trozas aserrables, 24 cm., 4,1 m
- AS28: trozas aserrables, 28 cm., 4,1 m
- AS32: trozas aserrables, 32 cm., 4,1 m
- MP28: trozas multipropósito (poda), 28 cm., 5 m.
- MP32: trozas multipropósito (poda), 32 cm., 5 m
- MPT32: trozas multipropósito torno (poda), 32 cm., 2,7 m
- TP28: trozas podadas, 28 cm., total de 4,1 y 5 m
- TP32: trozas podadas, 32 cm., total de 4,1 y 5 m
- PT32: trozas podadas torno, 32 cm., 2,7 m.

Cuadro 9.2. Volumen en pie trozas podadas (m³/año)

año	PT32	PC32	PC28	PL32	PL28	TP32	TP28	Tot. Pod
2003	33.206	143.136	38.212	367.159	21.403	510.295	59.614	603.115
2004	77.699	311.855	59.146	1.393.244	100.629	1.705.099	159.775	1.942.572
2005	98.351	514.933	83.451	1.035.466	105.334	1.550.399	188.785	1.837.535
2006	106.493	598.102	43.789	1.383.307	96.533	1.981.409	140.322	2.228.223
2007	104.128	678.535	45.514	1.274.524	72.808	1.953.058	118.323	2.175.509
2008	159.495	883.297	62.191	2.522.235	108.475	3.405.532	170.667	3.735.694
2009	201.121	894.324	137.856	1.928.295	227.544	2.822.619	365.400	3.389.139
2010	117.560	495.056	158.454	884.915	214.910	1.379.971	373.364	1.870.896
2011	222.902	776.967	170.846	1.823.291	395.560	2.600.258	566.407	3.389.566
2012	224.089	674.950	239.888	1.404.141	292.656	2.079.091	532.544	2.835.725
2013	194.673	1.005.420	252.907	2.035.893	201.809	3.041.313	454.716	3.690.702
2014	154.079	897.693	270.013	1.799.060	209.025	2.696.753	479.038	3.329.870
2015	176.038	1.070.830	206.344	1.849.587	210.274	2.920.417	416.618	3.513.073
2016	233.019	1.563.716	125.219	2.318.648	239.697	3.882.365	364.916	4.480.299
2017	195.938	1.325.142	158.151	2.061.926	328.104	3.387.068	486.255	4.069.262
2018	202.648	1.135.099	214.327	2.146.355	287.725	3.281.454	502.053	3.986.155
2019	230.871	973.124	210.479	2.251.132	195.188	3.224.256	405.667	3.860.793
2020	200.285	1.041.023	232.986	2.489.166	274.624	3.530.189	507.611	4.238.084
2021	244.591	1.241.250	217.419	2.604.042	236.885	3.845.292	454.305	4.544.188
2022	191.763	1.362.335	251.627	2.601.922	181.681	3.964.258	433.308	4.589.328
2023	203.386	1.113.533	286.171	3.555.492	216.556	4.669.025	502.727	5.375.137
2024	242.142	1.341.132	309.033	3.220.065	300.784	4.561.197	609.816	5.413.155
2025	219.519	1.252.136	315.249	3.724.911	266.206	4.977.047	581.455	5.778.020
2026	275.005	1.625.123	304.844	2.754.422	346.007	4.379.545	650.851	5.305.401
2027	280.478	859.276	258.349	3.711.326	256.635	4.570.602	514.983	5.366.064
2028	288.963	1.243.935	211.258	3.307.371	346.286	4.551.306	557.544	5.397.813
2029	265.059	1.182.614	266.386	2.784.568	303.876	3.967.182	570.263	4.802.504
2030	264.836	1.229.414	274.499	2.681.801	388.823	3.911.215	663.322	4.839.374
2031	263.520	1.449.736	205.678	3.107.151	272.519	4.556.887	478.197	5.298.604
2032	253.981	1.498.487	203.324	3.244.976	272.841	4.743.463	476.165	5.473.610

Donde:

PT32: podado torno, diámetro 32 cm, largo 2,7 m

PC32: podado corto, diámetro 32 cm, largo 4,1 m

PC28: podado corto, diámetro 28 cm, largo 4,1 m

PL32: podado largo, diámetro 32 cm, largo 5 m

PL28: podado largo, diámetro 28 cm, largo 5 m

TP32: total podado aserrable 32 cm, ambos largos

TP28: total podado aserrable 28cm, ambos largos

Cuadro 9.3. Volumen en pie trozas podadas de esquema 4 o Multipropósito (m³/año)

año	MPT32	MP32	MP28	Tot MP
2003	6.462	83.181	15.593	105.236
2004	26.421	315.479	58.835	400.735
2005	16.796	211.484	36.569	264.848
2006	13.139	141.927	20.191	175.257
2007	12.251	165.569	14.964	192.783
2008	24.199	480.784	54.379	559.362
2009	33.145	382.574	75.576	491.295
2010	42.697	228.381	113.885	384.963
2011	18.230	207.463	58.497	284.190
2012	36.700	239.904	139.524	416.128
2013	40.195	311.788	163.725	515.707
2014	54.422	510.197	216.695	781.315
2015	68.606	529.028	206.951	804.586
2016	29.799	302.785	93.755	426.338
2017	30.991	259.578	111.024	401.593
2018	44.524	283.309	113.711	441.544
2019	37.204	249.230	93.620	380.055
2020	48.700	415.175	139.006	602.882
2021	97.313	627.565	166.495	891.373
2022	83.827	643.313	199.519	926.659
2023	86.222	395.220	144.587	626.029
2024	90.278	711.874	204.266	1.006.418
2025	98.012	740.632	183.009	1.021.653
2026	99.203	573.609	221.286	894.098
2027	16.402	116.524	50.113	183.039
2028	10.681	120.794	28.839	160.314
2029	18.281	232.338	50.121	300.740
2030	15.740	247.321	36.737	299.798
2031	15.740	285.658	53.773	355.171
2032	18.559	267.819	40.396	326.774

Donde:

MPT32: podado multipropósito torno, 32 cm, largo 2,7 m.

MP32: podado multipropósito aserrable, 32 cm, largo 5 m.

MP28: podado multipropósito aserrable, 28 cm, largo 5 m

Cuadro 9.4. Volumen en pie trozas aserrables (m³/año)

año	AS32	AS28	AS24	AS20	AS16	Tot ASE
2003	1.994.815	2.491.477	3.873.677	4.259.493	3.794.865	16.414.327
2004	3.124.499	2.615.118	3.416.490	3.235.000	2.577.320	14.968.427
2005	2.851.779	2.589.913	3.520.674	3.465.093	2.700.162	15.127.621
2006	3.416.535	2.681.964	3.456.994	3.224.987	2.534.948	15.315.428
2007	3.630.626	2.828.087	3.498.699	3.242.922	2.522.641	15.722.976
2008	4.953.738	4.170.695	4.451.331	4.114.125	3.069.082	20.758.971
2009	3.678.983	4.224.706	5.731.791	5.493.480	4.201.962	23.330.922
2010	3.207.743	4.142.525	6.104.523	6.331.910	4.976.293	24.762.993
2011	3.231.089	4.405.456	6.036.774	5.702.719	4.003.529	23.379.568
2012	2.021.057	3.766.259	6.248.615	6.504.783	5.212.171	23.752.885
2013	2.880.872	3.883.068	5.760.508	5.725.954	4.595.609	22.846.011
2014	2.414.198	3.777.303	5.863.385	6.085.275	4.946.514	23.086.675
2015	2.658.445	3.797.857	5.646.826	5.977.283	4.828.365	22.908.776
2016	3.460.329	3.797.187	5.404.528	5.353.190	4.191.516	22.206.751
2017	3.448.910	3.845.350	5.634.950	5.420.713	4.232.132	22.582.055
2018	3.305.613	3.894.426	5.742.631	5.453.602	4.249.985	22.646.258
2019	3.279.591	4.036.194	5.767.058	5.549.487	4.186.789	22.819.119
2020	2.981.265	3.693.989	5.744.812	5.465.976	4.453.519	22.339.561
2021	2.932.584	3.674.521	5.518.444	5.265.511	4.538.808	21.929.868
2022	2.804.478	3.531.021	5.472.672	5.432.050	4.591.944	21.832.164
2023	3.265.179	3.955.668	5.777.095	5.610.169	4.632.973	23.241.084
2024	3.028.977	4.115.311	6.092.823	5.807.224	4.784.642	23.828.979
2025	3.074.856	4.023.874	5.969.280	5.747.183	4.683.704	23.498.896
2026	2.583.820	4.021.901	6.301.068	6.186.954	4.800.024	23.893.768
2027	3.105.445	4.325.341	6.126.597	6.144.825	4.556.045	24.258.253
2028	3.381.685	4.158.693	5.906.304	5.975.554	4.852.538	24.274.774
2029	2.613.768	3.958.245	6.212.194	6.615.909	5.419.801	24.819.917
2030	2.632.218	4.164.354	6.321.798	6.535.827	5.158.160	24.812.357
2031	3.216.131	4.338.761	6.019.542	5.905.838	4.838.783	24.319.055
2032	3.904.466	5.006.764	6.588.205	6.260.919	5.057.230	26.817.585

Donde:

AS32: Trozas aserrables de 32 cm. Largo, 4,1 m

AS28: Trozas aserrables de 28 cm. Largo, 4,1 m

AS24: Trozas aserrables de 24 cm. Largo, 4,1 m

AS20: Trozas aserrables de 20 cm. Largo, 4,1 m

AS16: Trozas aserrables de 16 cm. Largo, 4,1 m

Cuadro 9.5. Volumen en pie Pulpable de raleos y Cosecha final (m3/año)

año	Raleos	Cosecha final	Total
2003	2.006.167	3.026.285	5.032.452
2004	2.162.789	2.128.205	4.290.995
2005	2.112.745	2.252.143	4.364.888
2006	2.199.798	2.140.942	4.340.740
2007	2.165.018	2.117.509	4.282.527
2008	2.026.456	2.618.779	4.645.235
2009	2.109.148	3.484.850	5.593.998
2010	2.208.522	4.166.161	6.374.682
2011	2.275.003	3.422.451	5.697.454
2012	2.080.498	4.425.859	6.506.358
2013	2.133.718	3.955.913	6.089.631
2014	1.742.832	4.290.996	6.033.828
2015	1.605.306	4.216.622	5.821.928
2016	1.805.076	3.558.992	5.364.068
2017	1.815.068	3.610.792	5.425.860
2018	1.922.910	3.682.782	5.605.693
2019	1.797.826	3.686.827	5.484.653
2020	1.602.149	4.012.201	5.614.350
2021	1.802.628	4.228.087	6.030.715
2022	2.323.904	4.313.915	6.637.819
2023	1.439.855	4.414.708	5.854.563
2024	1.792.498	4.534.558	6.327.056
2025	1.905.897	4.538.249	6.444.146
2026	2.268.708	4.582.749	6.851.457
2027	2.794.670	4.319.918	7.114.587
2028	2.344.179	4.704.539	7.048.719
2029	2.011.921	5.265.594	7.277.514
2030	1.871.088	4.842.515	6.713.603
2031	1.555.156	4.499.168	6.054.324
2032	1.367.133	4.549.219	5.916.352

Cuadro 9.6. Volumen en pie trozas por tipo de producto (m3/año)

año	Podado	Multiprop.	Aserrable	Pulpable	Total
2003	603.115	105.236	16.414.327	5.032.452	22.155.130
2004	1.942.572	400.735	14.968.427	4.290.995	21.602.728
2005	1.837.535	264.848	15.127.621	4.364.888	21.594.892
2006	2.228.223	175.257	15.315.428	4.340.740	22.059.649
2007	2.175.509	192.783	15.722.976	4.282.527	22.373.796
2008	3.735.694	559.362	20.758.971	4.645.235	29.699.262
2009	3.389.139	491.295	23.330.922	5.593.998	32.805.354
2010	1.870.896	384.963	24.762.993	6.374.682	33.393.535
2011	3.389.566	284.190	23.379.568	5.697.454	32.750.777
2012	2.835.725	416.128	23.752.885	6.506.358	33.511.095
2013	3.690.702	515.707	22.846.011	6.089.631	33.142.050
2014	3.329.870	781.315	23.086.675	6.033.828	33.231.687
2015	3.513.073	804.586	22.908.776	5.821.928	33.048.363
2016	4.480.299	426.338	22.206.751	5.364.068	32.477.456
2017	4.069.262	401.593	22.582.055	5.425.860	32.478.770
2018	3.986.155	441.544	22.646.258	5.605.693	32.679.649
2019	3.860.793	380.055	22.819.119	5.484.653	32.544.620
2020	4.238.084	602.882	22.339.561	5.614.350	32.794.876
2021	4.544.188	891.373	21.929.868	6.030.715	33.396.144
2022	4.589.328	926.659	21.832.164	6.637.819	33.985.971
2023	5.375.137	626.029	23.241.084	5.854.563	35.096.813
2024	5.413.155	1.006.418	23.828.979	6.327.056	36.575.608
2025	5.778.020	1.021.653	23.498.896	6.444.146	36.742.715
2026	5.305.401	894.098	23.893.768	6.851.457	36.944.723
2027	5.366.064	183.039	24.258.253	7.114.587	36.921.943
2028	5.397.813	160.314	24.274.774	7.048.719	36.881.619
2029	4.802.504	300.740	24.819.917	7.277.514	37.200.675
2030	4.839.374	299.798	24.812.357	6.713.603	36.665.132
2031	5.298.604	355.171	24.319.055	6.054.324	36.027.155
2032	5.473.610	326.774	26.817.585	5.916.352	38.534.321

Anexo 10

Volúmenes anuales “en planta”, por producto y año (m3)

Los volúmenes se describen:

PULP: trozas pulpables, 8 cm., 2,44 m.
 AS16: trozas aserrables, 16 cm., 4,1 m.
 AS20: trozas aserrables, 20 cm., 4,1 m
 AS24: trozas aserrables, 24 cm., 4,1 m
 AS28: trozas aserrables, 28 cm., 4,1 m
 AS32: trozas aserrables, 32 cm., 4,1 m
 MP28: trozas multipropósito (poda), 28 cm., 5 m.
 MP32: trozas multipropósito (poda), 32 cm., 5 m
 MPT32: trozas multipropósito torno (poda), 32 cm., 2,7 m
 TP28: trozas podadas, 28 cm., total de 4,1 y 5 m
 TP32: trozas podadas, 32 cm., total de 4,1 y 5 m
 PT32: trozas podadas torno, 32 cm, 2,7 m.

Escenario Base (A): cumple vector de demanda y volumen máximo no decreciente

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	7.802.947	2.819.674	3.212.244	3.289.626	2.383.078	2.036.560	14.067	80.745	6.268	33.380	381.292	27.660	22.087.541
2004	8.549.889	2.935.155	3.326.592	3.409.780	2.398.267	2.306.352	44.388	259.759	22.041	134.326	1.011.631	74.040	24.472.221
2005	9.054.733	3.226.247	3.606.768	3.555.662	2.513.038	2.753.721	28.236	177.075	13.712	109.164	1.209.318	57.049	26.304.721
2006	9.080.432	3.163.893	3.648.304	3.704.046	2.874.518	3.027.950	28.058	161.180	14.207	128.497	1.492.915	75.747	27.399.746
2007	9.843.280	3.544.092	4.278.153	4.357.744	3.172.015	2.820.958	21.848	95.217	14.942	135.676	1.106.325	105.398	29.495.648
2008	9.265.399	3.264.423	4.109.203	4.512.745	3.678.318	3.690.147	79.306	212.342	30.700	224.756	1.624.838	82.370	30.774.547
2009	9.029.496	3.111.286	3.938.243	4.378.818	3.666.607	4.401.511	20.628	203.569	10.483	252.050	2.241.306	114.552	31.368.549
2010	9.284.721	3.214.862	3.949.048	4.379.783	3.769.548	4.260.076	27.932	214.972	18.746	220.722	2.015.596	96.542	31.452.549
2011	9.203.739	3.028.239	3.904.502	4.507.194	3.657.297	3.213.030	69.694	484.910	41.166	422.529	2.763.728	156.521	31.452.548
2012	9.617.956	3.329.272	4.138.161	4.545.657	3.517.800	2.773.853	65.564	353.054	27.891	365.417	2.598.349	119.120	31.452.548
2013	9.548.123	3.196.620	3.977.235	4.406.981	3.513.602	2.961.482	48.698	154.846	17.637	422.087	3.087.740	117.499	31.452.549
2014	8.391.136	3.022.287	3.740.324	4.311.046	3.540.461	3.361.251	70.128	211.364	24.354	437.706	4.155.486	187.001	31.452.547
2015	8.041.217	3.022.583	3.775.934	4.364.577	3.609.844	3.423.361	80.580	242.672	24.428	467.578	4.215.812	183.963	31.452.548
2016	9.655.641	2.932.801	3.857.486	4.584.290	3.359.724	2.200.395	354.706	1.037.806	118.158	535.852	2.640.977	174.712	31.452.547
2017	9.074.913	2.898.624	3.765.586	4.566.109	3.338.524	2.586.096	243.202	711.252	119.883	596.704	3.363.530	188.123	31.452.547
2018	9.508.567	3.053.121	3.797.847	4.437.043	3.126.683	2.406.306	154.834	479.076	71.663	698.701	3.556.456	162.254	31.452.548
2019	9.720.329	3.068.536	3.702.212	4.407.282	2.912.118	2.222.909	185.132	555.160	83.431	643.649	3.757.576	194.213	31.452.547
2020	11.172.193	2.613.032	3.341.471	4.285.103	2.777.455	1.970.209	258.020	700.857	92.308	699.580	3.331.556	210.766	31.452.549
2021	7.667.954	3.226.843	3.468.372	3.806.287	3.425.965	3.316.465	61.954	155.670	43.976	257.081	5.743.127	278.855	31.452.548
2022	8.575.048	3.159.418	3.730.279	4.174.008	3.317.501	2.660.053	99.059	369.431	94.570	530.178	4.522.727	220.279	31.452.549
2023	8.645.865	2.904.683	3.670.654	4.538.110	3.432.405	2.408.661	178.350	534.413	99.788	596.616	4.175.411	267.595	31.452.549
2024	9.207.935	3.201.251	3.758.577	4.260.321	3.356.597	2.503.519	133.155	416.735	43.081	389.440	3.962.276	219.662	31.452.548
2025	10.104.409	3.449.094	4.005.025	4.523.768	3.261.525	2.405.622	202.519	812.343	56.801	437.193	2.989.145	155.604	32.403.047
2026	10.415.162	3.636.029	4.467.888	5.316.695	4.052.036	3.019.614	102.329	265.160	61.884	630.310	4.458.807	331.703	36.757.615
2027	11.545.895	4.302.976	5.139.456	5.367.960	3.965.048	2.727.915	71.917	141.818	25.197	433.760	3.933.660	277.625	37.933.225
2028	11.667.346	4.224.799	5.133.500	5.523.910	4.062.319	2.606.078	52.176	125.519	21.964	570.967	3.614.978	329.667	37.933.225
2029	11.656.722	4.128.844	4.939.144	5.225.520	4.213.442	2.967.947	11.775	41.601	4.807	395.575	4.740.210	379.823	38.705.409
2030	11.512.856	4.201.014	5.068.741	5.495.896	4.206.645	2.952.881	0	0	0	573.092	4.355.226	339.058	38.705.409
2031	11.537.718	3.972.753	5.004.641	5.643.666	4.354.163	3.329.454	41.892	54.332	44.797	375.821	3.985.775	360.396	38.705.406
2032	11.877.194	3.927.650	5.100.408	5.903.743	4.264.462	2.632.049	135.486	207.655	89.085	690.451	3.612.137	265.087	38.705.409

Escenario B: Forestación 30 mil ha

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	7.613.686	2.715.360	3.151.663	3.302.870	2.449.546	2.167.964	18.010	90.051	7.812	57.948	477.863	34.769	22.087.542
2004	8.375.467	2.864.100	3.240.036	3.373.539	2.440.816	2.515.187	44.607	278.696	22.450	114.611	1.132.064	70.647	24.472.221
2005	9.124.127	3.254.178	3.619.120	3.541.202	2.504.496	2.684.367	28.771	165.450	13.189	121.780	1.192.628	55.413	26.304.721
2006	9.252.489	3.248.040	3.751.569	3.799.189	2.829.905	2.796.625	27.631	132.826	13.220	137.203	1.319.935	91.117	27.399.748
2007	9.864.195	3.528.877	4.262.776	4.384.061	3.196.827	2.882.548	24.831	96.628	14.952	158.944	1.004.577	76.431	29.495.648
2008	9.001.171	3.175.920	3.925.076	4.215.518	3.700.280	4.373.750	23.794	324.129	20.325	75.796	1.854.087	84.702	30.774.547
2009	8.886.987	3.079.339	3.825.220	4.222.396	3.676.009	4.454.958	22.440	213.504	12.293	168.641	2.685.824	120.938	31.368.549
2010	9.628.502	3.374.900	4.195.934	4.653.812	3.724.312	3.470.647	66.043	194.725	27.238	337.635	1.659.922	118.879	31.452.548
2011	9.344.059	3.085.914	4.018.900	4.639.937	3.685.879	3.191.834	81.402	393.064	41.758	455.893	2.362.071	151.840	31.452.549
2012	9.382.342	3.223.742	4.057.789	4.551.103	3.407.433	2.664.255	74.983	368.673	34.062	490.005	3.018.576	179.583	31.452.546
2013	9.592.753	3.238.631	4.011.829	4.469.655	3.325.861	2.711.412	126.803	288.895	40.191	485.166	3.009.201	152.151	31.452.547
2014	8.681.164	3.168.891	3.923.552	4.440.707	3.551.820	3.098.007	38.252	150.449	16.181	389.262	3.793.826	200.438	31.452.548
2015	8.569.853	2.737.541	3.500.201	4.176.187	3.653.766	3.528.662	76.889	308.077	22.308	381.780	4.312.103	185.182	31.452.548
2016	9.595.621	2.832.249	3.719.788	4.485.607	3.288.580	2.605.123	350.901	1.067.423	129.033	539.714	2.729.344	109.163	31.452.548
2017	8.722.693	2.665.512	3.486.103	4.491.920	3.534.741	3.109.154	168.518	493.618	71.839	566.412	3.932.735	209.303	31.452.548
2018	8.767.610	2.643.218	3.402.381	4.402.533	3.445.587	3.042.430	144.372	475.054	65.700	580.732	4.260.257	222.675	31.452.548
2019	9.619.511	3.070.735	3.610.202	4.363.979	3.111.648	2.292.529	234.911	682.719	89.927	512.750	3.634.844	228.792	31.452.547
2020	10.143.840	3.048.794	3.661.522	4.563.241	2.928.938	1.974.788	226.331	587.134	78.804	693.730	3.323.578	221.849	31.452.548
2021	8.004.126	3.139.887	3.609.053	4.209.279	3.444.701	2.945.781	85.718	341.297	73.074	306.844	5.043.928	248.860	31.452.548
2022	8.611.960	2.944.730	3.757.843	4.441.336	3.615.681	2.705.892	86.214	343.182	68.121	569.826	4.080.402	227.361	31.452.549
2023	9.507.386	3.329.624	3.904.510	4.345.265	3.268.730	2.185.288	121.347	461.109	94.642	531.660	3.537.402	165.583	31.452.547
2024	10.283.580	3.740.864	4.361.429	4.689.304	3.600.061	2.601.575	109.290	295.898	35.752	459.249	4.087.786	222.731	34.487.516
2025	13.071.206	4.767.933	5.717.092	6.339.119	4.485.296	2.821.716	165.275	569.150	92.435	683.424	3.939.221	235.397	42.887.262
2026	13.638.001	4.886.278	5.934.749	6.365.839	4.446.944	2.669.909	157.663	390.785	59.125	664.955	3.441.706	231.308	42.887.262
2027	14.026.409	5.385.727	6.321.221	6.544.582	4.404.498	2.526.454	82.363	157.078	24.270	656.692	3.864.842	287.253	44.281.390
2028	14.497.009	5.625.292	6.654.948	6.629.293	4.332.668	2.175.342	83.007	161.977	48.039	595.713	3.200.773	277.326	44.281.387
2029	14.440.217	5.316.968	6.557.235	6.747.486	4.313.459	2.296.984	97.142	309.767	78.112	738.295	3.142.019	243.703	44.281.387
2030	14.042.507	5.357.292	6.411.551	6.785.560	4.538.516	2.820.508	123.409	426.904	68.783	474.117	3.334.188	241.938	44.625.273
2031	13.995.868	5.374.952	6.538.296	6.871.056	4.392.242	2.826.713	158.401	478.657	107.978	645.726	3.031.034	204.350	44.625.273
2032	12.411.898	4.256.443	5.481.746	6.309.604	5.343.556	4.681.978	131.649	493.812	125.493	339.582	4.813.318	236.194	44.625.273

Escenario C: Ganancia genética de 25-15-10

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	7.682.023	2.747.377	3.178.112	3.300.931	2.424.344	2.101.633	20.337	94.230	8.501	54.876	443.464	31.714	22.087.541
2004	8.431.459	2.897.228	3.266.081	3.392.851	2.464.012	2.469.780	43.576	271.858	22.105	111.838	1.035.306	66.129	24.472.222
2005	9.094.644	3.242.611	3.621.843	3.560.614	2.486.781	2.719.156	26.417	167.286	12.731	107.611	1.208.836	56.192	26.304.721
2006	9.181.820	3.217.108	3.705.063	3.719.840	2.842.565	2.901.606	22.404	120.677	10.811	153.097	1.438.329	86.427	27.399.748
2007	9.708.229	3.473.259	4.172.689	4.307.262	3.179.455	3.137.120	20.067	88.898	12.534	106.645	1.194.687	94.803	29.495.648
2008	9.302.801	3.281.861	4.125.837	4.507.949	3.695.009	3.629.912	76.176	205.094	30.680	210.598	1.617.072	91.558	30.774.547
2009	9.151.622	3.167.761	4.019.342	4.414.210	3.618.139	4.148.167	20.494	217.638	12.961	253.102	2.219.570	125.542	31.368.548
2010	9.333.114	3.250.023	3.986.427	4.413.640	3.765.174	4.215.617	30.370	257.481	20.625	237.376	1.845.030	97.672	31.452.548
2011	9.215.733	3.042.974	3.913.887	4.502.719	3.675.770	3.265.967	68.814	480.792	41.103	390.930	2.704.452	149.408	31.452.549
2012	9.654.591	3.349.570	4.176.537	4.582.915	3.492.731	2.692.134	76.919	374.535	33.096	388.479	2.504.931	126.111	31.452.548
2013	9.706.038	3.357.399	4.141.322	4.442.952	3.450.244	2.808.669	41.378	137.862	15.016	384.545	2.845.185	121.939	31.452.548
2014	8.347.996	3.070.060	3.811.847	4.366.583	3.588.661	3.415.515	66.618	197.230	21.283	418.423	3.974.167	174.164	31.452.547
2015	8.267.607	2.979.216	3.756.588	4.405.461	3.566.154	3.174.029	80.471	240.803	24.463	512.437	4.225.839	219.479	31.452.547
2016	9.226.324	2.825.670	3.692.962	4.458.316	3.392.699	2.624.137	331.125	945.483	109.057	529.827	3.156.322	160.628	31.452.549
2017	8.478.967	2.701.022	3.586.999	4.565.998	3.483.330	2.855.912	254.146	786.470	114.992	657.417	3.754.739	212.557	31.452.549
2018	8.652.106	2.787.993	3.475.048	4.331.180	3.303.202	2.834.042	170.302	509.888	80.918	728.848	4.407.862	171.156	31.452.547
2019	8.970.718	2.974.565	3.543.634	4.354.622	3.138.887	2.420.858	185.371	573.895	89.229	645.605	4.329.258	225.904	31.452.546
2020	10.533.910	2.785.251	3.427.875	4.448.083	2.955.159	1.961.272	260.376	708.001	91.217	674.338	3.356.146	250.921	31.452.550
2021	7.896.251	3.228.902	3.522.427	3.984.158	3.431.767	3.045.464	76.168	245.638	54.995	305.514	5.388.234	273.028	31.452.546
2022	8.541.281	3.065.957	3.812.875	4.619.394	3.377.268	2.377.648	156.030	603.357	125.357	592.433	3.932.200	248.748	31.452.549
2023	8.802.154	3.170.102	3.668.224	4.471.430	3.307.734	2.411.937	121.885	520.890	111.640	518.845	4.112.976	234.731	31.452.549
2024	9.348.854	3.168.752	3.744.491	4.358.797	3.269.647	2.383.600	114.013	279.326	25.351	476.022	4.052.276	231.420	31.452.549
2025	12.277.541	4.539.755	5.280.611	5.787.681	3.920.801	2.693.062	217.732	581.129	71.258	538.417	3.784.937	215.777	39.908.701
2026	12.309.652	4.437.437	5.465.331	5.823.806	4.272.442	2.855.870	86.496	255.267	59.426	425.286	6.634.511	283.175	39.908.700
2027	13.168.273	5.077.811	6.008.674	5.850.855	4.022.794	2.559.080	106.969	208.827	35.011	317.218	2.666.320	205.513	40.227.344
2028	12.929.702	4.841.845	5.899.993	5.965.962	4.274.424	2.472.545	13.172	32.162	4.786	513.866	3.027.412	251.471	40.227.342
2029	12.901.737	4.548.988	5.462.191	5.592.219	4.161.306	2.752.778	7.849	48.787	9.790	412.830	4.053.351	275.517	40.227.343
2030	12.274.829	4.516.066	5.464.917	5.936.211	4.465.309	3.008.248	8.070	19.441	5.241	508.420	3.760.293	260.300	40.227.344
2031	12.531.514	4.735.811	5.797.490	6.325.568	4.473.214	2.857.883	39.203	46.530	44.015	351.634	2.817.734	206.748	40.227.343
2032	12.532.848	4.239.509	5.482.828	6.168.722	4.396.767	2.419.239	82.301	185.656	91.481	710.610	3.613.855	303.530	40.227.345

Escenario D: Libre

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	7.740.159	2.833.062	3.181.853	3.298.056	2.369.931	2.001.210	14.033	80.686	6.268	65.764	459.136	37.582	22.087.541
2004	6.556.133	1.998.419	2.501.379	2.923.144	2.498.028	3.102.308	52.951	306.014	25.628	145.738	1.455.357	76.803	21.641.902
2005	6.274.295	1.898.432	2.361.036	2.712.745	2.184.675	2.653.387	32.912	205.139	16.292	178.338	1.349.750	96.032	19.963.032
2006	6.659.044	1.988.437	2.586.624	3.161.980	2.815.915	3.607.451	21.310	141.008	12.310	146.514	1.867.698	99.466	23.107.757
2007	6.320.907	1.826.764	2.420.174	2.985.553	2.809.014	3.865.922	17.184	190.944	12.691	116.655	1.971.610	111.811	22.649.231
2008	6.814.387	2.052.465	2.768.365	3.388.159	3.533.843	4.552.706	48.631	465.374	23.321	153.894	2.852.843	151.201	26.805.190
2009	9.114.175	3.144.008	4.079.268	4.826.717	3.837.947	3.383.445	97.142	373.376	38.408	371.560	2.437.462	181.975	31.885.481
2010	9.200.162	3.172.645	4.165.205	4.581.427	3.725.334	3.244.974	79.254	200.540	38.434	351.300	1.340.333	139.796	30.239.405
2011	11.040.467	3.912.893	5.215.842	5.996.692	4.431.798	3.183.283	72.369	224.227	24.326	543.068	2.004.618	217.823	36.867.405
2012	10.946.625	4.041.814	5.166.828	5.847.681	4.287.167	2.820.790	105.361	204.069	25.967	505.068	2.511.465	227.247	36.690.082
2013	10.391.195	3.668.126	4.721.514	5.417.340	4.167.932	3.254.841	151.158	314.707	43.354	418.393	2.925.295	202.983	35.676.836
2014	10.688.056	4.074.723	5.155.625	5.497.963	4.248.634	3.148.357	166.248	411.912	47.946	382.863	2.823.037	200.614	36.845.977
2015	8.515.535	3.121.169	3.839.037	4.253.890	2.950.583	2.387.049	194.743	531.136	64.427	377.724	2.791.053	154.020	32.180.365
2016	8.614.745	3.070.027	3.768.201	4.335.727	3.105.459	2.627.519	102.508	342.803	30.855	450.164	3.097.556	215.821	29.761.386
2017	8.899.390	3.080.231	3.913.909	4.565.437	3.420.342	3.115.353	87.812	229.262	31.304	472.761	3.130.524	215.563	31.161.887
2018	9.058.772	3.144.804	3.996.017	4.709.947	3.608.479	3.274.486	118.021	306.343	40.978	441.406	3.140.424	219.390	32.059.069
2019	8.861.861	3.024.505	3.974.094	4.754.831	3.552.214	2.958.143	65.313	145.384	30.789	513.829	2.657.793	239.974	30.778.729
2020	9.174.028	3.336.611	4.122.897	4.809.759	3.340.021	2.732.085	136.080	409.974	49.749	395.765	3.148.535	223.002	31.878.507
2021	9.771.520	3.362.620	3.885.115	4.605.452	3.451.281	2.993.772	202.329	786.425	121.814	326.840	3.230.360	226.588	32.964.116
2022	10.025.322	3.441.167	4.126.268	4.809.132	3.556.207	3.150.661	139.949	500.647	60.181	453.957	3.895.772	214.241	34.373.502
2023	10.135.798	3.494.032	4.270.638	5.009.767	3.868.408	3.311.177	130.764	382.835	84.334	470.112	4.330.391	201.120	35.689.376
2024	10.068.292	3.546.977	4.268.987	5.052.531	3.806.924	2.996.177	173.319	673.277	81.629	595.896	4.203.957	232.803	35.700.770
2025	10.547.690	3.564.727	4.453.593	5.299.913	4.111.116	3.314.324	154.739	707.056	88.954	529.079	4.601.020	240.466	37.612.676
2026	10.708.386	3.636.925	4.720.450	5.566.900	4.302.446	3.467.460	168.360	498.754	82.742	515.612	5.188.165	279.328	39.135.528
2027	10.164.045	3.314.094	4.380.374	4.856.941	3.388.073	2.110.051	100.807	221.935	37.971	516.726	3.123.776	276.413	32.491.205
2028	10.347.328	3.457.157	4.287.181	4.959.679	3.942.133	3.435.924	27.085	61.175	11.337	495.061	4.623.205	300.014	35.947.280
2029	10.759.416	3.590.274	4.562.902	5.020.376	3.842.538	2.802.895	35.387	260.926	12.705	562.066	3.975.823	251.227	35.676.535
2030	11.734.359	4.378.207	5.252.100	5.545.436	3.846.668	2.427.908	35.677	246.240	15.268	651.414	3.438.111	273.621	37.845.008
2031	9.889.106	3.545.412	4.398.181	5.020.286	3.915.145	2.887.158	34.984	251.366	16.737	486.164	4.229.008	249.587	34.923.133
2032	10.290.866	3.848.571	4.805.223	5.730.680	5.004.386	4.235.965	30.753	218.048	7.742	407.991	4.876.308	272.280	39.728.814

Escenario E: Flujo No Decreciente del volumen Aserrable más el Podado

año	Tot. PULP	AS16	AS20	AS24	AS28	AS32	MP28	MP32	MPT32	TP28	TP32	PT32	TOTAL
2003	7.691.307	2.846.149	3.194.619	3.292.625	2.366.903	1.994.815	14.033	80.686	6.268	56.634	510.295	33.206	22.087.541
2004	6.154.789	1.932.990	2.426.250	2.904.017	2.484.362	3.124.499	52.951	306.014	25.628	151.786	1.705.099	77.699	21.346.084
2005	6.408.828	2.025.121	2.598.820	2.992.573	2.460.418	2.851.779	32.912	205.139	16.292	179.346	1.550.399	98.351	21.419.977
2006	6.325.323	1.901.211	2.418.740	2.938.445	2.547.866	3.416.535	18.172	137.669	12.745	133.305	1.981.409	106.493	21.937.913
2007	6.252.269	1.891.981	2.432.192	2.973.894	2.686.683	3.630.626	13.467	160.602	11.883	112.406	1.953.058	104.128	22.223.191
2008	6.919.987	2.301.811	3.085.594	3.783.631	3.962.160	4.953.738	48.941	466.361	23.473	162.134	3.405.532	159.495	29.272.857
2009	8.820.163	3.151.471	4.120.110	4.872.022	4.013.470	3.678.983	68.018	371.097	32.151	347.130	2.822.619	201.121	32.498.356
2010	10.248.231	3.732.220	4.748.933	5.188.844	3.935.398	3.207.743	102.497	221.529	41.416	354.696	1.379.971	117.560	33.279.039
2011	9.141.780	3.002.647	4.277.039	5.131.258	4.185.183	3.231.089	52.647	201.239	17.683	538.086	2.600.258	222.902	32.601.811
2012	10.509.699	3.909.128	4.878.587	5.311.323	3.577.946	3.021.057	125.572	323.707	35.599	505.917	2.079.091	224.089	33.410.715
2013	9.629.856	3.446.707	4.294.465	4.896.432	3.688.915	2.880.872	147.352	302.434	38.989	431.980	3.041.313	194.673	32.993.987
2014	9.629.206	3.709.886	4.563.956	4.983.877	3.588.437	2.414.198	195.026	494.891	52.790	455.086	2.696.753	154.079	32.938.185
2015	9.297.635	3.621.274	4.482.963	4.799.802	3.607.964	2.658.445	186.256	513.157	66.548	395.787	2.920.417	176.038	32.726.286
2016	8.579.351	3.143.637	4.014.893	4.593.849	3.607.327	3.460.329	84.379	293.701	28.905	346.670	3.882.365	233.019	32.688.425
2017	8.772.160	3.174.099	4.065.535	4.789.707	3.653.083	3.448.910	99.922	251.791	30.061	461.942	3.387.068	195.938	32.330.216
2018	8.964.415	3.187.489	4.090.202	4.881.237	3.699.705	3.305.613	102.339	274.810	43.188	476.950	3.281.454	202.648	32.510.050
2019	8.868.218	3.140.092	4.162.115	4.902.000	3.834.385	3.279.591	84.258	241.753	36.088	385.383	3.224.256	230.871	32.389.010
2020	8.917.673	3.340.139	4.099.482	4.883.090	3.509.290	2.981.265	125.106	402.720	47.239	482.230	3.530.189	200.285	32.518.707
2021	9.093.328	3.404.106	3.949.134	4.690.678	3.400.795	2.932.584	149.845	608.738	94.393	431.589	3.845.292	244.591	32.935.074
2022	9.760.906	3.443.958	4.074.037	4.651.772	3.354.469	2.804.478	179.567	624.014	81.312	411.643	3.964.258	191.763	33.542.176
2023	9.283.101	3.474.730	4.207.627	4.910.531	3.757.885	3.265.179	130.128	383.363	83.636	477.590	4.669.025	203.386	34.846.180
2024	9.662.086	3.588.482	4.355.418	5.178.900	3.909.546	3.028.977	183.840	690.518	87.569	579.326	4.561.197	242.142	36.068.000
2025	9.663.363	3.512.778	4.310.387	5.073.888	3.822.680	2.734.856	164.708	718.413	95.071	552.382	4.977.047	219.519	36.185.092
2026	10.466.990	3.600.018	4.640.216	5.355.908	3.820.806	2.583.820	199.157	556.401	96.227	618.309	4.379.545	275.005	36.592.400
2027	10.893.399	3.417.034	4.608.619	5.207.608	4.109.074	3.105.445	45.102	113.028	15.910	489.234	4.570.602	280.478	36.855.532
2028	10.792.373	3.639.403	4.481.665	5.020.359	3.950.759	3.381.685	25.955	117.170	10.360	529.667	4.551.306	288.963	36.789.665
2029	11.275.010	4.064.851	4.961.932	5.280.365	3.760.333	3.073.768	45.109	225.368	17.733	541.749	3.967.182	265.059	37.018.459
2030	10.627.734	3.868.620	4.901.870	5.373.528	3.956.137	2.632.218	33.063	239.902	15.268	630.156	3.911.215	264.836	36.454.547
2031	9.666.793	3.629.087	4.429.378	5.116.611	4.121.823	3.216.131	48.396	277.088	15.268	454.287	4.556.887	263.520	35.795.270
2032	9.793.475	3.792.922	4.695.690	5.599.974	4.756.426	3.904.466	36.356	259.784	18.002	452.357	4.743.463	253.981	38.306.898



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