

Table VI-9 Unit Price and Unit Cost of Major Chemicals

Salt Cake	US\$	156 /t	(₱ 2,808/t)
Limestone	US\$	0.9/t	(₱ 16/t)
Washer Additives	US\$	1,709 /t	(₱ 30,763/t)
Pitch Dispersion	US\$	2,742 /t	(₱ 49,358/t)
Chlorine	US\$	263 /t	(₱ 4,729/t)
Caustic Soda	US\$	164 /t	(₱ 2,949/t)
Hypochlorite	US\$	431 /t	(₱ 7,752/t)
Hydrogen Peroxide	US\$	2,094 /t	(₱ 37,683/t)
Sodium Silicate	US\$	214 /t	(₱ 3,853/t)
Sodium Sulfitc	US\$	223 /t	(₱ 4,019/t)
Coco Oil	US\$	861 /t	(₱ 15,506/T)
Alum	US\$	168 /t	(₱ 3,016/t)
Rosin Size	US\$	2,038 /t	(₱ 36,681/t)
Acetic Acid	US\$	1,658 /t	(₱ 29,840/t)
Rhodamine Red	US\$	25.3/kg	(₱ 455/kg)
Methyl Violet	US\$	29.1/kg	(₱ 523/kg)

Table VI-10 Annual Variable Cost Without Renovation
(Unit ; 1,000 US\$)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. RAW MATERIALS										
Pulpwood	15,943	15,943	15,943	15,943	15,943	15,943	15,943	15,943	15,943	15,943
White Chip	13,001	13,001	13,001	13,001	13,001	13,001	13,001	13,001	13,001	13,001
Red Chip	5,762	5,762	5,762	5,762	5,762	5,762	5,762	5,762	5,762	5,762
	7,239	7,239	7,239	7,239	7,239	7,239	7,239	7,239	7,239	7,239
N-UKP	2,942	2,942	2,942	2,942	2,942	2,942	2,942	2,942	2,942	2,942
B. CHEMICALS										
	5,738	5,738	5,738	5,738	5,738	5,738	5,738	5,738	5,738	5,738
Salt Cake (100%)	620	620	620	620	620	620	620	620	620	620
Limestone	2	2	2	2	2	2	2	2	2	2
Washer Additives	65	65	65	65	65	65	65	65	65	65
Pitch Dispersion	143	143	143	143	143	143	143	143	143	143
Chlorine (100%)	525	525	525	525	525	525	525	525	525	525
Caustic Soda (100%)	205	205	205	205	205	205	205	205	205	205
Hypo-chlorite (as ave.Cl)	375	375	375	375	375	375	375	375	375	375
Hydrogen Peroxide	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095	1,095
Sodium Silicate (100%)	192	192	192	192	192	192	192	192	192	192
Sodium Sulfite (100%)	58	58	58	58	58	58	58	58	58	58
Coco Oil	131	131	131	131	131	131	131	131	131	131
Alum	407	407	407	407	407	407	407	407	407	407
Sizing Agent	632	632	632	632	632	632	632	632	632	632
Acetic Acid	10	10	10	10	10	10	10	10	10	10
Rhodamine Red	41	41	41	41	41	41	41	41	41	41
Methyl Violet	171	171	171	171	171	171	171	171	171	171
Other Chemicals	1,066	1,066	1,066	1,066	1,066	1,066	1,066	1,066	1,066	1,066
C. UTILITIES										
	34,790	34,790	34,790	34,790	34,790	34,790	34,790	34,790	34,790	34,790
Electric Power	2,867	2,867	2,867	2,867	2,867	2,867	2,867	2,867	2,867	2,867
Steam	30,072	30,072	30,072	30,072	30,072	30,072	30,072	30,072	30,072	30,072
Bunker C Oil for Lime Kiln	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365
Mill Water	486	486	486	486	486	486	486	486	486	486
D. MISCELLANEOUS MATERIALS										
	3,986	3,986	3,986	3,986	3,986	3,986	3,986	3,986	3,986	3,986
F. TOTAL										
	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457

Table VI-11 Annual Variable Cost on Renovation of Plan A
(Unit : 1,000 US\$)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. RAW MATERIALS	17,486	23,884	25,803	26,206	26,206	26,206	26,206	26,206	26,206	26,206
Pulpwood	10,023	13,516	14,579	14,787	14,787	14,787	14,787	14,787	14,787	14,787
White Chip	4,815	6,250	6,630	6,626	6,626	6,626	6,626	6,626	6,626	6,626
Red Chip	5,208	7,266	7,949	8,161	8,161	8,161	8,161	8,161	8,161	8,161
N-BKP	4,770	6,655	7,279	7,474	7,474	7,474	7,474	7,474	7,474	7,474
N-UKP	2,698	3,713	3,945	3,945	3,945	3,945	3,945	3,945	3,945	3,945
B. CHEMICALS	4,515	6,190	6,695	6,806	6,806	6,806	6,806	6,806	6,806	6,806
Salt Cake (100%)	412	543	581	585	585	585	585	585	585	585
Limestone	1	2	2	2	2	2	2	2	2	2
Washer Additives	39	51	55	56	56	56	56	56	56	56
Pitch Dispersion	110	143	151	151	151	151	151	151	151	151
Chlorine (100%)	153	213	239	239	239	239	239	239	239	239
Caustic Soda (100%)	65	91	100	103	103	103	103	103	103	103
Hypo-chlorite (as ave. Cl)	100	140	153	157	157	157	157	157	157	157
Hydrogen Peroxide	984	1,374	1,503	1,543	1,543	1,543	1,543	1,543	1,543	1,543
Sodium Silicate (100%)	198	276	302	310	310	310	310	310	310	310
Sodium Sulfite (100%)	210	293	320	328	328	328	328	328	328	328
Coco Oil	151	209	229	235	235	235	235	235	235	235
Alum	348	473	511	519	519	519	519	519	519	519
Sizing Agent	515	678	719	719	719	719	719	719	719	719
Acetic Acid	9	13	14	14	14	14	14	14	14	14
Rhodamine Red	37	51	56	58	58	58	58	58	58	58
Methyl Violet	153	214	234	240	240	240	240	240	240	240
Other Chemicals	1,030	1,426	1,532	1,547	1,547	1,547	1,547	1,547	1,547	1,547
C. UTILITIES	24,368	32,985	35,617	36,164	36,164	36,164	36,164	36,164	36,164	36,164
Electric Power	3,230	4,444	4,800	4,876	4,876	4,876	4,876	4,876	4,876	4,876
Steam	19,869	26,922	29,081	29,537	29,537	29,537	29,537	29,537	29,537	29,537
Bunker C Oil for Lime Kiln	906	1,195	1,278	1,286	1,286	1,286	1,286	1,286	1,286	1,286
Mill Water	313	424	458	465	465	465	465	465	465	465
D. MISCELLANEOUS MATERIALS	3,539	4,924	5,346	5,454	5,454	5,454	5,454	5,454	5,454	5,454
F. TOTAL	49,958	67,983	73,461	74,630	74,630	74,630	74,630	74,630	74,630	74,630

Table VI-12 Annual Variable Cost After Renovation of Plan B
(Unit : 1,000 US\$)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. RAW MATERIALS	17,486	25,223	31,475	31,956	31,956	31,956	31,956	31,956	31,956	31,956
Pulpwood	10,023	14,813	17,574	17,849	17,849	17,849	17,849	17,849	17,849	17,849
White Chip	4,815	7,547	9,625	9,688	9,688	9,688	9,688	9,688	9,688	9,688
Red Chip	5,208	7,266	7,949	8,161	8,161	8,161	8,161	8,161	8,161	8,161
N-BKP	4,770	6,655	7,279	7,474	7,474	7,474	7,474	7,474	7,474	7,474
X-EKP	2,693	4,755	6,622	6,633	6,633	6,633	6,633	6,633	6,633	6,633
B. CHEMICALS	4,515	6,716	7,971	8,115	8,115	8,115	8,115	8,115	8,115	8,115
Salt Cake (100%)	412	627	774	782	782	782	782	782	782	782
Limestone	1	2	3	3	3	3	3	3	3	3
Washer Additives	39	58	72	73	73	73	73	73	73	73
Pitch Dispersion	110	165	211	214	214	214	214	214	214	214
Chlorine (100%)	153	213	233	239	239	239	239	239	239	239
Caustic Soda (100%)	65	91	100	103	103	103	103	103	103	103
Hypo-chlorite (as ave.Cl)	100	140	153	157	157	157	157	157	157	157
Hydrogen Peroxide	984	1,374	1,503	1,543	1,543	1,543	1,543	1,543	1,543	1,543
Sodium Silicate (100%)	198	276	302	310	310	310	310	310	310	310
Sodium Sulfite (100%)	210	293	320	328	328	328	328	328	328	328
Coco Oil	151	209	229	235	235	235	235	235	235	235
Alum	348	527	638	649	649	649	649	649	649	649
Sizing Agent	515	862	1,159	1,167	1,167	1,167	1,167	1,167	1,167	1,167
Acetic Acid	9	13	14	14	14	14	14	14	14	14
Rhodamine Red	37	51	56	58	58	58	58	58	58	58
Methyl Violet	153	214	234	240	240	240	240	240	240	240
Other Chemicals	1,030	1,601	1,970	2,000	2,000	2,000	2,000	2,000	2,000	2,000
C. UTILITIES	24,368	32,965	39,068	39,692	39,692	39,692	39,692	39,692	39,692	39,692
Electric Power	3,280	4,523	5,350	5,437	5,437	5,437	5,437	5,437	5,437	5,437
Steam	19,869	26,620	31,492	32,003	32,003	32,003	32,003	32,003	32,003	32,003
Bunker C Oil for Lime Kiln	906	1,380	1,703	1,720	1,720	1,720	1,720	1,720	1,720	1,720
Mill Water	313	442	523	532	532	532	532	532	532	532
D. MISCELLANEOUS MATERIALS	3,589	5,183	5,952	6,072	6,072	6,072	6,072	6,072	6,072	6,072
F. TOTAL	49,958	71,087	84,466	85,835	85,835	85,835	85,835	85,835	85,835	85,835

Table VI-13-1 Income Statement on Renovation of Plan A
 Before Income Tax
 (Unit : 1,000 US\$)
 Original Financing Plan

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. INCREMENTAL SALES REVENUE										
Sales Revenue Without Renovation	-13,399	21,023	31,459	33,598	33,598	33,598	33,598	33,598	33,598	33,598
Sales Revenue After Renovation	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315
	96,976	131,338	141,774	143,913	143,913	143,913	143,913	143,913	143,913	143,913
B. INCREMENT OF MANUFACTURING COST										
	-7,527	11,981	17,476	18,649	18,649	18,649	18,649	18,649	18,649	18,649
B-1. Variable Cost Related										
Variable Cost Without Renovation	-10,499	7,526	13,004	14,173	14,173	14,173	14,173	14,173	14,173	14,173
Variable Cost After Renovation	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457
	49,958	67,983	73,461	74,630	74,630	74,630	74,630	74,630	74,630	74,630
B-2. Fixed Cost Related										
Labour Cost	2,972	4,455	4,472	4,476	4,476	4,476	4,476	4,476	4,476	4,476
Depreciation & Amortization	3	3	3	3	3	3	3	3	3	3
Maintenance Cost	1,429	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856
Tax & Insurance	1,143	1,143	1,143	1,143	1,143	1,143	1,143	1,143	1,143	1,143
Overhead Cost	419	419	419	419	419	419	419	419	419	419
	-22	34	51	55	55	55	55	55	55	55
C. INCREMENT OF GROSS PROFIT										
	-5,812	9,042	13,983	14,949	14,949	14,949	14,949	14,949	14,949	14,949
D. INCREMENT OF SALES EXPENSES										
	-534	841	1,258	1,344	1,344	1,344	1,344	1,344	1,344	1,344
E. INCREMENT OF EXCISE TAX										
	-240	401	598	643	643	643	643	643	643	643
F. INCREMENT OF OPERATING PROFIT										
	-5,038	7,800	12,127	12,962	12,962	12,962	12,962	12,962	12,962	12,962
G. INCREMENT OF INTEREST ON DEBT										
			5,219	1,965	1,691	1,397	1,103	809	515	221
H. INCREMENTAL NET PROFIT BEFORE INCOME TAX										
	-5,038	7,800	6,908	10,977	11,271	11,565	11,859	12,153	12,447	12,741

Table VI-13-2 Income Statement on Renovation of Plan A
After Income Tax
Original Financing Plan
(Unit : 1,000 US\$)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. INCREMENTAL SALES REVENUE										
Sales Revenue Without Renovation	-13,339	21,023	31,459	33,598	33,598	33,598	33,598	33,598	33,598	33,598
Sales Revenue After Renovation	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315
	96,976	131,338	141,774	143,913	143,913	143,913	143,913	143,913	143,913	143,913
B. INCREMENT OF MANUFACTURING COST										
	-7,527	11,981	17,476	18,649	18,649	18,649	18,649	18,649	18,649	18,649
B-1. Variable Cost Related										
Variable Cost Without Renovation	-10,499	7,526	13,004	14,173	14,173	14,173	14,173	14,173	14,173	14,173
Variable Cost After Renovation	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457
	49,958	67,983	73,461	74,630	74,630	74,630	74,630	74,630	74,630	74,630
B-2. Fixed Cost Related										
Labour Cost	2,972	4,455	4,472	4,476	4,476	4,476	4,476	4,476	4,476	4,476
Depreciation & Amortization	3	3	3	3	3	3	3	3	3	3
Maintenance Cost	1,429	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856
Tax & Insurance	1,143	1,143	1,143	1,143	1,143	1,143	1,143	1,143	1,143	1,143
Overhead Cost	419	419	419	419	419	419	419	419	419	419
	-22	34	51	55	55	55	55	55	55	55
C. INCREMENT OF GROSS PROFIT										
	-5,812	9,042	13,983	14,949	14,949	14,949	14,949	14,949	14,949	14,949
D. INCREMENT OF SALES EXPENSES										
	-534	841	1,258	1,344	1,344	1,344	1,344	1,344	1,344	1,344
E. INCREMENT OF EXCISE TAX										
	-240	401	598	643	643	643	643	643	643	643
F. INCREMENT OF OPERATING PROFIT										
	-5,038	7,800	12,127	12,962	12,962	12,962	12,962	12,962	12,962	12,962
G. INCREMENT OF INTEREST ON DEBT										
			5,219	1,985	1,691	1,397	1,103	809	515	221
H. INCREMENTAL NET PROFIT BEFORE INCOME TAX										
	-5,038	7,800	6,908	10,977	11,271	11,565	11,859	12,153	12,447	12,741
I. INCREMENTAL INCOME TAX										
	0	967	2,418	3,842	3,945	4,048	4,151	4,254	4,356	4,459
J. INCREMENTAL NET PROFIT AFTER INCOME TAX										
	-5,038	6,833	4,490	7,135	7,326	7,517	7,708	7,899	8,091	8,282

Table VI-14-1 Income Statement on Renovation of Plan B
Before Income Tax (Unit : 1,000 US\$)
Original Financing Plan

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. INCREMENTAL SALES REVENUE										
Sales Revenue Without Renovation	-13,339	31,399	55,937	58,441	58,441	58,441	58,441	58,441	58,441	58,441
Sales Revenue After Renovation	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315
	96,976	141,714	165,712	168,756	168,756	168,756	168,756	168,756	168,756	168,756
B. INCREMENT OF MANUFACTURING COST										
	-7,527	16,759	30,887	32,261	32,261	32,261	32,261	32,261	32,261	32,261
B-1. Variable Cost Related										
Variable Cost Without Renovation	-10,499	10,630	24,009	25,378	25,378	25,378	25,378	25,378	25,378	25,378
Variable Cost After Renovation	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457
	49,958	71,087	84,466	85,835	85,835	85,835	85,835	85,835	85,835	85,835
B-2. Fixed Cost Related										
Labour Cost	2,972	6,129	6,878	6,883	6,883	6,883	6,883	6,883	6,883	6,883
	3	40	40	40	40	40	40	40	40	40
Depreciation & Amortization	1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
Maintenance Cost	1,143	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808
Tax & Insurance	419	563	663	663	663	663	663	663	663	663
Overhead Cost	-22	53	95	100	100	100	100	100	100	100
C. INCREMENT OF GROSS PROFIT	-5,812	14,640	24,510	26,180	26,180	26,180	26,180	26,180	26,180	26,180
D. INCREMENT OF SALES EXPENSES	-534	1,256	2,216	2,338	2,338	2,338	2,338	2,338	2,338	2,338
E. INCREMENT OF EXCISE TAX	-240	590	1,041	1,095	1,095	1,095	1,095	1,095	1,095	1,095
F. INCREMENT OF OPERATING PROFIT	-5,038	12,794	21,253	22,747	22,747	22,747	22,747	22,747	22,747	22,747
G. INCREMENT OF INTEREST ON DEBT			5,920	3,770	2,365	1,961	1,555	1,149	747	341
H. INCREMENTAL NET PROFIT BEFORE INCOME TAX	-5,038	12,794	15,333	18,977	20,382	20,786	21,192	21,598	22,000	22,406

Table VI-14-2 Income Statement on Renovation of Plan B
After Income Tax (Unit : 1,000 US\$)
Original Financing Plan

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. INCREMENTAL SALES REVENUE										
Sales Revenue Without Renovation	-13,339	31,399	55,397	58,441	58,441	58,441	58,441	58,441	58,441	58,441
Sales Revenue After Renovation	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315
	96,976	141,714	165,712	168,756	168,756	168,756	168,756	168,756	168,756	168,756
B. INCREMENT OF MANUFACTURING COST										
	-7,527	16,759	30,887	32,261	32,261	32,261	32,261	32,261	32,261	32,261
B-1. Variable Cost Related										
Variable Cost Without Renovation	-10,499	10,630	24,099	25,378	25,378	25,378	25,378	25,378	25,378	25,378
Variable Cost After Renovation	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457
	49,958	71,087	84,466	85,835	85,835	85,835	85,835	85,835	85,835	85,835
B-2. Fixed Cost Related										
Labour Cost	2,972	6,129	6,878	6,883	6,883	6,883	6,883	6,883	6,883	6,883
Depreciation & Amortization	3	40	40	40	40	40	40	40	40	40
Maintenance Cost	1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
Tax & Insurance	1,143	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808
Overhead Cost	419	663	663	663	663	663	663	663	663	663
	-22	53	95	100	100	100	100	100	100	100
C. INCREMENT OF GROSS PROFIT										
	-5,812	14,640	24,510	26,180	26,180	26,180	26,180	26,180	26,180	26,180
D. INCREMENT OF SALES EXPENSES										
	-534	1,256	2,216	2,338	2,338	2,338	2,338	2,338	2,338	2,338
E. INCREMENT OF EXCISE TAX										
	-240	590	1,041	1,095	1,095	1,095	1,095	1,095	1,095	1,095
F. INCREMENT OF OPERATING PROFIT										
	-5,038	12,794	21,253	22,747	22,747	22,747	22,747	22,747	22,747	22,747
G. INCREMENT OF INTEREST ON DEBT										
			5,920	3,770	2,365	1,961	1,555	1,149	747	341
H. CUMULATIVE NET PROFIT BEFORE INCOME TAX										
	-5,038	7,136	23,089	42,066	62,448	83,234	104,426	126,024	148,024	170,430
I. INCREMENTAL INCOME TAX										
	0	2,715	5,367	6,642	7,134	7,275	7,417	7,559	7,700	7,842
J. INCREMENTAL NET PROFIT AFTER INCOME TAX										
	-5,038	10,079	9,966	12,335	13,248	13,511	13,775	14,039	14,300	14,564

Table VI-14-3 Income Statement on Renovation of Plan B (ALT)
Before Income Tax
(Unit ; 1,000 US\$)
Original Financing Plan

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. INCREMENTAL SALES REVENUE										
Sales Revenue Without Renovation	-13,839	29,550	50,782	54,166	54,166	54,166	54,166	54,166	54,166	54,166
Sales Revenue After Renovation	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315
	96,976	139,865	161,097	164,481	164,481	164,481	164,481	164,481	164,481	164,481
B. INCREMENT OF MANUFACTURING COST										
	-7,527	16,759	30,887	32,261	32,261	32,261	32,261	32,261	32,261	32,261
B-1. Variable Cost Related										
Variable Cost Without Renovation	-10,499	10,630	24,009	25,378	25,378	25,378	25,378	25,378	25,378	25,378
Variable Cost After Renovation	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457
	49,958	71,087	84,466	85,835	85,835	85,835	85,835	85,835	85,835	85,835
B-2. Fixed Cost Related										
Labour Cost	2,972	6,129	6,878	6,883	6,883	6,883	6,883	6,883	6,883	6,883
Depreciation & Amortization	3	40	40	40	40	40	40	40	40	40
Maintenance Cost	1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
Tax & Insurance	1,143	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808
Overhead Cost	419	663	663	663	663	663	663	663	663	663
	-22	53	95	100	100	100	100	100	100	100
C. INCREMENT OF GROSS PROFIT	-5,812	12,791	19,895	21,905	21,905	21,905	21,905	21,905	21,905	21,905
D. INCREMENT OF SALES EXPENSES	-534	1,182	2,031	2,167	2,167	2,167	2,167	2,167	2,167	2,167
E. INCREMENT OF EXCISE TAX	-240	590	1,041	1,095	1,095	1,095	1,095	1,095	1,095	1,095
F. INCREMENT OF OPERATING PROFIT	-5,038	11,019	16,823	18,643	18,643	18,643	18,643	18,643	18,643	18,643
G. INCREMENT OF INTEREST ON DEBT			5,920	3,770	2,365	1,961	1,555	1,149	747	341
H. INCREMENTAL NET PROFIT BEFORE INCOME TAX	-5,038	11,019	10,903	14,873	16,278	16,682	17,088	17,494	17,896	18,302

Table VI-14-4 Income Statement on Renovation of Plan B (ALT)
After Income Tax
(Unit : 1,000 US\$)
Original Financing Plan.

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. INCREMENTAL SALES REVENUE										
Sales Revenue without Renovation	-13,339	29,550	50,782	54,166	54,166	54,166	54,166	54,166	54,166	54,166
Sales Revenue After Renovation	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315	110,315
	96,976	139,865	161,097	164,481	164,481	164,481	164,481	164,481	164,481	164,481
B. INCREMENT OF MANUFACTURING COST										
	-7,527	16,759	30,887	32,261	32,261	32,261	32,261	32,261	32,261	32,261
B-1. Variable Cost Related										
Variable Cost without Renovation	-10,499	10,630	24,009	25,378	25,378	25,378	25,378	25,378	25,378	25,378
Variable Cost After Renovation	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457	60,457
	49,958	71,087	84,466	85,835	85,835	85,835	85,835	85,835	85,835	85,835
B-2. Fixed Cost Related										
Labour Cost	2,972	6,129	6,878	6,883	6,883	6,883	6,883	6,883	6,883	6,883
	3	40	40	40	40	40	40	40	40	40
Depreciation & Amortization	1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
Maintenance Cost	1,143	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808	1,808
Tax & Insurance	419	663	663	663	663	663	663	663	663	663
Overhead Cost	-22	53	95	100	100	100	100	100	100	100
C. INCREMENT OF GROSS PROFIT										
	-5,812	12,791	19,895	21,905	21,905	21,905	21,905	21,905	21,905	21,905
D. INCREMENT OF SALES EXPENSES										
	-534	1,182	2,031	2,167	2,167	2,167	2,167	2,167	2,167	2,167
E. INCREMENT OF EXCISE TAX										
	-240	590	1,041	1,095	1,095	1,095	1,095	1,095	1,095	1,095
F. INCREMENT OF OPERATING PROFIT										
	-5,038	11,019	16,823	18,643	18,643	18,643	18,643	18,643	18,643	18,643
G. INCREMENT OF INTEREST ON DEBT										
			5,920	3,770	2,365	1,961	1,555	1,149	747	341
H. INCREMENTAL NET PROFIT BEFORE INCOME TAX										
	-5,038	11,019	10,903	14,873	16,278	16,682	17,088	17,494	17,896	18,302
I. INCREMENTAL INCOME TAX										
	0	2,093	3,816	5,206	5,697	5,839	5,981	6,123	6,264	6,406
J. INCREMENTAL NET PROFIT AFTER INCOME TAX										
	-5,038	8,926	7,087	9,667	10,581	10,843	11,107	11,371	11,632	11,896

Table VI-15-1 Cash Flow Statement on Renovation of Plan A
Before Income Tax (Unit ; 1,000 US\$)
Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Source of Cash	4,105	37,267	10,656	14,983	15,818	15,818	15,818	15,818	15,818	15,818	15,818
A-1. Cash Generated From Operation		-3,609	10,656	14,983	15,818	15,818	15,818	15,818	15,818	15,818	15,818
Operating Profit		-5,038	7,800	12,127	12,962	12,962	12,962	12,962	12,962	12,962	12,962
Depreciation & Amortization		1,429	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856
A-2. Financial Resources	4,105	40,876									
PICOP's Own Funds	4,105	18,470									
Long Term Loan	0	22,406									
B. Uses of Cash	4,105	40,876	0	8,019	4,785	4,491	4,197	3,903	3,609	3,315	3,027
B-1. Investment	4,105	33,991									
B-2. Inventory & Start-up Expenses		6,885									
B-3. Debt Service				8,019	4,785	4,491	4,197	3,903	3,609	3,315	3,027
Repayment of Long Term Loan				2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
Interest on Long Term Loan				5,219	1,985	1,691	1,397	1,103	809	515	221
B-4. Income Tax Payment		0	0	0	0	0	0	0	0	0	0
C. Cash Increase or (Decrease)	0	-3,609	10,656	6,964	11,033	11,327	11,621	11,915	12,209	12,503	12,791
C-1. Beginning Cash Balance		0	-3,609	7,047	14,011	25,044	36,371	47,992	59,907	72,116	84,619
C-2. Ending Cash Balance	0	-3,609	7,047	14,011	25,044	36,371	47,992	59,907	72,116	84,619	97,410

Table VI-15-2 Cash Flow Statement on Renovation of Plan A
After Income Tax (Unit : 1,000 US\$)
Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Source of Cash	4,105	37,267	10,656	14,983	15,818	15,818	15,818	15,818	15,818	15,818	15,818
A-1. Cash Generated From Operation		-3,609	10,656	14,983	15,818	15,818	15,818	15,818	15,818	15,818	15,818
Operating Profit		-5,038	7,800	12,127	12,962	12,962	12,962	12,962	12,962	12,962	12,962
Depreciation & Amortization		1,429	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856	2,856
A-2. Financial Resources	4,105	40,876									
PICOP's Own Funds	4,105	18,470									
Long Term Loan	0	22,406									
B. Uses of Cash	4,105	40,876	967	10,437	8,627	8,436	8,245	8,054	7,863	7,671	7,486
B-1. Investment	4,105	33,991									
B-2. Inventory & Start-up Expenses		6,885									
B-3. Debt Service				8,019	4,785	4,491	4,197	3,903	3,609	3,315	3,027
Repayment of Long Term Loan				2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,806
Interest on Long Term Loan				5,219	1,985	1,691	1,397	1,103	809	515	221
B-4. Income Tax Payment			967	2,418	3,842	3,945	4,048	4,151	4,254	4,356	4,459
C. Cash Increase or (Decrease)	0	-3,609	9,689	4,546	7,191	7,382	7,573	7,764	7,955	8,147	8,332
C-1. Beginning Cash Balance		0	-3,609	6,080	10,626	17,817	25,199	32,772	40,536	48,491	56,638
C-2. Ending Cash Balance	0	-3,609	6,080	10,626	17,817	25,199	32,772	40,536	48,491	56,638	64,970

Table VI-16-1 Cash Flow Statement on Renovation of Plan B
Before Income Tax
Original Financing Plan
(Unit : 1,000 US\$)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Source of Cash	5,752	53,815	20,850	25,525	27,019	27,019	27,019	27,019	27,019	27,019	27,019
A-1. Cash Generated From Operation		-3,609	16,359	25,525	27,019	27,019	27,019	27,019	27,019	27,019	27,019
Operating Profit		-5,038	12,794	21,253	22,747	22,747	22,747	22,747	22,747	22,747	22,747
Depreciation & Amortization		1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
A-2. Financial Resources	5,752	57,424	4,491								
PICOP's Own Funds	5,752	26,562	4,491								
Long Term Loan	0	30,862	0								
B. Uses of Cash	5,752	57,424	4,491	9,436	7,626	6,221	5,817	5,411	5,005	4,603	4,204
B-1. Investment	5,752	50,539	3,963								
B-2. Inventory & Start-up Expenses		6,885	528								
B-3. Debt Service				9,436	7,626	6,221	5,817	5,411	5,005	4,603	4,204
Repayment of Long Term Loan				3,516	3,856	3,856	3,856	3,856	3,856	3,856	3,853
Interest on Long Term Loan				5,920	3,770	2,365	1,961	1,555	1,149	747	341
B-4. Income Tax Payment		0	0	0	0	0	0	0	0	0	0
C. Cash Increase or (Decrease)	0	-3,609	16,359	16,089	19,393	20,798	21,202	21,608	22,014	22,416	22,815
C-1. Beginning Cash Balance		0	-3,609	12,750	28,839	48,232	69,030	90,232	111,840	133,854	156,270
C-2. Ending Cash Balance	0	-3,609	12,750	28,839	48,232	69,030	90,232	111,840	133,854	156,270	179,085

Table VI-16-2 Cash Flow Statement on Renovation of Plan B
After Income Tax (Unit : 1,000 US\$)
Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Source of Cash	5,752	53,815	20,850	25,525	27,019	27,019	27,019	27,019	27,019	27,019	27,019
A-1. Cash Generated From Operation		-3,609	16,359	25,525	27,019	27,019	27,019	27,019	27,019	27,019	27,019
Operating Profit		-5,038	12,794	21,253	22,747	22,747	22,747	22,747	22,747	22,747	22,747
Depreciation & Amortization		1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
A-2. Financial Resources	5,752	57,424	4,491								
PICOP's Own Funds	5,752	26,562	4,491								
Long Term Loan	0	30,862	0								
B. Uses of Cash	5,752	57,424	7,206	14,803	14,268	13,355	13,092	12,828	12,564	12,303	12,046
B-1. Investment	5,752	50,539	3,963								
B-2. Inventory & Start-up Expenses		6,885	528								
B-3. Debt Service				9,436	7,626	6,221	5,817	5,411	5,005	4,603	4,204
Repayment of Long Term Loan				3,516	3,856	3,856	3,856	3,856	3,856	3,856	3,856
Interest on Long Term Loan				5,920	3,770	2,365	1,961	1,555	1,149	747	341
B-4. Income Tax Payment		0	2,715	5,367	6,642	7,134	7,275	7,417	7,559	7,700	7,842
C. Cash Increase or (Decrease)	0	-3,609	13,644	10,722	12,751	13,664	13,927	14,191	14,455	14,716	14,973
C-1. Beginning Cash Balance		0	-3,609	10,035	20,757	33,508	47,172	61,099	75,290	89,745	104,461
C-2. Ending Cash Balance	0	-3,609	10,035	20,757	33,508	47,172	61,099	75,290	89,745	104,461	119,434

Table VI-16-3 Cash Flow Statement on Renovation of Plan B (ALT)
 Before Income Tax
 (Unit : 1,000 US\$)
 Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Source of Cash	5,752	53,815	19,075	21,095	22,915	22,915	22,915	22,915	22,915	22,915	22,915
A-1. Cash Generated From Operation		-3,609	14,584	21,095	22,915	22,915	22,915	22,915	22,915	22,915	22,915
Operating Profit		-5,038	11,019	16,823	18,643	18,643	18,643	18,643	18,643	18,643	18,643
Depreciation & Amortization		1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
A-2. Financial Resources	5,752	57,424	4,491								
PICOP's Own Funds	5,752	26,562	4,491								
Long Term Loan	0	30,862	0								
B. Uses of Cash	5,752	57,424	4,491	9,436	7,626	6,221	5,817	5,411	5,005	4,603	4,204
B-1. Investment	5,752	50,539	3,963								
B-2. Inventory & Start-up Expenses		6,885	528								
B-3. Debt Service				9,436	7,626	6,221	5,817	5,411	5,005	4,603	4,204
Repayment of Long Term Loan				3,516	3,856	3,856	3,856	3,856	3,856	3,856	3,863
Interest on Long Term Loan				5,920	3,770	2,365	1,961	1,555	1,149	747	341
B-4. Income Tax Payment		0	0	0	0	0	0	0	0	0	0
C. Cash Increase or (Decrease)	0	-3,609	14,584	11,659	15,289	16,694	17,098	17,504	17,910	18,312	18,711
C-1. Beginning Cash Balance		0	-3,609	10,975	22,634	37,923	54,617	71,715	89,219	107,129	125,441
C-2. Ending Cash Balance	0	-3,609	10,975	22,634	37,923	54,617	71,715	89,219	107,129	125,441	144,152

Table VI-16-4 Cash Flow Statement on Renovation of Plan B (ALT)
After Income Tax
(Unit : 1,000 US\$)
Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Source of Cash	5,752	53,815	19,075	21,095	22,915	22,915	22,915	22,915	22,915	22,915	22,915
A-1. Cash Generated From Operation		-3,609	14,584	21,095	22,915	22,915	22,915	22,915	22,915	22,915	22,915
Operating Profit		-5,038	11,019	16,823	18,643	18,643	18,643	18,643	18,643	18,643	18,643
Depreciation & Amortization		1,429	3,565	4,272	4,272	4,272	4,272	4,272	4,272	4,272	4,272
A-2. Financial Resources	5,752	57,424	4,491								
PICOP's Own Funds	5,752	26,562	4,491								
Long Term Loan	0	30,862	0								
B. Uses of Cash	5,752	57,424	6,584	13,252	12,832	11,918	11,656	11,392	11,128	10,867	10,610
B-1. Investment	5,752	50,539	3,963								
B-2. Inventory & Start-up Expenses		6,885	528								
B-3. Debt Service				9,436	7,626	6,221	5,817	5,411	5,005	4,603	4,204
Repayment of Long Term Loan				3,516	3,856	3,856	3,856	3,856	3,856	3,856	3,863
Interest on Long Term Loan				5,920	3,770	2,365	1,961	1,555	1,149	747	341
B-4. Income Tax Payment		0	2,093	3,816	5,206	5,697	5,839	5,981	6,123	6,264	6,406
C. Cash Increase or (Decrease)	0	-3,609	12,491	7,843	10,083	10,997	11,259	11,523	11,787	12,048	12,305
C-1. Beginning Cash Balance		0	-3,609	8,882	16,725	26,808	37,805	49,064	60,587	72,374	84,422
C-2. Ending Cash Balance	0	-3,609	8,882	16,725	26,808	37,805	49,064	60,587	72,374	84,422	96,727

Table VI-17-1 Balance Sheet on Renovation of Plan A
 Before Income Tax (Unit: 1,000 US\$)
 Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Total Assets	4,105	36,620	45,847	49,955	58,132	66,603	75,368	84,427	93,780	103,427	113,362
A-1. Current Assets	0	-3,609	7,047	14,011	25,044	36,371	47,992	59,907	72,116	84,619	97,410
A-2. Inventory		2,133	2,133	2,133	2,133	2,133	2,133	2,133	2,133	2,133	2,133
A-3. Net Fixed Assets	4,105	38,096	36,667	33,811	30,955	28,099	25,243	22,387	19,531	16,675	13,819
B. Total Liability	4,105	36,620	45,847	49,955	58,132	66,603	75,368	84,427	93,780	103,427	113,362
B-1. Balance of Long Term Foreign Loan	0	22,406	22,406	19,606	16,806	14,006	11,206	8,406	5,606	2,806	0
B-2. Total Equity	4,105	14,214	23,441	30,349	41,326	52,597	64,162	76,021	88,174	100,621	113,362
PICOP'S Own Funds	4,105	22,575	22,575	22,575	22,575	22,575	22,575	22,575	22,575	22,575	22,575
Retained Earnings	0	-8,361	866	7,774	18,751	30,022	41,587	53,446	65,599	78,046	90,787
Return on Investment		-11.2	17.3	28.7	32.9	35.4	38.4	41.8	46	51.1	57.4

Table VI-17-2 Balance Sheet on Renovation of Plan A
After Income Tax (Unit : 1,000 US\$)
Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Total Assets	4,105	36,620	44,880	46,570	50,905	55,431	60,148	65,056	70,155	75,446	80,922
A-1. Current Assets	0	-3,609	6,080	10,626	17,817	25,199	32,772	40,536	48,491	56,638	64,970
A-2. Inventory		2,133	2,133	2,133	2,133	2,133	2,133	2,133	2,133	2,133	2,133
A-3. Net Fixed Assets	4,105	38,096	36,667	33,811	30,955	28,099	25,243	22,387	19,531	16,675	13,819
B. Total Liability	4,105	36,620	44,880	46,570	50,905	55,431	60,148	65,056	70,155	75,446	80,922
B-1. Balance of Long Term Foreign Loan	0	22,406	22,406	19,606	16,806	14,006	11,206	8,406	5,606	2,806	0
B-2. Total Equity	4,105	14,214	22,474	26,964	34,099	41,425	48,942	56,650	64,549	72,640	80,922
PICOP'S Own Funds	4,105	22,575	22,575	22,575	22,575	22,575	22,575	22,575	22,575	22,575	22,575
Retained Earnings	0	-8,361	-101	4,389	11,524	18,850	26,367	34,075	41,974	50,065	58,347
Return on Investment %/y		-11.2	15.2	23	23.2	24.6	26.4	28.4	30.9	33.9	37.7

Table VI-18-1 Balance Sheet on Renovation of Plan B
Before Income Tax
Original Financing Plan
(Unit : 1,000 US\$)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Total Assets	5,752	54,815	73,927	86,451	101,572	118,098	135,028	152,364	170,106	188,250	206,793
A-1. Current Assets	0	-3,609	12,750	28,839	48,232	69,030	90,232	111,840	133,854	156,270	179,085
A-2. Inventory		2,133	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
A-3. Net Fixed Assets	5,752	56,291	58,825	55,260	50,988	46,716	42,444	38,172	33,900	29,628	25,356
B. Total Liability	5,752	54,815	73,927	86,451	101,572	118,098	135,028	152,364	170,106	188,250	206,793
B-1. Balance of Long Term Foreign Loan	0	30,862	30,862	27,346	23,490	19,634	15,778	11,922	8,066	4,210	347
B-2. Total Equity	5,752	23,953	43,065	59,105	78,082	98,464	119,250	140,442	162,040	184,040	206,446
PICOP'S Own Funds	5,752	32,314	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805
Retained Earnings	0	-8,361	6,260	22,300	41,277	61,659	82,445	103,637	125,235	147,235	169,641
Return on Investment		-8	18.9	33.1	37.7	40.3	43.3	46.7	50.7	55.5	61.2

Table VI-18-2 Balance Sheet on Renovation of Plan B
After Income Tax (Unit : 1,000 US\$)
Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Total Assets	5,752	54,815	71,212	78,369	86,848	96,240	105,895	115,814	125,997	136,441	147,142
A-1. Current Assets	0	-3,609	10,035	20,757	33,508	47,172	61,099	75,290	89,745	104,461	119,434
A-2. Inventory		2,133	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
A-3. Net Fixed Assets	5,752	56,291	58,825	55,260	50,988	46,716	42,444	38,172	33,900	29,628	25,356
B. Total Liability	5,752	54,815	71,212	78,369	86,848	96,240	105,895	115,814	125,997	136,441	147,142
B-1. Balance of Long Term Foreign Loan	0	30,862	30,862	27,346	23,490	19,634	15,778	11,922	8,066	4,210	347
B-2. Total Equity	5,752	23,953	40,350	51,023	63,358	76,606	90,117	103,892	117,931	132,231	146,795
PICOP'S Own Funds	5,752	32,314	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805
Retained Earnings	0	-8,361	3,545	14,218	26,553	39,801	53,312	67,087	81,126	95,426	109,990
Return on Investment		-8	14.9	24.8	26.7	27.7	29.4	31.5	33.8	36.7	40.1

Table VI-18-3 Balance Sheet on Renovation of Plan B. (ALT)
 Before Income Tax
 (Unit : 1,000 US\$)
 Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Total Assets	5,752	54,815	72,152	80,246	91,263	103,685	116,511	129,743	143,381	157,421	171,860
A-1. Current Assets	0	-3,609	10,975	22,634	37,923	54,617	71,715	89,219	107,129	125,441	144,152
A-2. Inventory		2,133	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
A-3. Net Fixed Assets	5,752	56,291	58,825	55,260	50,968	46,716	42,444	38,172	33,900	29,628	25,356
B. Total Liability	5,752	54,815	72,152	80,246	91,263	103,685	116,511	129,743	143,381	157,421	171,860
B-1. Balance of Long Term Foreign Loan	0	30,862	30,862	27,346	23,490	19,634	15,778	11,922	8,066	4,210	347
B-2. Total Equity	5,752	23,953	41,290	52,900	67,773	84,051	100,733	117,821	135,315	153,211	171,513
PICOP'S Own Funds	5,752	32,314	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805
Retained Earnings	0	-8,361	4,485	16,095	30,968	47,246	63,928	81,016	98,510	116,406	134,708
Return on Investment		-8	16.3	26.2	30.9	33	35.5	38.3	41.5	45.5	50.2
			%/y								

Table VI-18-4 Balance Sheet on Renovation of Plan B (ALT)
 After Income Tax
 (Unit : 1,000 US\$)
 Original Financing Plan

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
A. Total Assets	5,752	54,815	70,059	74,337	80,148	86,873	93,860	101,111	108,626	116,402	124,435
A-1. Current Assets	0	-3,609	8,882	16,725	26,808	37,805	49,064	60,587	72,374	84,422	96,727
A-2. Inventory		2,133	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
A-3. Net Fixed Assets	5,752	56,291	58,825	55,260	50,988	46,716	42,444	38,172	33,900	29,628	25,356
B. Total Liability	5,752	54,815	70,059	74,337	80,148	86,873	93,860	101,111	108,626	116,402	124,435
B-1. Balance of Long Term Foreign Loan	0	30,862	30,862	27,346	23,490	19,634	15,778	11,922	8,066	4,210	347
B-2. Total Equity	5,752	23,953	39,197	46,991	56,658	67,239	78,082	89,189	100,560	112,192	124,088
PICOP'S Own Funds	5,752	32,314	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805	36,805
Retained Earnings	0	-8,361	2,392	10,186	19,853	30,434	41,277	52,384	63,755	75,387	87,283
Return on Investment		-8	13.2	20.3	22.3	22.9	24.4	26	27.9	30.2	32.9
								%/y			

Table VI-19-1 IRR Calculation on Renovation of Plan A
 Before Income Tax (Unit : 1,000 US\$)
 Original Financing Plan

Year	Total		Profit Before Income Tax	Less Income Tax	Profit Before Income Tax	Depreciatn And Amortizatr	Interest on Debt	Total Return	Discount		Discounted Cash In-flow
	Investment	4,105							Discount Factor	Out-flow	
1987		4,105								4,105	0
1988		40,876	-5,038		-5,038	1,429	-3,609		0.78909882	32,255	-2,847
1989			7,800		7,800	2,856	10,656		0.62267695		6,635
1990			6,908		6,908	2,856	5,219		0.49135365		7,361
1991			10,977		10,977	2,856	1,985		0.38772658		6,133
1992			11,271		11,271	2,856	1,691		0.30585459		4,839
1993			11,565		11,565	2,856	1,397		0.24142841		3,818
1994			11,859		11,859	2,856	1,103		0.19051087		3,013
1995			12,153		12,153	2,856	809		0.15033190		2,377
1996			12,447		12,447	2,856	515		0.11862673		1,876
1997		-17,848	12,741		12,741	2,856	221		0.09360821	-1,670	1,480
Total			92,683		92,683	27,133	12,940	132,756		34,689	34,689
Internal Rate of Return (IRR) %/y		26.7									
Return on Investment (ROI) %/y		30.3									

Table VI-19-2 IRR Calculation on Renovation of Plan A
 After Income Tax (Unit : 1,000 US\$)
 Original Financing Plan

Year	Total Investment	Profit Before Income Tax	Less Income Tax	Profit After Income Tax	Depreciatn And Amortizatin	Interest on Debt	Total Return	Discount Factor	Discounted Out-flow	Discounted Cash In-flow
1987	4,105								4,105	0
1988	40,876	-5,038	0	-5,038	1,429		-3,609	0.83242065	34,026	-3,004
1989		7,809	967	6,833	2,856		9,689	0.69292414		6,713
1990		6,908	2,418	4,490	2,856	5,219	12,565	0.57680437		7,247
1991		10,977	3,842	7,135	2,856	1,985	11,976	0.48014387		5,750
1992		11,271	3,945	7,326	2,856	1,691	11,873	0.39968167		4,745
1993		11,565	4,048	7,517	2,856	1,397	11,770	0.33270328		3,915
1994		11,859	4,151	7,708	2,856	1,103	11,667	0.27694988		3,231
1995		12,153	4,254	7,899	2,856	809	11,564	0.23053814		2,665
1996		12,447	4,356	8,091	2,856	515	11,462	0.19190471		2,199
1997	-17,848	12,741	4,459	8,282	2,856	221	11,359	0.15974544	-2,851	1,814
Total		92,683	32,440	60,243	27,133	12,940	100,316		35,279	35,279
Internal Rate of Return (IRR) %/y	20.1									
Return on Investment (ROI) %/y	21									

Table VI-20-1 IRR Calculation on Renovation of Plan B.
Before Income Tax (Unit : 1,000 US\$)
Original Financing Plan

Year	Total		Profit Before Income Tax	Less Income Tax	Profit Before Income Tax	Depreciatn And Amortizatrn	Interest on Debt	Total Return	Discount Factor	Discounted Out-flow	Discounted Cash In-flow
	Investment	Profit Before Income Tax									
1987	5,752									5,752	0
1988	57,424	-5,038	-5,038		1,429		-3,609	0.76067308	43,680	-2,745	
1989	4,491	12,794	12,794		3,565		16,359	0.57802353	2,598	9,465	
1990		15,333	15,333		4,272	5,920	25,525	0.44014333		11,234	
1991		18,977	18,977		4,272	3,770	27,019	0.33480519		9,046	
1992		20,382	20,382		4,272	2,365	27,019	0.25467739		6,881	
1993		20,786	20,786		4,272	1,961	27,019	0.19372617		5,234	
1994		21,192	21,192		4,272	1,555	27,019	0.14736228		3,981	
1995		21,598	21,598		4,272	1,149	27,019	0.11209452		3,028	
1996		22,000	22,000		4,272	747	27,019	0.08526728		2,303	
1997	-28,497	22,406	22,406		4,272	341	27,019	0.06486053	-1,848	1,752	
Total		170,430	170,430		39,170	17,808	227,408		50,183	50,183	
Internal Rate Return (IRR) %/yr											
Return on Investment %/yr											
		31.5									
		34.8									

Table VI-20-2 IRR Calculation on Renovation of Plan B
 After Income Tax (Unit : 1,000 US\$)
 Original Financing Plan

Year	Total		Profit Before Income Tax	Less Income Tax	Profit After Income Tax	Depreciatn And Amortizatr n on Debt	Interest on Debt	Total Return	Discount		Discounted Cash	
	Investment	Income Tax							Factor	Out-flow	In-flow	
1987	5,752										5,752	0
1988	57,424	-5,038			-5,038	1,429		-3,609	0.81134119	0.81134119	46,590	-2,928
1989	4,491	12,794		2,715	10,079	3,565		13,644	0.65827452	0.65827452	2,956	8,981
1990		15,333		5,367	9,966	4,272	5,920	20,158	0.53408523	0.53408523		10,766
1991		18,977		6,642	12,335	4,272	3,770	20,377	0.48332535	0.48332535		8,829
1992		20,382		7,134	13,248	4,272	2,365	19,885	0.35157470	0.35157470		6,991
1993		20,786		7,275	13,511	4,272	1,961	19,744	0.28524703	0.28524703		5,631
1994		21,192		7,417	13,775	4,272	1,555	19,602	0.23143267	0.23143267		4,536
1995		21,598		7,559	14,039	4,272	1,149	19,460	0.18777085	0.18777085		3,654
1996		22,000		7,700	14,300	4,272	747	19,319	0.15234623	0.15234623		2,943
1997	-28,497	22,406		7,842	14,564	4,272	341	19,177	0.12360477	0.12360477	-3,522	2,379
Total		170,430		59,651	110,779	39,170	17,808	167,757			51,776	51,776
Internal Rate of Return (IRR) %/yr		23.3										
Return on Investment (ROI) %/yr		23.8										

Table VI-20-3 IRR Calculation on Renovation of Plan B (ALT)
 Before Income Tax (Unit : 1,000 US\$)
 Original Financing Plan

Year	Total		Profit Before Income Tax	Less Income Tax	Profit Before Income Tax	Depreciation and Amortization	Interest on Debt	Total Return	Discount		Discounted Cash	
	Investment	Income Tax							Factor	Out-flow	In-flow	
1987	5,752										5,752	0
1988	57,424	-5,038	-5,038		1,429		-3,609	0.79078176	45,409	-2,853		
1989	4,491	11,019	11,019		3,565		14,584	0.62333580	2,808	9,119		
1990		10,903	10,903		4,272	5,920	21,095	0.49450414		10,431		
1991		14,873	14,873		4,272	3,770	22,915	0.39104486		8,960		
1992		16,278	16,278		4,272	2,365	22,915	0.30923114		7,086		
1993		16,682	16,682		4,272	1,961	22,915	0.24453436		5,603		
1994		17,088	17,088		4,272	1,555	22,915	0.19337330		4,431		
1995		17,494	17,494		4,272	1,149	22,915	0.15291608		3,504		
1996		17,896	17,896		4,272	747	22,915	0.12092325		2,770		
1997	-28,497	18,302	18,302		4,272	341	22,915	0.09562390	-2,724	2,191		
Total		135,497	135,497		39,170	17,808	192,475		51,245	51,245		
Internal Rate of Return (IRR) %/yr	26.5											
Return on Investment (ROI) %/yr	28.4											

Table VI-20-4 IRR Calculation on Renovation of Plan B (ALI)
 After Income Tax (Unit : 1,000 US\$)
 Original Financing Plan

Year	Total Investment	Profit Before Income Tax	Less Income Tax	Profit After Income Tax	Depreciatn And Amortizatn on Debt	Interest on Debt	Total Return	Discount Factor	Discounted Cash	
									Out-flow	In-flow
1987	5,752								5,752	0
1988	57,424	-5,038	0	-5,038	1,429		-3,609	0.83572672	47,990	-3,016
1989	4,491	11,019	2,093	8,926	3,565		12,491	0.69843914	3,136	8,724
1990		10,903	3,816	7,087	4,272	5,920	17,279	0.58370425		10,085
1991		14,873	5,206	9,667	4,272	3,770	17,709	0.48781724		8,638
1992		16,278	5,697	10,581	4,272	2,365	17,218	0.40768190		7,019
1993		16,682	5,839	10,843	4,272	1,961	17,076	0.34071065		5,817
1994		17,088	5,981	11,107	4,272	1,555	16,934	0.28474099		4,821
1995		17,494	6,123	11,371	4,272	1,149	16,792	0.23796566		3,995
1996		17,896	6,264	11,632	4,272	747	16,651	0.19887426		3,311
1997	-28,497	18,302	6,406	11,896	4,272	341	16,509	0.16620453	-4,736	2,743
Total		135,497	47,425	88,072	39,170	17,808	145,050		52,143	52,143
Internal Rate of Return (IRR) %/yr	19.7									
Return on Investment (ROI) %/yr	19.6									

Table VI-25 Projected Income Statement Without Renovation
 PICOP's Estimation (1988 ~ 1997)
 (Unit : 1,000 US\$)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
NET SALES										
Timber Products	135,152	128,112	127,561	122,085	124,276	124,837	124,837	124,837	124,837	124,837
Newsprint	22,111	18,333	18,333	16,943	19,784	21,751	21,751	21,751	21,751	21,751
Linerboard	61,430	59,491	58,940	56,442	55,792	54,916	54,916	54,916	54,916	54,916
Corrugating Medium	29,261	28,511	28,511	27,611	27,611	27,310	27,310	27,310	27,310	27,310
	22,350	21,777	21,777	21,089	21,089	20,860	20,860	20,860	20,860	20,860
COST OF SALES										
Timber Products	80,780	76,788	77,677	76,432	78,385	79,772	79,772	79,772	79,772	79,772
Newsprint	17,008	14,037	14,037	12,931	15,000	16,432	16,432	16,432	16,432	16,432
Linerboard	38,130	37,071	37,951	37,812	37,696	37,651	37,651	37,651	37,651	37,651
Corrugating Medium	15,365	15,378	15,384	15,384	15,384	15,384	15,384	15,384	15,384	15,384
	10,277	10,302	10,305	10,305	10,305	10,305	10,305	10,305	10,305	10,305
GROSS PROFIT										
Timber Products	54,372	51,324	49,884	45,653	45,891	45,065	45,065	45,065	45,065	45,065
Newsprint	5,103	4,296	4,296	4,012	4,784	5,319	5,319	5,319	5,319	5,319
Linerboard	23,300	22,420	20,989	18,630	18,096	17,265	17,265	17,265	17,265	17,265
Corrugating Medium	13,896	13,133	13,127	12,227	12,227	11,926	11,926	11,926	11,926	11,926
	12,073	11,475	11,472	10,784	10,784	10,555	10,555	10,555	10,555	10,555
GENERAL & ADMINISTRATION EXPENSES	7,483	7,676	7,902	7,777	7,844	7,827	7,827	7,827	7,827	7,827
DEPRECIATION ON APPREISAL INCREASE	2,713	2,713	194	0	0	0	0	0	0	0
OPERATING INCOME	44,176	40,935	41,788	37,876	38,047	37,238	37,238	37,238	37,238	37,238
FINANCIAL EXPENSES	15,946	10,305	7,671	5,702	4,826	4,272	4,272	4,272	4,272	4,272
NET INCOME BEFORE INCOME TAX	28,230	30,630	34,117	32,174	33,221	32,966	32,966	32,966	32,966	32,966
INCOME TAX	9,881	10,721	11,941	11,267	11,628	11,538	11,538	11,538	11,538	11,538
NET INCOME AFTERE INCOME TAX	18,349	19,909	22,176	20,907	21,593	21,428	21,428	21,428	21,428	21,428
CUMULATIVE PROFIT (DEFICIT)										
AT BEGINNING	13,274	31,623	51,532	73,708	94,615	116,208	137,636	159,064	180,492	201,920
AT ENDING	31,623	51,532	73,708	94,615	116,208	137,636	159,064	180,492	201,920	223,348

Table VI-26 Projected Income Statement on Renovation of Plan A
 Team's Estimation
 (1988 ~ 1997)
 (Unit : 1,000 US\$)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
NET SALES										
Timber Products	119,087	149,671	160,107	160,856	163,697	165,664	165,664	165,664	165,664	165,664
Newsprint	22,111	18,338	18,333	16,943	19,784	21,751	21,751	21,751	21,751	21,751
Linerboard	52,386	73,013	73,856	81,995	81,995	81,995	81,995	81,995	81,995	81,995
Corrugating Medium	26,065	35,930	38,175	38,175	38,175	38,175	38,175	38,175	38,175	38,175
	18,575	22,395	23,743	23,743	23,743	23,743	23,743	23,743	23,743	23,743
COST OF SALES										
Timber Products	79,990	97,552	104,835	104,782	106,710	108,062	108,062	108,062	108,062	108,062
Paper & Paperboard Products	17,008	14,037	14,037	12,931	15,000	16,432	16,432	16,432	16,432	16,432
Cost without Renovation	62,982	83,515	90,798	91,851	91,710	91,630	91,630	91,630	91,630	91,630
Incremental Cost	71,283	70,292	71,466	71,215	71,074	70,994	70,994	70,994	70,994	70,994
	-8,301	13,223	19,332	20,636	20,636	20,636	20,636	20,636	20,636	20,636
GROSS PROFIT	39,097	52,119	55,272	56,074	56,987	57,602	57,602	57,602	57,602	57,602
DEPRECIATION ON APPREISAL INCREASE	2,713	2,713	194	0	0	0	0	0	0	0
OPERATING INCOME	36,384	49,406	55,078	56,074	56,987	57,602	57,602	57,602	57,602	57,602
FINANCIAL EXPENSES										
Existing Expenses	15,946	10,305	12,890	7,687	6,517	5,669	5,875	5,881	4,787	4,493
Incremental Expenses	15,946	10,305	7,671	5,702	4,826	4,272	4,272	4,272	4,272	4,272
			5,219	1,985	1,691	1,397	1,103	809	515	221
NET INCOME BEFORE INCOME TAX	20,438	39,101	42,188	48,387	50,470	51,933	52,227	52,521	52,815	53,109
INCOME TAX	7,153	13,685	14,766	16,935	17,665	18,177	18,279	18,382	18,485	18,588
NET INCOME AFTERE INCOME TAX	13,285	25,416	27,422	31,452	32,805	33,756	33,948	34,139	34,330	34,521
CUMULATIVE PROFIT (DEFICIT)										
AT BEGINNING	13,274	26,559	51,975	79,397	110,849	143,654	177,410	211,558	245,497	279,827
AT ENDING	26,559	51,975	79,397	110,849	143,654	177,410	211,558	245,497	279,827	314,348

APPENDIX

Appendix A-1

PULP QUALITY TEST DATA

Tested by Oji's Central Research Laboratory

Sample No.

- | | | | |
|-----|-----------------------|-------------------------------------|-----------------|
| 1. | TMP | (Outlet of 1ry Ref.) | |
| 2. | RGP | (Outlet of 1ry Ref. in RGP II line) | |
| 3. | RGP | (Outlet of 1ry Ref. in RGP I line) | |
| 4. | TMP + RGP | (Outlet of 2ry Ref. in RGP II line) | |
| 5. | TMP + RGP | (Outlet of 2ry Ref. in RGP I line) | |
| 6. | TMP + RGP | (Outlet of thickener) | |
| 7. | TMP + RGP | (Outlet of bleaching tower) | |
| 8. | EBK (UKP) | (Outlet of No. 4 wash filter) | |
| 9. | EBK (UKP) | (Outlet of deshive refiner) | |
| 10. | Typical data in Japan | TMP (Outlet of thickener) | } for reference |
| 11. | Typical data in Japan | RGP (Outlet of thickener) | |

Sampling position of PICOP's RGP/TMP plant is referred to Fig. III-2-2.

Item	Sample No.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Basis weight (B.D)	g/m ²	59.6	60.8	59.1	62.6	59.7	59.7	60.7	60.2	60.9	61.8	58.5
Density (A.D)	g/cm ³	0.27	0.29	0.24	0.34	0.33	0.33	0.34	0.68	0.69	0.39	0.36
									(0.85)	(0.85)		
Breaking length	km	0.53	1.14	0.73	1.48	1.55	1.44	1.67	5.32	5.36	3.71	2.38
									(6.80)	(6.76)		
Tear factor		9.8	21.1	22.2	20.2	22.5	21.6	22.9	109.7	107.6	95.3	45.7
									(92.2)	(89.2)		
Brightness	%	40.2	41.8	38.7	41.1	43.7	42.7	62.5	30.3	30.4	47.4	46.5
									(24.8)	(24.6)		
Opacity	%	98.7	99.4	98.9	99.4	99.6	99.4	96.5	97.7	98.3	97.7	97.4
									(91.1)	(92.0)		
Scattering coefficient (Green filter)	cm ² /g	578.0	717.9	596.7	669.8	849.6	721.7	800.6	377.8	405.9	631.3	627.1
Absorbing coefficient (Green filter)	cm ² /g	126.4	136.8	140.4	146.6	142.0	145.9	37.44	222.3	222.7	79.45	81.74
Scattering coefficient (Blue filter)	cm ² /g	222.9	225.6	259.0	227.5	220.9	223.9	93.91	160.8	171.9	174.6	196.5
Absorbing coefficient (Blue filter)	cm ² /g								(136.2)	(140.9)		
									295.4	298.7		
									(264.4)	(239.5)		
Freeness (CSF)	ml	406	335	525	200	225	234	223	470	470	79	123
									(283)	(266)		
Fractionation	%	2.2	7.5	22.2	2.1	4.1	2.4	3.1	4.0	1.6	30.6	14.0
24 mesh on		7.8	23.0	22.1	11.6	15.5	12.6	16.5	45.7	42.0	17.8	23.7
42 mesh on		30.6	27.6	21.4	29.5	31.8	27.2	29.1	31.3	37.7	14.9	22.8
80 mesh on		15.0	10.3	6.6	17.8	16.6	15.9	15.3	4.1	5.6	5.5	9.7
150 mesh on		44.4	31.6	27.7	39.0	32.0	41.9	36.0	14.9	13.1	31.2	29.8
150 mesh pass												

* () : Beated by PFI mill

Appendix A-2

SHEET QUALITY TEST DATA

Tested by Oji's Central Research Laboratory

Item	Sample		STD	GMP	RGNP	TDY
Basis weight	g/m ²		50.0	53.8	49.7	34.9
Thickness	mm		0.088	0.133	0.084	0.067
Density	g/cm ³		0.57	0.40	0.59	0.52
Moisture	%		8.8	9.1	8.6	8.5
Ash	%		0.8	1.2	0.8	0.7
Brightness (HU)	% Top		42.6	34.2	57.5	40.3
		Bot.	43.7	36.4	57.5	35.5
Opacity	%		94.8	98.6	90.8	72.9
Tensile strength	kg MD		4.28	4.19	4.06	2.89
		CD	1.75	1.96	1.65	1.29
Elongation	% MD		1.7	1.5	1.5	1.5
		CD	3.0	2.3	2.4	1.8
Tearing strength	g MD		25	30	20	23
		CD	28	31	24	30
Smoothness	sec Top		29	6	37	31
		Bot.	26	6	29	25
Air permeability	sec/100 ml		62	27	47	23
Clark stiffness	cm ³ /100 MD		70	130	62	32
		CD	21	46	22	13
Stöckigt sizing degree	sec		—	—	below 1	below 1
Oil absorptiveness	sec		63	20	62	76
Dust	mm ² /m ² Top		22	32	62	50
		Bot.	38	30	18	42
Dust count	piece/m ² Top		140	100	180	120
		Bot.	180	140	40	160

Sample: STD (Standard newsprint) RGP/TMP 55%, KP 45%
 GMP (Groundwood mimeo paper) RGP/TMP 55%, KP 45%
 RGNP (Roto gravure newsprint) RGP/TMP 55%, KP 45%
 TDY (Telephone directry yellow) RGP/TMP 50%, KP 25%, NBKP 25%
 MD Machine direction
 CD Cross direction

Appendix A-3

PROFITABILITY CALCULATION

Profitability calculation between mixing softwood pulp and present pulp combination

1. Precondition

a. Pulp combination

Assuming; mixing of 7% softwood pulp improves paper machine efficiency up to 85%

	Present	Mixing softwood
RGP/TMP	55%	55%
LSBKP*1	45%	38%
NBKP*2	—	7%

*1: Semi-bleached hardwood kraft pulp

*2: Bleached softwood kraft pulp

b. Paper machine condition

	Present	Mixing softwood
PM efficiency	78%	85%
Machine speed	690 m/min.	690 m/min.
Operation days	324 days	324 days
Av. daily production	231 t/d	$231 \times 85/78 = 252$ t/d
Steam consumption		
Middle pressure	0.75 t/t	$0.75 \times 78/85 = 0.69$ t/t
Low pressure	2.1 t/t	$2.1 \times 78/85 = 1.93$ t/t
Power consumption	715 kWh/t	$715 \times 78/85 = 656$ kWh/t

2. Variable cost

a. Furnish cost

	Pulp cost ^{*1}	Present	Mixing softwood
RGP/TMP	232 US\$/BDt	(55%) 127.6 US\$/BDt	(55%) 127.6 US\$/BDt
LSBKP ^{*1}	251 US\$/BDt	(45%) 113 US\$/BDt	(38%) 95.4 US\$/BDt
NBKP ^{*2}	680 US\$/BDt	—	(7%) 47.6 US\$/BDt
Furnish cost per BD pulp		240.6 US\$/BDt	270.6 US\$/BDt
Equivalent paper cost x 0.97 ^{*2}		233.4 US\$/BDt	262.5 US\$/BDt

*1: Pulp cost is referred to Appendix A-4.

*2: (a) Moisture 7%

(b) Total loss of No. 1 paper machine

Fiber loss	2.5%
Reject of screen	1.0%
Over weight	0.6%
Over rewinding	0.3%
<hr/>	
Total	4.4%

Equivalent coefficient from 1 ton of paper to 1 ton of pulp

$$(1 - 0.07) / (1 - 0.044) = 0.97$$

b. Steam and power cost

	Unit cost	Present	Mixing softwood
Steam cost M.P.	18.6 US\$/t	14.0 US\$/t	12.8 US\$/t
L.P.	17.2 US\$/t	36.1 US\$/t	33.2 US\$/t
Total		50.1 US\$/t	46.0 US\$/t
Power cost	0.0413 US\$/kWh	29.5 US\$/t	27.1 US\$/t

c. Total of variable cost

	Present	Mixing softwood
Pulp cost	233.4 US\$/t	262.5 US\$/t
Steam cost	50.1 US\$/t	46.0 US\$/t
Power cost	29.5 US\$/t	27.1 US\$/t
Total	313.0 US\$/t	335.6 US\$/t

3. Profitability calculation

a. Price of newsprint 756 US\$/t (July, 1984)

b. Annual profit

Present:

$$(756 - 313) \times 231 \text{ t/d} \times 324 \text{ d/y} - B^{*1} = 33,156 \times 10^3 - B \text{ (US$/y)}$$

Mixing softwood:

$$(756 - 335.6) \times 252 \text{ t/d} \times 324 \text{ d/y} - B = 34,325 \times 10^3 - B \text{ (US$/y)}$$

*1: B; Sales expenses, fixed cost, etc.

c. Difference between present and mixing softwood

$$\begin{array}{r} 34,325 \times 10^3 - B \text{ US$/y} \\ -) 33,156 \times 10^3 - B \text{ US$/y} \\ \hline 1,169 \times 10^3 \text{ US$/y} \end{array}$$

4. Result

Assuming that paper machine efficiency improves up to 85% to mixing 7% softwood pulp using existing equipment, annual profit of mixing softwood increases in $1,169 \times 10^3$ US\$ than present.

Appendix A-4

PULP UNIT CONSUMPTION AND PULP COST

Pulp unit cost

	Unit	RGP	CTMP	LSBKP		NBKP
				Present	Af. Renovation	
Wood	m ³ /BDt	4.10	4.28	7.60	7.61	—
Steam						
Mid. pressure	t/BDt			1.79	1.72	
Low pressure	t/BDt		0.10	0.51	0.49	
L.P. (bleaching)	t/BDt	0.35	0.35	0.35	0.35	
L.P. total	t/BDt	0.35	0.45	0.86	0.84	
Power	kWh/BDt	2,718	2,500	206	198	200
For bleaching	kWh/BDt			63	63	
Total	kWh/BDt	2,718	2,500	269	261	
Chemicals						
Saltcake	kg/BDt			44.4	42.8	
Limestone	kg/BDt			26.7	25.7	
Cl ₂	kg/BDt			55	40	
NaOH	kg/BDt	17	17	35	28	
NaOCl	kg/BDt			23	16	
H ₂ O ₂	kg/BDt	7.5	7.5			
Na ₂ SiO ₃	kg/BDt	17	17			
Na ₂ SO ₃	kg/BDt		30			
Water	m ³ /BDt	88.1	88.1	35.7	34.3	32.2
For bleaching	m ³ /BDt			80.6	80.6	
Total	m ³ /BDt	88.1	88.1	116.3	114.9	

Pulp cost

(Unit: US\$/BDt)

	Unit cost	RGP	CTMP	LSBKP		NBKP
				Present	Af. Renovation	
Wood Purchased pulp	19.5 US\$/m ³	79.95	83.46	148.2	148.40	670
Steam cost						
M.P.	18.6 US\$/t			33.3	31.9	
L.P.	17.2 US\$/t	6.02	7.73	14.8	14.42	
Total		6.02	7.73	48.1	46.32	
Power cost	0.0413 US\$/kWh	112.19	103.19	11.11	10.78	8.26
Chemicals						
Saltcake	0.156 US\$/kg			6.93	6.67	
Limestone	0.0009 US\$/kg			0.024	0.02	
Cl ₂	0.263 US\$/kg			14.47	10.52	
NaOH	0.164 US\$/kg	2.79	2.79	5.74	4.59	
NaOCl	0.431 US\$/kg			9.91	6.89	
H ₂ O ₂	2.09 US\$/kg	15.70	15.70			
Na ₂ SiO ₃	0.214 US\$/kg	3.64	3.64			
Na ₂ SO ₃	0.238 US\$/kg		7.14			
Total		22.13	29.27	37.07	28.69	
Water cost	0.054 US\$/m ³	4.77	4.77	6.28	6.22	1.74
Refiner plate cost		6.8	6.8			
Total	US\$/BDt	231.86	235.22	250.76	240.41	680

Appendix A-5

STANDARD OF LINERBOARD (JIS P 3902)

1. Class

	Basis weight (g/m ²)
A Class	180, 200, 220, 280, 320
B Class	220, 300, 340
C Class	200, 220

2. Quality

Class	Basis Weight g/m ²	Basis Weight Allowance %	Burst Index	Burst Strength kg/cm ²	Ring Crush Index (CD)	Ring Crush (CD) kg	Moisture % (*1)
A	180 200 220	±5	> 3.3	> 6.0 > 6.6 > 7.3	> 12	> 21.6 > 24.0 > 26.4	7.5 ± 1.5
	280 320		> 3.1	> 8.8 > 10.0	> 13	> 36.4 > 41.6	
B	220 300 340		> 2.9	> 6.4 > 8.7 > 10.0	> 11	> 24.2 > 33.0 > 37.4	
	C		200 220	> 2.1	> 4.2 > 4.6	> 10	

(*1) : On Reel

Appendix A-6

STANDARD OF CORRUGATING MEDIUM (JIS P 3904)

1. Class

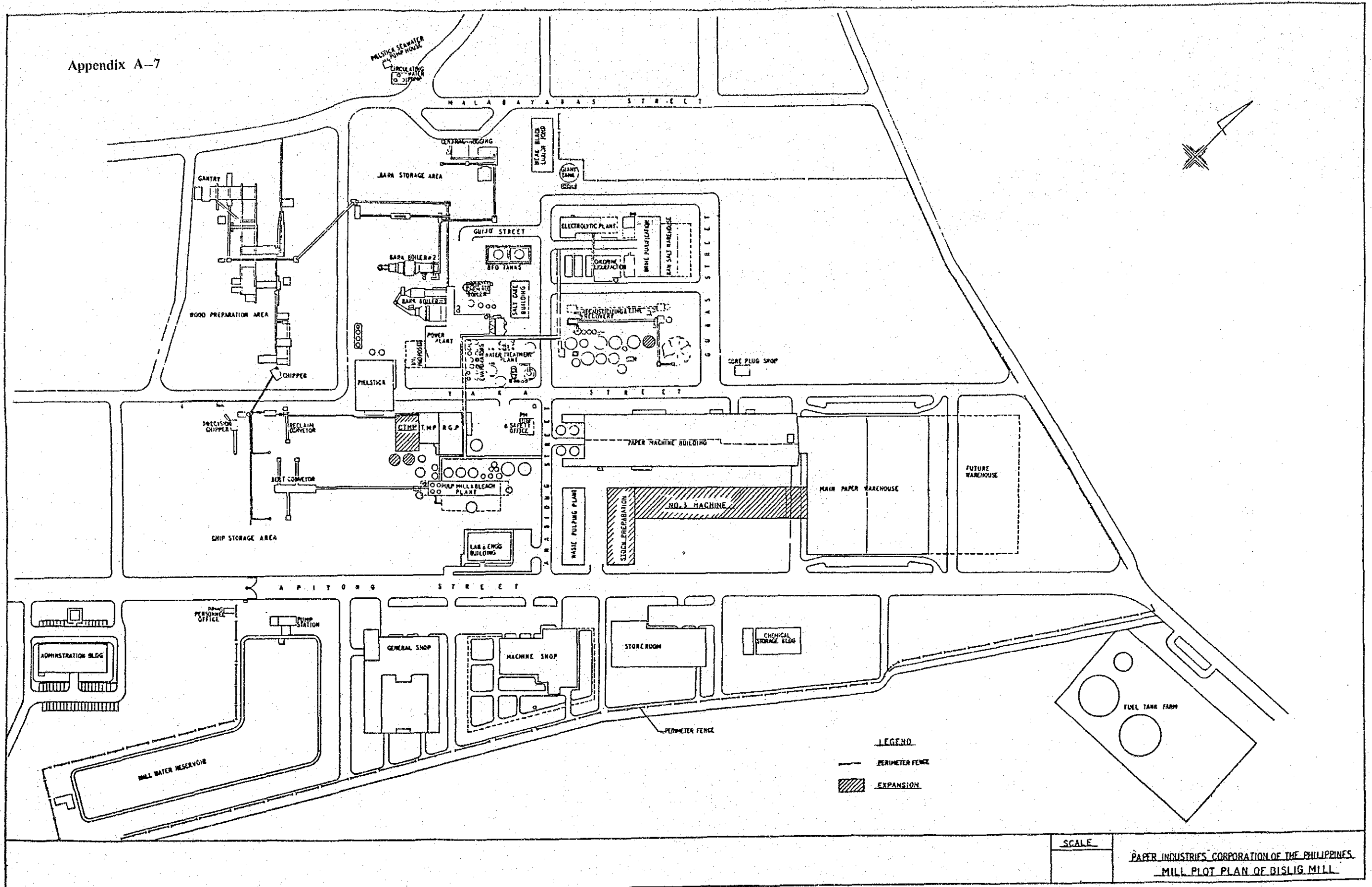
A, B, C

2. Quality

Class	Basis Weight g/m ²	Basis Weight Allowance %	Thickness mm	Breaking Length km	Ring Crush (CD) kgf	Ring Crush Index (CD)	Moisture % (*1)
A	125	±5	0.21-0.26	> 4.0	> 13.8	> 11	8.5 ± 1.5
B				> 3.5	> 11.3	> 9	
C				> 3.0	> 8.8	> 7	

(*1): On Reel

Appendix A-7



SCALE

PAPER INDUSTRIES CORPORATION OF THE PHILIPPINES
MILL PLOT PLAN OF BISLIG MILL

Appendix B-1 Log Production from Natural Forest

V: 1,000 m³

Figure in () = $\frac{1983 + 1984}{2}$

	1980			1981			1982			1983			1984			Sub-total			1985			1986			1987			1988			1989			1990					
	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V			
Selective Logging Virgin Forest																																							
Sawtimber, etc.																																							
Pulpwood (red only)																																							
Fuel wood																																							
Sub-total	4,501	143	643	3,170	167	528	2,070	184	340	2,439	173	421	2,500	129	324	14,680	154	2,256	2,275	101	229	1,750	103	181	2,036	117	238	1,210	87	105	-	-	-	-	-	-			
Selective Logging Second Growth Forest																																							
Sawtimber, etc.																																							
Pulpwood (red only)																																							
Fuel wood																																							
Sub-total																																							
Timber Stand Improvement																																							
Sawtimber, etc.																																							
Pulpwood (red only)																																							
Fuel wood																																							
Sub-total																																							
Clearcut																																							
Sawtimber, etc.																																							
Pulpwood (red only)																																							
Fuel wood																																							
Sub-total	2,612	170	444	2,336	176	411	2,821	170	478	2,912	183	532	3,000	179	538	3,681	176	2,403	3,200	186	595	3,200	207	662	3,187	210	671	-	-	-	-	-	-	-	-	-			
Total																																							
Sawtimber, etc.		96	686		91	500		89	436		84	447		64	351		85	2,420		47	305		47	278		50	310		38	171		34	113		34	113			
Pulpwood (red only)		53	373		64	354		63	308		61	328		65	356		61	1,719		50	323		46	275		48	297		24	107		22	75		22	75			
Fuel wood		4	28		15	85		15	74		37	197		28	157		19	541		38	246		57	340		56	352		18	84		21	69		21	69			
Total	7,113	153	1,087	5,506	171	939	4,891	167	818	5,351	182	972	5,500	157	864	28,361	165	4,680	6,475	135	874	5,950	150	893	6,223	154	959	4,541	80	362	3,331	77	257	3,331	77	257	3,331		

V: 1,000 m³

Figure in () = $\frac{1983 + 1984}{2}$

Age (ha)	1983		1984		Sub-total		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		Sub-total													
	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha	HA	(Age) m ³ /ha										
		97	237		69	173		(83)		53	122		57	100		64	130		48	58		-		-		-		-		-		-		57	410					
		65	158		49	124		(57)		32	71		33	58		39	79		27	32		-		-		-		-		-		-		33	240					
		11	26		11	27		(11)		16	36		13	23		14	29		12	15		-		-		-		-		-		-		14	103					
82	340	2,439	173	421	2,500	129	324	14,680	154	2,256	2,275	101	229	1,750	103	181	2,036	117	238	1,210	87	105	-	-	-	-	-	-	-	-	-	-	-	-	7,271	104	753			
																			48	113		48	113		48	113		48	113		48	113		48	113	48	791			
																			24	55		24	55		24	55		24	55		24	55		24	55	24	385			
																			17	39		17	39		17	39		17	39		17	39		17	39	17	273			
																			2,331	89	207	2,331	89	207	2,331	89	207	2,331	89	207	2,331	89	207	2,331	89	207	16,317	89	1,449	
			8								8		20	20		20	20		20	20		20	20		20	20		20	20		20	20		20	20	20	200			
			11								13		30	30		30	30		30	30		30	30		30	30		30	30		30	30		30	30	30	300			
			19								21		50	50	1,000	50	50	1,000	50	50	1,000	50	50	1,000	50	50	1,000	50	50	1,000	50	50	1,000	50	50	10,000	50	500		
			72	210		59	178		(66)		57	183		56	178		56	180		-		-		-		-		-		-		-		-		56	541			
			56	162		77	232		(67)		73	232		61	197		62	198		-		-		-		-		-		-		-		-		66	627			
			55	160		43	128		(49)		56	180		90	287		92	293		-		-		-		-		-		-		-		-		79	760			
170	478	2,912	183	532	3,000	179	538	13,681	176	2,403	3,200	186	595	3,200	207	662	3,187	210	671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9,587	201	1,928		
89	436		84	447		64	351		85	2,420		47	305		47	278		50	310		38	171		34	113		34	113		34	113		34	113		34	113	40	1,742	
63	308		61	328		65	356		61	1,719		50	323		46	275		48	297		24	107		22	75		22	75		22	75		22	75		22	75	34	1,452	
15	74		37	197		28	157		19	541		38	246		57	340		56	352		18	84		21	69		21	69		21	69		21	69		21	69	33	1,436	
167	818	5,351	182	972	5,500	157	864	28,361	165	4,680	6,475	135	874	5,950	150	893	6,223	154	959	4,541	80	362	3,331	77	257	3,331	77	257	3,331	77	257	3,331	77	257	3,331	77	257	43,175	107	4,630

Appendix B-2 Planting & Harvesting Plan of I.T.P. for White Chips (Falcata)

V: 1000 m³, T: Thinning

Year	Planted		Harvested up to 1983	Balance	1980		1981		1982		1983		1984		Sub-total		1985		1986		1987		1988		1989		1990														
	HA	HA			HA	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V									
1971																																									
72																																									
73	2,126.19	660.00	836.30	629.89																																					
74	2,253.50	1,919.00	205.10	129.40																																					
75	1,650.59	872.00	307.73	470.86													148	(9) 54	8																						
76	1,590.25	526.00	846.28	217.97													218	(8) 73	16																						
77	1,035.50	741.00	-	294.50													295	(7) 102	30																						
78	3,119.91	2,499.00	-	620.91															621	(7) 114	71																				
79	1,031.98	-	-	1,031.98																	1,032	(7) 95	98																		
80	411.71	-	-	411.71																			412	(7) 87	36																
81	1,395.71	-	-	1,395.71																				636	(7) 170	108	760	(8) 200	152												
82	4,171.00	-	-	4,171.00																						1,447	(7) 170	246	1,877												
83	1,977.00	-	-	1,977.00																																					
84	1,302.00	-	-	1,302.00																																					
85	1,018.00	-	-	1,018.00																																					
86	1,158.00	-	-	1,158.00																																					
87	1,480.00	-	-	1,480.00																																					
88	473.00	-	-	473.00																																					
89																																									
90																																									
Total	26,194.34	7,217.00	2,195.41	16,781.93	493	81	40	692	79	55	3,907	74	289	2,601	76	197	2,042	77	158	9,735	76	739	661	82	54	621	114	71	1,032	95	98	412	87	36	636	170	108	2,207	180	398	1,877
Thinning					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,302	
From mixed					-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	61	15	262	65	17	302	63	19	165	30	5	188	144	27								
Grand total					493	81	40	692	79	55	3,907	74	289	2,601	76	197	2,042	77	158	9,735	76	739	661	82	54	868	99	86	1,294	89	115	714	77	55	801	141	113	2,395	177	425	3,189

Appendix B-3 Planting & Harvesting Plan of I.T.P. for Red Chips (Bagras)

V: 1,000 m³

Planted In	HA	Damaged by Akang HA	Harvested up to 1983 HA	Balance HA	1980		1981		1982		1983		1984		Sub-total			1985		1986		1987		1988		1989		1990		HA									
					HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA		(Age) m ³ /ha	V							
1971																																							
72	385.53	325.00	54.81	5.72																																			
73	428.64	344.00	66.41	18.23																																			
74	302.00	302.00	-	-																																			
75	466.93	461.00	-	5.93																																			
76	162.51	55.00	-	107.51																																			
77	1,503.30	36.36	-	1,466.94																																			
78	2,565.78	1,211.00	-	1,354.78																																			
79	1,446.12	603.00	-	843.12																																			
80	1,106.99	1,027.00	-	79.99																																			
81	929.62	635.00	-	294.62																																			
82	102.00	-	-	102.00																																			
83	1,228.00	-	-	1,228.00																																			
84	2,032.00	-	-	2,032.00																																			
85	3,366.00	-	-	3,366.00																																			
86	3,380.00	-	-	3,380.00																																			
87	3,380.00	-	-	3,380.00																																			
88	3,380.00	-	-	3,380.00																																			
89																																							
90																																							
Total	26,165.42	4,999.36	121.22	21,044.84	-	-	121	83	10	616	20	12	1,054	19	20	34	19	1	1,825	24	43	-	-	-	-	-	1,344	39	53	1,616	32	51	1,218	47	57	365			
Thinning					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
From mixed					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164	61	10	175	40	7	201	40	8	110	45	5	125	40	5	6			
Grand total							121	83	10	616	20	12	1,054	19	20	34	19	1	1,825	24	43	-	-	164	61	10	175	40	7	1,545	39	61	1,726	32	56	1,343	46	62	371

V: 1,000 m³

1982		1983		1984		Sub-total		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		Sub-total										
(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V	HA	(Age) m ³ /ha	V							
											57	(9) 79	5																									
											354	(8) 56	20																									
													437	(8) 55	24																							
														503	(8) 53	27																						
																275	(8) 36	10																				
																		313	(8) 102	32																		
																			14	(8) 178	3																	
																					1,013	(8) 178	180															
-	-	-	-	-	-	-	-	-	-	-	411	61	25	437	55	24	503	53	27	275	36	10	313	102	32	14	178	3	1,013	178	180	-	-	-	-	2,966	101	301
-	-	-	-	-	-	-	-	-	-	-	247	61	15	262	65	17	302	63	19	165	30	5	188	144	27	8	207	2	608	207	126	-	-	-	-	1,780	119	211
-	-	-	-	-	-	-	-	-	-	-	164	61	10	175	40	7	201	40	8	110	45	5	125	40	5	6	133	1	405	133	54	-	-	-	-	1,186	76	90

Appendix B-9 Actual Cost of Logs from Natural Forest (Clearcut and Selective)

	1981	1982	1983	Jan.-May 1984	In U.S. Dollars
Volume in m ³	855,158	797,430	1,028,140	339,273	339,273
	P/m ³	P/m ³	P/m ³	P/m ³	\$/m ³
Operating Costs					
Felling & Bucking	5.30	2.93	3.44	4.83	0.35
Yarding & Skylining	59.23	39.30	34.98	45.80	3.27
Loading & Hauling	105.79	78.79	64.92	66.18	4.73
Sub-Total	170.32	121.02	103.34	116.81	8.35
Other Costs					
Road Cost	40.19	22.74	19.56	17.97	1.28
Overhead	75.34	34.88	29.34	57.01	4.07
Silvicultural Fees	—	—	0.80	1.76	0.13
Forest Charges	15.95	13.13	1.53	—	—
Sub-Total	131.48	70.75	51.23	76.74	5.48
Total	301.80	191.77	154.57	193.55	13.83

Exchange rate in May, 1984: 1 US\$ = 14 Peso

Appendix B-10 Actual Cost of Logs from Natural Forest (Selective Logging)

	1981	1982	1983	Jan.-May 1984	In U.S. Dollars
Volume in m ³	528,279	340,006	421,219	139,242	139,242
	P/m ³	P/m ³	P/m ³	P/m ³	\$/m ³
Operating Costs					
Felling & Bucking	4.77	2.69	3.14	4.42	0.32
Yarding & Skylining	57.83	42.07	32.06	41.81	2.99
Loading & Hauling	138.00	119.46	92.89	87.30	6.24
Sub-Total	200.60	164.22	128.09	133.53	9.55
Other Costs					
Road Cost	32.15	30.20	31.28	26.88	1.92
Overhead	75.19	34.22	29.09	56.54	4.04
Silvicultural Fees	—	—	1.81	4.31	0.31
Forest Charges	15.66	14.39	1.79	—	—
Sub-Total	123.00	78.81	63.97	87.73	6.27
Total	323.60	243.03	192.06	221.26	15.82

Exchange rate in May, 1984: 1 US\$ = 14 Peso

Appendix B-11 Actual Cost of Logs from Natural Forest (Clearcutting)

	1981	1872	1983	Jan.-May 1984	In U.S. Dollars
Volume in m ³	36,881	457,424	607,421	200,031	200,031
	P/m ³	P/m ³	P/m ³	P/m ³	\$/m ³
Operating Costs					
Felling & Bucking	6.16	3.11	3.65	5.08	0.36
Yarding & Skylining	61.49	37.25	37.01	45.44	3.25
Loading & Hauling	53.74	48.57	45.51	52.24	3.73
Sub-Total	121.39	88.93	86.17	102.76	7.34
Other Costs					
Road Cost	53.18	17.20	11.43	11.77	0.84
Overhead	75.80	31.85	29.50	58.88	4.21
Silvicultural Fees	—	—	0.10	—	—
Forest Charges	15.68	12.20	1.35	—	—
Sub-Total	144.66	61.25	42.38	70.65	5.05
Total	266.05	150.18	128.55	173.41	12.39

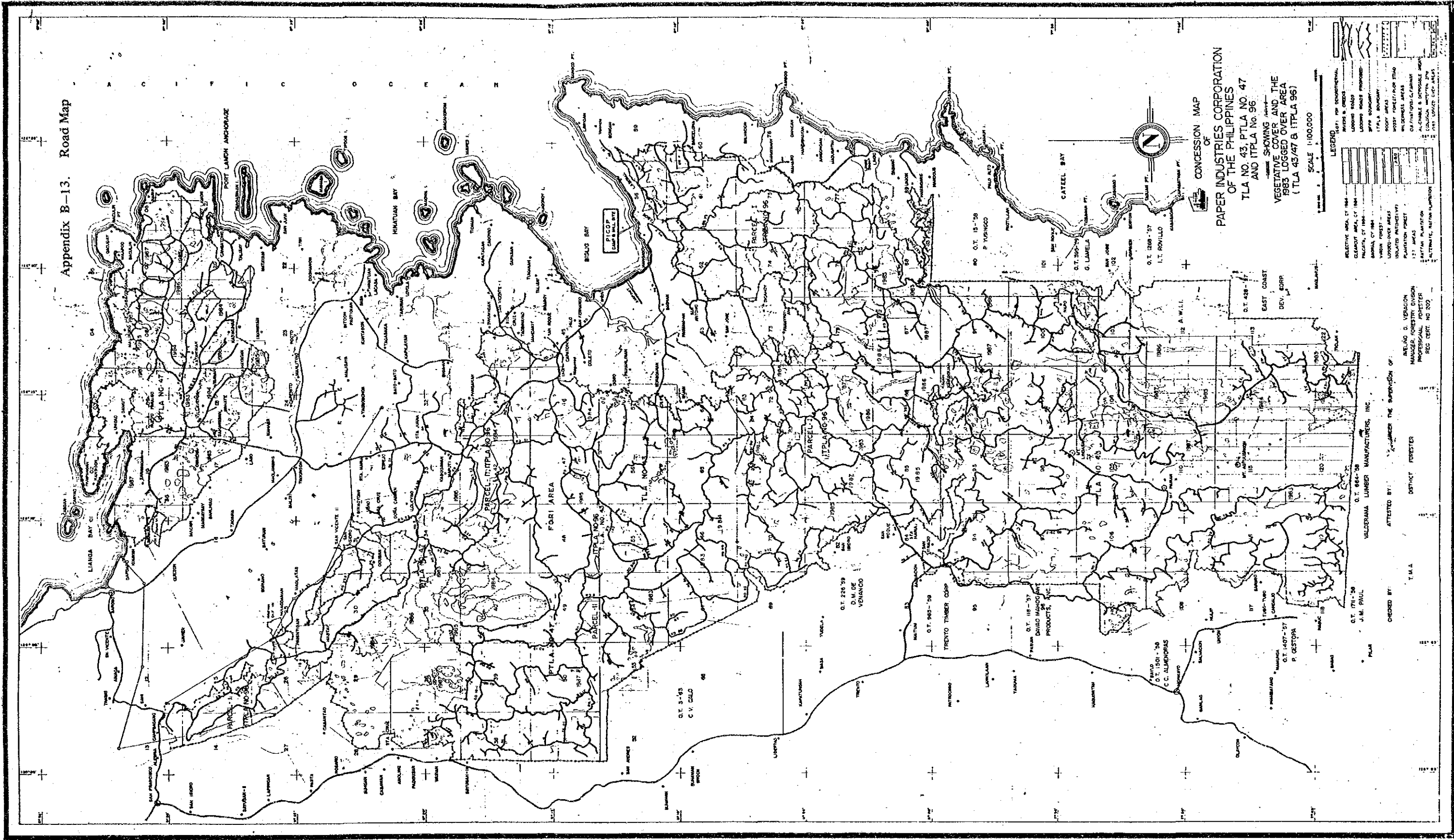
Exchange rate in May, 1984: 1 US\$ = 14 Peso

Appendix B-12 Actual Cost of Logs from I.T.P.

	1981	1982	1983	Jan.-May 1984	In U.S. Dollars
Volume in m ³	65,113	292,091	232,408	65,238	65,238
	P/m ³	P/m ³	P/m ³	P/m ³	\$/m ³
Operating Costs					
Felling, Bucking & Yarding	43.24	43.93	40.38	65.30	4.66
Loading & Hauling	50.76	35.59	44.50	68.61	4.90
Sub-Total	94.00	79.52	84.88	133.91	9.56
Other Costs					
Road Cost	15.57	15.64	4.19	16.38	1.17
Overhead	75.41	39.02	33.42	53.58	3.83
Stumpage cost	—	13.12	15.11	26.19	1.87
Sub-Total	90.98	67.78	52.72	96.15	6.87
Total	184.98	147.30	137.60	230.06	16.43

Exchange rate in May, 1984: 1 US\$ = 14 Peso

Appendix B-13. Road Map



Appendix B-14 Estimated Logging Cost of Natural Forest (1984)

1US\$=18Peso=240Yen

No.	Item	Volume m ³ /y	Condition	Working days/year		Crew		Productivity		No. of machines & workers		Depreciation/machine			Maint. rep. ... etc. /machine		Fuel & lub.				Total		Wages		Grand total
				Shift /D	days/year	No. of machines	No. of workers	m ³ /d	m ³ /y	Machines	Workers/d	Delivered price	Useful life	Dep. cost	%/y	Cost	HP	Consumption	Unit price	Cost	Per machine per year	Total cost	Ave./man	Total cost	
		(1)			days							US\$1,000	Years	US\$1,000/y		US\$1,000/y		ℓ/Day	US\$/ℓ	US\$1,000/y	US\$1,000	US\$1,000/y	US\$/d	US\$1,000/y	US\$1,000
1	Felling by C.S.	324,000		1	300	1	2	55.0	16,500	19.64	39.27	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	66.2	3.3	38.9	105
2	Felling by C.S.	538,000		1	300	1	2	50.0	15,000	35.87	71.73	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	120.9	3.3	71.0	191
3	Tractor Skidding	269,000	Max. Distance 250 m *1	1	* 240	1	2	65.0	13,000	20.69	41.38	80.0	5.0	16.00	0.30	24.0	140.0	80.0	0.3	5.3	45.30	937.2	3.3	32.8	970
4	Yarding & Stacking	324,000	250 m	1	* 220	1	8	65.0	14,300	22.66	181.26	130.0	8.0	16.25	0.12	15.6	500.0	90.0	0.3	5.9	37.75	855.4	3.3	143.6	999
5	Yarding & Stacking	269,000	250 m	1	* 220	1	8	60.0	13,200	20.38	163.03	80.0	6.0	13.33	0.15	12.0	300.0	70.0	0.3	4.6	29.93	610.0	3.3	129.1	739
6	Buck. by C.S.	269,000		1	270	1	2	65.0	17,550	15.33	30.66	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	1.9	3.07	47.1	3.3	27.3	74
7	Buck. by C.S.	269,000		1	270	1	2	60.0	16,200	16.60	33.21	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	1.9	3.07	51.0	3.3	29.6	80
8	Stack. by crane	269,000		1	270	1	2	200.0	54,000	4.98	9.96	80.0	6.0	13.33	0.15	12.0	100.0	30.0	0.3	2.4	27.73	138.1	3.3	8.9	147
9	Loading by crane	324,000		1	300	1	4	1,100.0	330,000	0.98	3.93	140.0	3.0	46.67	0.35	49.0	175.0	140.0	0.3	12.6	108.27	106.1	3.3	3.9	110
10	Loading by crane	538,000		2	300	1	4	550.0	165,000	3.26	13.04	80.0	3.0	26.67	0.35	28.0	100.0	80.0	0.3	7.2	61.87	201.7	3.3	12.9	214
11	Hauling by truck	324,000	Average Distance 46 Km	2	300	1	4	96.0	28,800	11.25	45.00	80.0	2.3	34.78	0.75	60.0	335.0	265.0	0.3	23.9	118.68	1,335.2	3.3	44.6	1,379
12	Hauling by truck	538,000	42 Km	2	300	1	4	90.0	27,000	19.93	79.70	80.0	2.5	32.00	0.65	52.0	335.0	230.0	0.3	20.7	104.70	2,086.7	3.3	78.9	2,165
13	(Road cost)																								
14	(Overhead)																								
	Grand total	(2) 862,000									712.17											6,555.6		621.51	7,177

*1 include spur road construction

g days/year	Crew		Productivity		No. of machines & workers		Depreciation/machine			Maint. rep. -- etc. /machine		Fuel & lub.				Total		Wages		Grand total	G.T./ (1) \$/m ³	G.T./ (2) \$/m ³	Remarks	
	days/year	No. of machines	No. of workers	m ³ /d	m ³ /y	Machines	Workers/d	Delivered price	Useful life	Dep. cost	%/y	Cost	HP	Consumption	Unit price	Cost	Per machine per year	Total cost	Ave./man					Total cost
days							US\$1,000	Years	US\$1,000/y		US\$1,000/y		ℓ/Day	US\$/ℓ	US\$1,000/y	US\$1,000	US\$1,000/y	US\$/d	US\$1,000/y	US\$1,000/y				
300	1	2	55.0	16,500	19.64	39.27	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	66.2	3.3	38.9	105.1	0.32	0.12		
300	1	2	50.0	15,000	35.87	71.73	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	120.9	3.3	71.0	191.9	0.36	0.22		
* 240	1	2	65.0	13,000	20.69	41.38	80.0	5.0	16.00	0.30	24.0	140.0	80.0	0.3	5.3	45.30	937.2	3.3	32.8	970.0	3.61	1.13	* Net yarding days/y.	
* 240	1	8	65.0	14,300	22.66	181.26	130.0	8.0	16.25	0.12	15.6	500.0	90.0	0.3	5.9	37.75	855.4	3.3	143.6	999.0	3.08	1.16	The no. of days for calculation of fuel consumption is 220 days.	
* 220	1	8	60.0	13,200	20.38	163.03	80.0	6.0	13.33	0.15	12.0	300.0	70.0	0.3	4.6	29.93	610.0	3.3	129.1	739.1	2.75	0.86		
270	1	2	65.0	17,550	15.33	30.66	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	1.9	3.07	47.1	3.3	27.3	74.4	0.28	0.09		
270	1	2	60.0	16,200	16.60	33.21	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	1.9	3.07	51.0	3.3	29.6	80.6	0.30	0.09	Sub total \$/m ³ 3.67 PICOP Jan-May 3.62	
270	1	2	200.0	54,000	4.98	9.96	80.0	6.0	13.33	0.15	12.0	100.0	30.0	0.3	2.4	27.73	138.1	3.3	8.9	147.0	0.55	0.17		
300	1	4	1,100.0	330,000	0.98	3.93	140.0	3.0	46.67	0.35	49.0	175.0	140.0	0.3	12.6	108.27	106.1	3.3	3.9	110.0	0.34	0.13		
300	1	4	550.0	165,000	3.26	13.04	80.0	3.0	26.67	0.35	28.0	100.0	80.0	0.3	7.2	61.87	201.7	3.3	12.9	214.6	0.40	0.25		
300	1	4	96.0	28,800	11.25	45.00	80.0	2.3	34.78	0.75	60.0	335.0	265.0	0.3	23.9	118.68	1,335.2	3.3	44.6	1,379.8	4.26	1.60		
300	1	4	90.0	27,000	19.93	79.70	80.0	2.5	32.00	0.65	52.0	335.0	230.0	0.3	20.7	104.70	2,086.7	3.3	78.9	2,165.6	4.03	2.51	Sub total \$/m ³ 4.66 PICOP Jan-May 4.73	
																						(1.28)		
																							(4.07)	
						712.17											6,555.6		621.51	7,177.1		8.33	Total 8.33 8.35 Exclusive of ()	

oad construction

Appendix B-15 Estimated Logging Cost of Industrial Tree Plantation (1984)

1US\$=18Peso=240Yen

No.	Item	Volume m ³ /y	Condition	Working days/year		Crew		Productivity		No. of machines & workers		Depreciation/machine			Maint. rep. etc. /machine		Fuel & lub				Total		Wages		Grand total	
				Shift /D	days/year	No. of machines	No. of workers	m ³ /d	m ³ /y	Machines	Workers/d	Delivered price	Useful life	Dep. cost	%/y	Cost	HP	Consumption	Unit price	Cost	US\$1,000/y	US\$1,000	US\$1,000/y	US\$/d		US\$1,000/y
1	Felling by C.S.	95,000	include Debarking	1	300	1	6	25.0	7,500	12.67	76.00	0.8	1.5	0.5	0.50	0.4	5	6.0	0.6	1.10	2.00	25.34	3.0	68.4	93.7	
2	Fell. & Buck. by man	64,000	include Debarking	1	300		4	5.5	1,650	0.00	155.15											2.9	134.9	134.9		
3	Tractor skidding	19,000	Max. distance 250 m *1	1	* 240	1	2	25.0	5,000	3.80	7.60	30.0	4.0	7.5	0.30	9.0	63	40.0	0.3	2.60	19.10	72.58	3.3	6.0	78.6	
4	Yarding & Stacking	76,000	600 m	1	* 190	1	6	30.0	5,700	13.33	80.00	25.0	5.0	5.0	0.20	5.0	67	30.0	0.3	2.00	12.00	159.96	3.3	63.3	223.3	
5	Cow Skidding	64,000	include pre- yarding		* 240	cow (2)	2	4.0	960	133.33	133.33											6.0	192.0	192.0		
6	Buck. at land. by C.S.	95,000		1	270	1	2	70.0	18,900	5.03	10.05	0.8	1.5	0.5	0.50	0.4	5	7.0	0.6	1.10	2.00	10.06	3.3	8.9	19.0	
7	Stacking by crane	19,000		1	270	1	2	100.0	27,000	0.70	1.41	48.0	6.0	8.0	0.15	7.2	61	15.0	0.3	1.20	16.40	11.48	3.3	1.2	12.7	
8	Stacking by man	64,000	No platform for loading	1	270		2	15.0	4,050	0.00	31.60											2.9	24.7	24.7		
9	Loading by crane	95,000	with grapple	2	300	1	4	360.0	108,000	0.88	3.52	48.0	2.5	19.2	0.40	19.2	61	55.0	0.3	4.95	43.35	38.15	3.3	3.4	41.6	
10	Loading by crane	64,000	with grapple	2	300	1	4	300.0	90,000	0.71	2.84	48.0	3.0	16.0	0.35	16.8	61	50.0	0.3	4.50	37.30	26.48	3.3	2.8	29.2	
11	Hauling by truck	95,000	Average Distance 30 Km	2	300	1	4	96.0	28,800	3.30	13.19	80.0	2.5	32.0	0.60	48.0	335	180.0	0.3	16.20	96.20	317.46	3.3	13.0	330.5	
12	Hauling by truck	64,000	Average Distance 30 Km	2	300	1	4	28.0	8,400	7.62	30.48	23.0	2.3	10.0	0.70	16.1	130	100.0	0.3	9.00	35.10	267.46	3.3	30.1	297.6	
13	(Road cost)																									
14	(Overhead)																									
	Grand total	(2) 159,000									545.17											928.97		549.24	1,478.2	

*1 include spur road construction

Cost of Industrial Tree Plantation (1984)

1US\$=18Peso=240Yen

Working days/year		Crew		Productivity		No. of machines & workers		Depreciation/machine			Maint. rep. .. etc. /machine		Fuel & lub				Total		Wages		Grand total	G.T./ (1) \$/m ³	G.T./ (2) \$/m ³	Remarks
Shift /D	days/year	No. of machines	No. of workers	m ³ /d	m ³ /y	Machines	Workers/d	Delivered price	Useful life	Dep. cost	%/Y	Cost	HP	Consumption	Unit price	Cost	Per machine per year	Total cost	Ave./man	Total cost				
								US\$1,000	Years	US\$1,000/y		US\$1,000/y		%/Day	US\$/%	US\$1,000/y	US\$1,000	US\$1,000/y	US\$/d	US\$1,000/y	US\$1,000/y			
1	300	1	6	25.0	7,500	12.67	76.00	0.8	1.5	0.5	0.50	0.4	5	6.0	0.6	1.10	2.00	25.34	3.0	68.4	93.74	0.987	0.59	
1	300		4	5.5	1,650	0.00	155.15												2.9	134.9	134.98	2.109	0.85	
1	* 240 200	1	2	25.0	5,000	3.80	7.60	30.0	4.0	7.5	0.30	9.0	63	40.0	0.3	2.60	19.10	72.58	3.3	6.0	78.60	4.137	0.49	* Net yarding days/Y. The no. of days for calculation of fuel consumption is 220 days.
1	* 190	1	6	30.0	5,700	13.33	80.00	25.0	5.0	5.0	0.20	5.0	67	30.0	0.3	2.00	12.00	159.96	3.3	63.3	223.32	2.938	1.40	
	* 240	cow (2)	2	4.0	960	133.33	133.33												6.0	192.0	192.00	3.000	1.21	
1	270	1	2	70.0	18,900	5.03	10.05	0.8	1.5	0.5	0.50	0.4	5	7.0	0.6	1.10	2.00	10.06	3.3	8.9	19.01	0.200	0.12	Sub total \$/m ³ 4.66 PICOP Jan-May 4.66
1	270	1	2	100.0	27,000	0.70	1.41	48.0	6.0	8.0	0.15	7.2	61	15.0	0.3	1.20	16.40	11.48	3.3	1.2	12.74	0.671	0.08	
1	270		2	15.0	4,050	0.00	31.60												2.9	24.7	24.74	0.387	0.16	
2	300	1	4	360.0	108,000	0.88	3.52	48.0	2.5	19.2	0.40	19.2	61	55.0	0.3	4.95	43.35	38.15	3.3	3.4	41.63	0.438	0.26	
2	300	1	4	300.0	90,000	0.71	2.84	48.0	3.0	16.0	0.35	16.8	61	50.0	0.3	4.50	37.30	26.48	3.3	2.8	29.29	0.458	0.18	
2	300	1	4	96.0	28,800	3.30	13.19	80.0	2.5	32.0	0.60	48.0	335	180.0	0.3	16.20	96.20	317.46	3.3	13.0	330.52	3.479	2.08	
2	300	1	4	28.0	8,400	7.62	30.48	23.0	2.3	10.0	0.70	16.1	130	100.0	0.3	9.00	35.10	267.46	3.3	30.1	297.64	4.651	1.87	Sub total \$/m ³ 4.63 PICOP Jan-May 4.90
																							(1.17)	
																							(3.83)	
							545.17											928.97		549.24	1,478.21		9.29	Total 9.29 Exclusive of () 9.56

*1 include spur road construction

Appendix B-16 Discounted Value of Planted Falcata (Peso/ha.)

Age (n)	Site Preparation	Seedlings including Nursery Cost	Planting, Replanting	Weeding, Brushing & Over-head	Materials	Incentive to Contractor	Total	Expecting Yield Volume	Coefficient of Discounted Value	Discounted Value	Discounted Yield Volume
1	610	280	615		330	410	2,245		0.9091	2,041	
2		30	90	1,970	290	1,575	3,955		0.8264	3,268	
3				340			340		0.7513	255	
4				340			340		0.6830	232	
5				340			340		0.6209	211	
6				340			340		0.5645	192	
7				340			340		0.5132	174	
8				340			340		0.4665	159	
(9)	520	30	260		330	410	1,550	242	0.4241	657	103
10				1,970	290	1,570	3,830		0.3855	1,476	
11				340			340		0.3505	119	
12				340			340		0.3186	108	
13				340			340		0.2897	98	
14				340			340		0.2633	90	
15				340			340		0.2394	81	
16				340			340		0.2176	74	
(17)	520	30	260		330	410	1,550	242	0.1978	307	48
18				1,970	290	1,570	3,830		0.1799	689	
19				340			340		0.1635	56	
20				340			340		0.1486	51	
21				340			340		0.1351	46	
22				340			340		0.1228	42	
23				340			340		0.1117	38	
24				340			340		0.1015	35	
(25)								242	0.0923		22
	1,650	370	1,225	12,030	1,860	5,945	23,080	726		10,499	173

The number of planted trees: 1,110 trees per ha.
 Cutting age: 8 years old, no thinning.
 Final yield: 242 m³/ha.
 The number of regenerations by sprout: 2
 Percentage of regeneration by sprout: 100%
 Stumpage cost: 10,499 P/173 m³ = 60.69 P/m³ = 3.37 \$/m³

Appendix B-17 Discounted Value of Planted Bagras (Peso/ha.)

Age (n)	Site Preparation	Seedlings including Nursery Cost	Planting, Replanting	Weeding, Brushing & Over-head	Materials	Incentive to Contractor	Total	Expecting Yield Volume	Coefficient of Discounted Value	Discounted Value	Discounted Yield Volume
1	610	350	720		330	440	2,450		0.9091	2,227	
2		35	100	2,410	80	920	3,545		0.8264	2,930	
3				340			340		0.7513	255	
4				340			340		0.6830	232	
5				340			340		0.6209	211	
6				340			340		0.5645	192	
7				340			340		0.5132	174	
8				340			340		0.4665	159	
(9)	520	210	430		330	440	1,930	150	0.4241	819	64
10				2,410	80	920	3,410		0.3855	1,315	
11				340			340		0.3505	119	
12				340			340		0.3186	108	
13				340			340		0.2897	98	
14				340			340		0.2633	90	
15				340			340		0.2394	81	
16				340			340		0.2176	74	
(17)	520	210	430		330	440	1,920	150	0.1978	382	30
18				2,410	80	920	3,410		0.1799	613	
19				340			340		0.1635	56	
20				340			340		0.1486	51	
21				340			340		0.1351	46	
22				340			340		0.1228	42	
23				340			340		0.1117	38	
24				340			340		0.1015	35	
(25)								150	0.0923		14
	1,650	805	1,680	13,350	1,230	4,080	22,795	450		10,347	108

The number of planted trees: 1,110 trees per ha.
 Cutting age: 8 years old, no thinning.
 Final yield: 150 m³/ha.
 The number of regenerations by sprout: 2
 Percentage of regeneration by sprout: 50%
 Stumpage cost: 10,347 P/108 m³ = 95.81 P/m³ = 5.32 \$/m³

Appendix B-18 Estimated Logging Cost of Natural Forest (1992)

1US\$=18Peso=240Yen

No.	Item	Volume m ³ /y	Condition	Working days/year		Crew		Productivity		No. of machines & workers		Depreciation/machine			Maint. rep. ... etc. /machine		Fuel & lub				Total		Wages		Grand	
				Shift /D	days/year	No. of machines	No. of workers	m ³ /d	m ³ /y	Machines	Workers/d	Delivered price	Useful life	Dep. cost	%/y	Cost	HP	Consump- tion	Unit price	Cost	US\$1,000 /a	Per machine per year	Total cost	Ave./man		Total cost
1	Felling by C.S.	207,000		1	300	1	2	50.0	15,000	13.80	27.60	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	46.5	3.3	27.3		
2	Felling by C.S.	50,000		1	300	1	2	45.0	13,500	3.70	7.41	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	12.5	3.3	7.3		
3	Yarding & Stacking	207,000	Max. Distance 250 m	1	* 240 220	1	8	58.0	12,760	16.22	129.78	130.0	8.0	16.25	0.12	15.6	500.0	90.0	0.3	5.9	37.75	612.3	3.3	102.8	71	
4	Yarding & Stacking	50,000	250 m	1	* 220	1	8	50.0	11,000	4.55	36.36	80.0	6.0	13.33	0.15	12.0	300.0	70.0	0.3	4.6	29.93	136.2	3.3	28.8	165	
5	Buck. by C.S.	50,000		1	270	1	2	50.0	13,500	3.70	7.41	1.0	1.5	0.67	0.50	0.5	10.0	11.0	0.6	1.8	2.97	11.0	3.3	6.6	17	
6	Loading by crane	207,000		1	300	1	4	960.0	288,000	0.72	2.88	140.0	3.0	46.67	0.35	49.0	175.0	140.0	0.3	12.6	108.27	78.0	3.3	2.9	90	
7	Loading by crane	50,000		2	300	1	4	460.0	138,000	0.36	1.45	80.0	3.0	26.67	0.35	28.0	100.0	80.0	0.3	7.2	61.87	22.3	3.3	1.4	23	
8	Hauling by truck	207,000	Average Distance 42 Km	2	300	1	4	100.0	30,000	6.90	27.60	80.0	2.3	34.78	0.75	60.0	335.0	260.0	0.3	23.4	118.18	815.4	3.3	27.3	842	
9	Hauling by truck	50,000	42 Km	2	300	1	4	82.0	24,600	2.03	8.13	80.0	2.5	32.00	0.65	52.0	335.0	225.0	0.3	20.3	104.30	211.7	3.3	8.0	215	
10	(Road cost)																									
11	(Overhead)																									
	Grand total	(2) 257,000									248.62											1,945.9		212.4	2,158	

1US\$=18Peso=240Yen

days/year	Crew		Productivity		No. of machines & workers		Depreciation/machine			Maint. rep. . . etc. /machine		Fuel & lub				Total		Wages		Grand total	G.T./ (1) \$/m ³	G.T./ (2) \$/m ³	Remarks
	days/year	No. of machines	No. of workers	m ³ /d	m ³ /y	Machines	Workers/d	Delivered price	Useful life	Dep. cost	\$/y	Cost	HP	Consumption	Unit price	Cost	Per machine per year	Total cost	Ave./man				
days							US\$1,000	Years	US\$1,000/y		US\$1,000/Y		ℓ/Day	US\$/ℓ	US\$1,000/a	US\$1,000	US\$1,000/y	US\$/d	US\$1,000/y	US\$1,000/y			
300	1	2	50.0	15,000	13.80	27.60	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	46.5	3.3	27.3	73.8	0.36	0.29	
300	1	2	45.0	13,500	3.70	7.41	1.0	1.5	0.67	0.50	0.5	10.0	12.0	0.6	2.2	3.37	12.5	3.3	7.3	19.8	0.40	0.08	
* 240	1	8	58.0	12,760	16.22	129.78	130.0	8.0	16.25	0.12	15.6	500.0	90.0	0.3	5.9	37.75	612.3	3.3	102.8	715.1	3.45	2.78	The No. of days for calculation of fuel consumption is 220 days Sub total \$3.86/m ³
* 220	1	8	50.0	11,000	4.55	36.36	80.0	6.0	13.33	0.15	12.0	300.0	70.0	0.3	4.6	29.93	136.2	3.3	28.8	165.0	3.30	0.64	
270	1	2	50.0	13,500	3.70	7.41	1.0	1.5	0.67	0.50	0.5	10.0	11.0	0.6	1.8	2.97	11.0	3.3	6.6	17.6	0.35	0.07	
300	1	4	960.0	288,000	0.72	2.88	140.0	3.0	46.67	0.35	49.0	175.0	140.0	0.3	12.6	108.27	78.0	3.3	2.9	80.9	0.39	0.31	
300	1	4	460.0	138,000	0.36	1.45	80.0	3.0	26.67	0.35	28.0	100.0	80.0	0.3	7.2	61.87	22.3	3.3	1.4	23.7	0.47	0.09	
300	1	4	100.0	30,000	6.90	27.60	80.0	2.3	34.78	0.75	60.0	335.0	260.0	0.3	23.4	118.18	815.4	3.3	27.3	842.7	4.07	3.28	
300	1	4	82.0	24,600	2.03	8.13	80.0	2.5	32.00	0.65	52.0	335.0	225.0	0.3	20.3	104.30	211.7	3.3	8.0	219.7	4.39	0.85	Sub total \$4.53/m ³
						248.62											1,945.9		212.4	2,158.3		8.39	Total \$8.39/m ³

Appendix C-1

ORGANIZATION OF THE STUDY TEAM

The Study Team consisted of twelve (12) members: ten (10) from Oji Paper Co., Ltd. and two (2) from Honshu Paper Co., Ltd., whose names and functions are listed in the following.

— Members of Field Survey Team: nine (9) members

<u>Name</u>	<u>Function</u>	<u>Title</u>
Tetsuro Kondo	Leader of the Team	General Manager Engineering Dep't. Oji Paper Co., Ltd.
Yoshi Amamiya	Market, Finance, Economy	Senior Counselor Engineering Dep't. Oji Paper Co., Ltd.
Juei Morokuma	Forest	General Manager Forest Dep't. Oji Paper Co., Ltd.
Hideya Shono	Paperboard Machine Maintenance	Project Manager Engineering Dep't. Oji Paper Co., Ltd.
Susumu Morimoto	Paperboard Machine Operaton, Paperboard Market	Counselor Honshu Paper Co., Ltd.
Fukuichi Minami	Wood Preparation, Forest	Counselor Forest Dep't. Oji Paper Co., Ltd.
Toshio Miyajima	Pulp, Quality	Project Engineer Engineering Dep't. Oji Paper Co., Ltd.

Ryuichi Yamada	Power Plant, Utility, Environment	Project Engineer Engineering Dep't. Oji Paper Co., Ltd.
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Gen Saito	Newsprint Machine, Newsprint Market	Project Engineer Engineering Dep't. Oji Paper Co., Ltd.
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— Members of Domestic Working Group: three (3) members

<u>Name</u>	<u>Function</u>	<u>Title</u>
Tsutomu Onodera	Machinery and Equipment, Production Control	General Manager Engineering Dep't. Oji Paper Co., Ltd.
Nobuyuki Ishii	Finance and Economy	Manager Financial Engineering Dep't. Oji Paper Co., Ltd.
Keiichi Tamai	Paperboard Planning	General Manager Engineering Dep't. Honshu Paper Co., Ltd.

Appendix C-2

SCHEDULE OF THE FIELD SURVEY TEAM

Itinerary of the Field Survey Team is as follows:

1)	Departure (Tokyo)	All (9) members	Sept. 10, 1984
2)	Diagnosis of Mills		
	Iligan Mill	Morimoto, Amamiya, Shono	Sept. 13-15
	Bislig Mill		
	— Pulp and Paper	Kondo, Miyajima, Yamada	Sept. 13-22
		Saito	Sept. 13-20
		Morimoto, Amamiya	Sept. 15-20
		Shono	Sept. 15-22
	— Wood Resources	Morokuma	Sept. 13-22
		Minami	Sept. 13-20
3)	Market Study (at Manila)	Amamiya	Sept. 21-25
		Morimoto, Minami, Saito	Sept. 21-24
4)	Progress Report		
	Submission and discussion with BOI	Kondo, Amamiya, Miyajima	Sept. 25
5)	Signature of Minutes	Kondo, Amamiya, Miyajima	Sept. 27
6)	Arrival (Tokyo)		
	— First Group (6 members)	Morokuma, Shono, Morimoto, Minami, Yamada, Saito	Sept. 25 (Stay for 16 days)
	— Second Group (3 members)	Kondo, Amamiya, Miyajima	Sept. 28 (Stay for 19 days)

Appendix C-3

COUNTERPARTS AND MAIN INTERVIEWEES OF THE PHILIPPINES

1. Philippine sides

A) Board of Investments (BOI)

Min. Edgardo Tordesillas	Vice-Chairman, Board of Investments
Mr. Hermenegildo Zayco	Supervising Governor, Agro-Industrial Dept.
Mrs. Ramona P. Miguel	Director, Agro-Industrial Department
Mrs. Angela M. Fernando	Chief, Pulp and Paper Division
Mr. Jaime R. Navarro	Asst. Chief, Pulp and Paper Division

B) National Economic and Development Authority (NEDA)

Mr. E. G. Corpuz	Assistant Director General
Mr. Alfred Feliciano	External Assistance Staff

C) Paper Industries Corporation of the Philippines (PICOP)

— Head Office

Mr. R. D. Stratton	President
Mr. R. C. Salazar	Executive Vice President
Mr. E. M. Narvaez, Jr.	Vice President-Finance
Mr. R. G. Lavadia	Asst. Vice President, Government Relations
Mr. R. C. Palpal-latoc	Director, Financial & Marketing Planning

— Marketing

Mr. P. M. Picornell	President, PICOP Trading Corporation (PTC)
Mr. P. M. Aragon	Vice President, Marketing
Mr. L. Y. Marty	Asst. Vice President, Marketing, PTC
Mr. W. A. Balabat	Manager, Newsprint Sales, PTC
Mr. H. A. Beltran	Manager, Containerboard Sales, PTC
Mr. E. R. Abesamis	Manager, Market Research and Development

— Bislig Mill

* Pulp and Paper Manufacturing Group

Mr. S. E. Balmer	Vice President, Manufacturing
Mr. F. G. Balagtas	Director, Technical Planning, Corplan
Mr. A. L. Solis	Senior Member, Corplan
Mr. V. P. Banatao	Division Manager, PPMD
Mr. M. E. Marcojos	Department Manager, Pulp Mill
Mr. G. P. Porras	Department Manager, Chemical Plants
Mr. C. T. Pepino	Department Manager, Paper Mill
Mr. A. F. Tagudina	Division Manager, Energy Division
Mr. R. A. Gonzales	Department Manager, Steam and Power
Mr. V. SJ. San Jose	Division Manager, Maintenance and Engineering
Mr. A. F. Oropilla	Department Manager, Consolidated Shops
Mr. E. R. Roxas	Director, Research & Technical Services

* Resource Management Group

Mr. R. G. Santiago	Vice President, Resource Management
Mr. R. A. Dormendo	Division Manager, Forestry Division
Mr. C. L. de la Cruz	Division Manager, Wood Supply
Mr. F. A. Cruz	Division Manager, Wood Procurement
Mr. M. L. Garcia	Department Manager, Industrial Tree Plantation Division
Mr. VJ. A. Ramos	Department Manager, Forest Research Department

* Administration

Mr. C. B. Andres	Department Manager, Public Relations
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D) Steniel Manufacturing Corporation

Mr. Henry Co See Cho	President
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E) Atlas Lithographic Service, Inc.

Mr. Moises C. Chua	General Manager
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F) Rex Printing Company, Inc.

Mr. J. F. Fontelera Proprietor

G) Bulletin Publishing Corporation

Mr. E. S. Vicente Plant Superintendent

H) San Miguel Corp. Carton Plant, Falola Compound

Mr. Virgil Send Production Engineer

I) Pulp and Paper Manufacturers Association, Inc.

Mr. Francisco P. Monge President

2. Japanese sides

A) The Embassy of Japan

Mr. N. Terasaka First Secretary

B) JICA Manila Office

Mr. A. Mitarai Resident Representative

Mr. T. Sakata Deputy Resident Representative

Mr. Y. Okazaki Staff

Appendix D

Profitability of Plan A Renovation on Alternative Raising Plan of Funds (Requested by the Minutes of Meeting on the Draft Final Report)

1. Total Capital Requirement

Sources of Funds	Raising Amount of Funds (1,000 US\$)			
	1987	1988	Total	
PICOP's own funds	1,724	9,521	11,245	(24.7%)
Long term local loan Investment related	1,134	6,266	7,400	
Interest during construction	9	487	496	
Sub total	1,143	6,753	7,896	(17.4%)
Long term foreign loan	1,247	25,089	26,336	(57.9%)
Total capital requirement	4,114	41,363	45,477	(100.0%)

Note: 1) In the above estimation, interest during construction on long term local loan is raised by the additional borrowing of long term local loan.

2) Financing conditions of long term loans;

– Long term local loan

Loan period	10 years including 2 years grace period
Repayment	Semi-annual equal installment (17 times)
Interest rate	24% per annum
Interest during construction	Not graced

– Long term foreign Loan

Loan period	10 years including 2 years grace period
Repayment	Semi-annual equal installment (16 times)
Interest rate	10.5% per annum

The payment of interest during the grace period is postponed until commencement of principals repayment.

2. Profitability Indicator

	Before Income Tax	After Income Tax
IRR (%)	26.4	21.3
ROI (%)	25.1	18.5
Cumulative net profit after income tax (US\$ million)	—	51

JICA