

Table L-23 Result of Financial and Economic Analysis (K8-28 Zeras)

(1,000Rls.)

Project	Financial Analysis			Economic Analysis		
	NPV	B/C	FIRR	NPV	B/C	EIRR
(1) Construction of check dam	-	-	-	1,465,814	2.15	30.0%
(2) Relocation of houses	-	-	-	740,944	1.49	18.6%
(3) Landslide protection	-	-	-	-97,106	0.22	#DIV/0!
(4) Soil erosion protection	-	-	-	713,196	1.36	22.4%
(5) Rangeland vegetation improvement	-	-	-	616,979	15.24	366.5%
(6) Milk processing and marketing	1,058,918	1.22	56.3%	1,170,970	1.27	62.3%
(7) Rural water supply improvement	-3,111,632	0.03	#DIV/0!	-2,925,091	0.03	#DIV/0!
(8) Rural road improvement	2,744,667	1.74	22.0%	2,580,109	1.74	22.0%
(9) Establishment of cooperative	317,170	1.29	39.0%	563,808	1.74	58.3%
(10) Community enhancement	Intangible	Intangible	Intangible	Intangible	Intangible	Intangible
Total	1,175,328	1.09	14.2 %	5,076,950	1.30	18.4 %

Table L-23-1 Milk Processing and Marketing (Financial Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	65,880	0	65,880	0	-65,880	0.8929	58,824	0	-58,824
2	2003	65,880	0	65,880	0	-65,880	0.7972	52,520	0	-52,520
3	2004	65,880	0	65,880	0	-65,880	0.7118	46,893	0	-46,893
4	2005	65,880	797,460	863,340	1,022,000	158,660	0.6355	548,653	649,481	100,828
5	2006	65,880	797,460	863,340	1,022,000	158,660	0.5674	489,859	579,883	90,024
6	2007	0	797,460	797,460	1,022,000	224,540	0.5066	403,993	517,745	113,752
7	2008	0	797,460	797,460	1,022,000	224,540	0.4523	360,691	462,251	101,560
8	2009	0	797,460	797,460	1,022,000	224,540	0.4039	322,094	412,786	90,692
9	2010	0	797,460	797,460	1,022,000	224,540	0.3606	287,564	368,533	80,969
10	2011	0	797,460	797,460	1,022,000	224,540	0.3220	256,782	329,084	72,302
11	2012	0	797,460	797,460	1,022,000	224,540	0.2875	229,270	293,825	64,555
12	2013	0	797,460	797,460	1,022,000	224,540	0.2567	204,708	262,347	57,639
13	2014	0	797,460	797,460	1,022,000	224,540	0.2292	182,778	234,242	51,464
14	2015	0	797,460	797,460	1,022,000	224,540	0.2046	163,160	209,101	45,941
15	2016	0	797,460	797,460	1,022,000	224,540	0.1827	145,696	186,719	41,023
16	2017	0	797,460	797,460	1,022,000	224,540	0.1631	130,066	166,688	36,622
17	2018	0	797,460	797,460	1,022,000	224,540	0.1456	116,110	148,803	32,693
18	2019	0	797,460	797,460	1,022,000	224,540	0.1300	103,670	132,860	29,190
19	2020	0	797,460	797,460	1,022,000	224,540	0.1161	92,585	118,654	26,069
20	2021		797,460	797,460	1,022,000	224,540	0.1037	82,697	105,981	23,284
21	2022		797,460	797,460	1,022,000	224,540	0.0926	73,845	94,637	20,792
22	2023		797,460	797,460	1,022,000	224,540	0.0826	65,870	84,417	18,547
23	2024		797,460	797,460	1,022,000	224,540	0.0738	58,853	75,424	16,571
24	2025		797,460	797,460	1,022,000	224,540	0.0659	52,553	67,350	14,797
25	2026		797,460	797,460	1,022,000	224,540	0.0588	46,891	60,094	13,203
26	2027		797,460	797,460	1,022,000	224,540	0.0525	41,867	53,655	11,788
27	2028		797,460	797,460	1,022,000	224,540	0.0469	37,401	47,932	10,531
28	2029		797,460	797,460	1,022,000	224,540	0.0419	33,414	42,822	9,408
29	2030		797,460	797,460	1,022,000	224,540	0.0374	29,825	38,223	8,398
30	2031		797,460	797,460	1,022,000	224,540	0.0334	26,635	34,135	7,500
31	2032		797,460	797,460	1,022,000	224,540	0.0298	23,764	30,456	6,692
32	2033		797,460	797,460	1,022,000	224,540	0.0266	21,212	27,185	5,973
33	2034		797,460	797,460	1,022,000	224,540	0.0238	18,980	24,324	5,344
34	2035		797,460	797,460	1,022,000	224,540	0.0212	16,906	21,666	4,760
35	2036		797,460	797,460	1,022,000	224,540	0.0189	15,072	19,316	4,244
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		329,400	25,518,720	25,848,120	32,704,000	6,855,880		4,841,701	5,900,619	1,058,918

N.P.V=	1,058,918
B/C=	1.22
FIRR=	56.3%

Table L-23-2 Rural Water Supply Improvement (Financial Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	1,003,000	0	1,003,000	0	-1,003,000	0.8929	895,579	0	-895,579
2	2003	1,003,000	0	1,003,000	0	-1,003,000	0.7972	799,592	0	-799,592
3	2004	1,003,000	0	1,003,000	0	-1,003,000	0.7118	713,935	0	-713,935
4	2005	0	137,100	137,100	14,570	-122,530	0.6355	87,127	9,259	-77,868
5	2006	0	137,100	137,100	14,570	-122,530	0.5674	77,791	8,267	-69,524
6	2007	0	137,100	137,100	14,570	-122,530	0.5066	69,455	7,381	-62,074
7	2008	0	137,100	137,100	14,570	-122,530	0.4523	62,010	6,590	-55,420
8	2009	0	137,100	137,100	14,570	-122,530	0.4039	55,375	5,885	-49,490
9	2010	0	137,100	137,100	14,570	-122,530	0.3606	49,438	5,254	-44,184
10	2011	0	137,100	137,100	14,570	-122,530	0.3220	44,146	4,692	-39,454
11	2012	0	137,100	137,100	14,570	-122,530	0.2875	39,416	4,189	-35,227
12	2013	0	137,100	137,100	14,570	-122,530	0.2567	35,194	3,740	-31,454
13	2014	0	137,100	137,100	14,570	-122,530	0.2292	31,423	3,339	-28,084
14	2015	0	137,100	137,100	14,570	-122,530	0.2046	28,051	2,981	-25,070
15	2016	0	137,100	137,100	14,570	-122,530	0.1827	25,048	2,662	-22,386
16	2017	0	137,100	137,100	14,570	-122,530	0.1631	22,361	2,376	-19,985
17	2018	0	137,100	137,100	14,570	-122,530	0.1456	19,962	2,121	-17,841
18	2019	0	137,100	137,100	14,570	-122,530	0.1300	17,823	1,894	-15,929
19	2020	0	137,100	137,100	14,570	-122,530	0.1161	15,917	1,692	-14,225
20	2021		137,100	137,100	14,570	-122,530	0.1037	14,217	1,511	-12,706
21	2022		137,100	137,100	14,570	-122,530	0.0926	12,695	1,349	-11,346
22	2023		137,100	137,100	14,570	-122,530	0.0826	11,324	1,203	-10,121
23	2024		137,100	137,100	14,570	-122,530	0.0738	10,118	1,075	-9,043
24	2025		137,100	137,100	14,570	-122,530	0.0659	9,035	960	-8,075
25	2026		137,100	137,100	14,570	-122,530	0.0588	8,061	857	-7,204
26	2027		137,100	137,100	14,570	-122,530	0.0525	7,198	765	-6,433
27	2028		137,100	137,100	14,570	-122,530	0.0469	6,430	683	-5,747
28	2029		137,100	137,100	14,570	-122,530	0.0419	5,744	610	-5,134
29	2030		137,100	137,100	14,570	-122,530	0.0374	5,128	545	-4,583
30	2031		137,100	137,100	14,570	-122,530	0.0334	4,579	487	-4,092
31	2032		137,100	137,100	14,570	-122,530	0.0298	4,086	434	-3,652
32	2033		137,100	137,100	14,570	-122,530	0.0266	3,647	388	-3,259
33	2034		137,100	137,100	14,570	-122,530	0.0238	3,263	347	-2,916
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		3,009,000	4,113,000	7,122,000	437,100	-6,684,900		3,195,168	83,536	-3,111,632

N.P.V=	-3,111,632
B/C=	0.03
FIRR=	#DIV/0!

Table L-23-3 Rural road improvement (Financial Analysis) (K8-28 Zeras)

(1,000RIs.)

							I = 12%			
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V	
1	2002	1,201,966	0	1,201,966	0	-1,201,966	0.8929	1,073,235	0	-1,073,235
2	2003	1,201,967	0	1,201,967	0	-1,201,967	0.7972	958,208	0	-958,208
3	2004	1,201,967	0	1,201,967	0	-1,201,967	0.7118	855,560	0	-855,560
4	2005	0	142,900	142,900	1,125,140	982,240	0.6355	90,813	715,026	624,213
5	2006	0	142,900	142,900	1,125,140	982,240	0.5674	81,081	638,404	557,323
6	2007	0	142,900	142,900	1,125,140	982,240	0.5066	72,393	569,996	497,603
7	2008	0	142,900	142,900	1,125,140	982,240	0.4523	64,634	508,901	444,267
8	2009	0	142,900	142,900	1,125,140	982,240	0.4039	57,717	454,444	396,727
9	2010	0	142,900	142,900	1,125,140	982,240	0.3606	51,530	405,725	354,195
10	2011	0	142,900	142,900	1,125,140	982,240	0.3220	46,014	362,295	316,281
11	2012	0	142,900	142,900	1,125,140	982,240	0.2875	41,084	323,478	282,394
12	2013	0	142,900	142,900	1,125,140	982,240	0.2567	36,682	288,823	252,141
13	2014	0	142,900	142,900	1,125,140	982,240	0.2292	32,753	257,882	225,129
14	2015	0	142,900	142,900	1,125,140	982,240	0.2046	29,237	230,204	200,967
15	2016	0	142,900	142,900	1,125,140	982,240	0.1827	26,108	205,563	179,455
16	2017	0	142,900	142,900	1,125,140	982,240	0.1631	23,307	183,510	160,203
17	2018	0	142,900	142,900	1,125,140	982,240	0.1456	20,806	163,820	143,014
18	2019	0	142,900	142,900	1,125,140	982,240	0.1300	18,577	146,268	127,691
19	2020	0	142,900	142,900	1,125,140	982,240	0.1161	16,591	130,629	114,038
20	2021		142,900	142,900	1,125,140	982,240	0.1037	14,819	116,677	101,858
21	2022		142,900	142,900	1,125,140	982,240	0.0926	13,233	104,188	90,955
22	2023		142,900	142,900	1,125,140	982,240	0.0826	11,804	92,937	81,133
23	2024		142,900	142,900	1,125,140	982,240	0.0738	10,546	83,035	72,489
24	2025		142,900	142,900	1,125,140	982,240	0.0659	9,417	74,147	64,730
25	2026		142,900	142,900	1,125,140	982,240	0.0588	8,403	66,158	57,755
26	2027		142,900	142,900	1,125,140	982,240	0.0525	7,502	59,070	51,568
27	2028		142,900	142,900	1,125,140	982,240	0.0469	6,702	52,769	46,067
28	2029		142,900	142,900	1,125,140	982,240	0.0419	5,988	47,143	41,155
29	2030		142,900	142,900	1,125,140	982,240	0.0374	5,344	42,080	36,736
30	2031		142,900	142,900	1,125,140	982,240	0.0334	4,773	37,580	32,807
31	2032		142,900	142,900	1,125,140	982,240	0.0298	4,258	33,529	29,271
32	2033		142,900	142,900	1,125,140	982,240	0.0266	3,801	29,929	26,128
33	2034		142,900	142,900	1,125,140	982,240	0.0238	3,401	26,778	23,377
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		3,605,900	4,287,000	7,892,900	33,754,200	25,861,300		3,706,321	6,450,988	2,744,667

N.P.V=	2,744,667
B/C=	1.74
FIRR=	22.0%

Table L-23-4 Establishment of cooperative (Financial Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	37,113	0	37,113	0	-37,113	0.8929	33,138	0	-33,138
2	2003	37,111	0	37,111	0	-37,111	0.7972	29,585	0	-29,585
3	2004	37,111	0	37,111	0	-37,111	0.7118	26,416	0	-26,416
4	2005	37,111	140,560	177,671	240,000	62,329	0.6355	112,910	152,520	39,610
5	2006	37,111	140,560	177,671	240,000	62,329	0.5674	100,811	136,176	35,365
6	2007	37,111	140,560	177,671	240,000	62,329	0.5066	90,008	121,584	31,576
7	2008	37,111	140,560	177,671	240,000	62,329	0.4523	80,361	108,552	28,191
8	2009	37,111	140,560	177,671	240,000	62,329	0.4039	71,761	96,936	25,175
9	2010	37,111	140,560	177,671	240,000	62,329	0.3606	64,068	86,544	22,476
10	2011	37,111	140,560	177,671	240,000	62,329	0.3220	57,210	77,280	20,070
11	2012	37,111	140,560	177,671	240,000	62,329	0.2875	51,080	69,000	17,920
12	2013	37,111	140,560	177,671	240,000	62,329	0.2567	45,608	61,608	16,000
13	2014	37,111	140,560	177,671	240,000	62,329	0.2292	40,722	55,008	14,286
14	2015	37,111	140,560	177,671	240,000	62,329	0.2046	36,351	49,104	12,753
15	2016	37,111	140,560	177,671	240,000	62,329	0.1827	32,460	43,848	11,388
16	2017	37,111	140,560	177,671	240,000	62,329	0.1631	28,978	39,144	10,166
17	2018	37,111	140,560	177,671	240,000	62,329	0.1456	25,869	34,944	9,075
18	2019	37,111	140,560	177,671	240,000	62,329	0.1300	23,097	31,200	8,103
19	2020	0	140,560	140,560	240,000	99,440	0.1161	16,319	27,864	11,545
20	2021		140,560	140,560	240,000	99,440	0.1037	14,576	24,888	10,312
21	2022		140,560	140,560	240,000	99,440	0.0926	13,016	22,224	9,208
22	2023		140,560	140,560	240,000	99,440	0.0826	11,610	19,824	8,214
23	2024		140,560	140,560	240,000	99,440	0.0738	10,373	17,712	7,339
24	2025		140,560	140,560	240,000	99,440	0.0659	9,263	15,816	6,553
25	2026		140,560	140,560	240,000	99,440	0.0588	8,265	14,112	5,847
26	2027		140,560	140,560	240,000	99,440	0.0525	7,379	12,600	5,221
27	2028		140,560	140,560	240,000	99,440	0.0469	6,592	11,256	4,664
28	2029		140,560	140,560	240,000	99,440	0.0419	5,889	10,056	4,167
29	2030		140,560	140,560	240,000	99,440	0.0374	5,257	8,976	3,719
30	2031		140,560	140,560	240,000	99,440	0.0334	4,695	8,016	3,321
31	2032		140,560	140,560	240,000	99,440	0.0298	4,189	7,152	2,963
32	2033		140,560	140,560	240,000	99,440	0.0266	3,739	6,384	2,645
33	2034		140,560	140,560	240,000	99,440	0.0238	3,345	5,712	2,367
34	2035		140,560	140,560	240,000	99,440	0.0212	2,980	5,088	2,108
35	2036		140,560	140,560	240,000	99,440	0.0189	2,657	4,536	1,879
36	2037		140,560	140,560	240,000	99,440	0.0169	2,375	4,056	1,681
37	2038		140,560	140,560	240,000	99,440	0.0151	2,122	3,624	1,502
38	2039		140,560	140,560	240,000	99,440	0.0135	1,898	3,240	1,342
39	2040		140,560	140,560	240,000	99,440	0.0120	1,687	2,880	1,193
40	2041		140,560	140,560	240,000	99,440	0.0107	1,504	2,568	1,064
41	2042		140,560	140,560	240,000	99,440	0.0096	1,349	2,304	955
42	2043		140,560	140,560	240,000	99,440	0.0086	1,209	2,064	855
43	2044		140,560	140,560	240,000	99,440	0.0076	1,068	1,824	756
44	2045		140,560	140,560	240,000	99,440	0.0068	956	1,632	676
45	2046		140,560	140,560	240,000	99,440	0.0061	857	1,464	607
46	2047		140,560	140,560	240,000	99,440	0.0054	759	1,296	537
47	2048		140,560	140,560	240,000	99,440	0.0049	689	1,176	487
48	2049		140,560	140,560	240,000	99,440	0.0043	604	1,032	428
		668,000	6,325,200	6,993,200	10,800,000	3,806,800		1,097,654	1,414,824	317,170

N.P.V=	317,170
B/C=	1.29
FIRR=	39.0%

Table L-23-5 Financial Evaluation of the Proposed Projects (Grand Total) (K8-28 Zeras)

(1,000Rls.)

Year	Total cost	Total benefit	Net Benefit	I = 12%			
				Discount Rate	Cost	Benefit	N.P.V
1	2,307,960	0	-2,307,960	0.8929	2,060,777	0	-2,060,777
2	2,307,959	0	-2,307,959	0.7972	1,839,905	0	-1,839,905
3	2,307,959	0	-2,307,959	0.7118	1,642,805	0	-1,642,805
4	1,321,012	2,401,710	1,080,698	0.6355	839,503	1,526,287	686,784
5	1,321,012	2,401,710	1,080,698	0.5674	749,542	1,362,730	613,188
6	1,255,132	2,401,710	1,146,578	0.5066	635,850	1,216,706	580,856
7	1,255,132	2,401,710	1,146,578	0.4523	567,696	1,086,293	518,597
8	1,255,132	2,401,710	1,146,578	0.4039	506,948	970,051	463,103
9	1,255,132	2,401,710	1,146,578	0.3606	452,601	866,057	413,456
10	1,255,132	2,401,710	1,146,578	0.3220	404,153	773,351	369,198
11	1,255,132	2,401,710	1,146,578	0.2875	360,850	690,492	329,642
12	1,255,132	2,401,710	1,146,578	0.2567	322,192	616,519	294,327
13	1,255,132	2,401,710	1,146,578	0.2292	287,676	550,472	262,796
14	1,255,132	2,401,710	1,146,578	0.2046	256,800	491,390	234,590
15	1,255,132	2,401,710	1,146,578	0.1827	229,313	438,792	209,479
16	1,255,132	2,401,710	1,146,578	0.1631	204,712	391,719	187,007
17	1,255,132	2,401,710	1,146,578	0.1456	182,747	349,689	166,942
18	1,255,132	2,401,710	1,146,578	0.1300	163,167	312,222	149,055
19	1,218,020	2,401,710	1,183,690	0.1161	141,412	278,839	137,427
20	1,218,020	2,401,710	1,183,690	0.1037	126,309	249,057	122,748
21	1,218,020	2,401,710	1,183,690	0.0926	112,789	222,398	109,609
22	1,218,020	2,401,710	1,183,690	0.0826	100,608	198,381	97,773
23	1,218,020	2,401,710	1,183,690	0.0738	89,890	177,246	87,356
24	1,218,020	2,401,710	1,183,690	0.0659	80,268	158,273	78,005
25	1,218,020	2,401,710	1,183,690	0.0588	71,620	141,221	69,601
26	1,218,020	2,401,710	1,183,690	0.0525	63,946	126,090	62,144
27	1,218,020	2,401,710	1,183,690	0.0469	57,125	112,640	55,515
28	1,218,020	2,401,710	1,183,690	0.0419	51,035	100,632	49,597
29	1,218,020	2,401,710	1,183,690	0.0374	45,554	89,824	44,270
30	1,218,020	2,401,710	1,183,690	0.0334	40,682	80,217	39,535
31	1,218,020	2,401,710	1,183,690	0.0298	36,297	71,571	35,274
32	1,218,020	2,401,710	1,183,690	0.0266	32,399	63,885	31,486
33	1,218,020	2,401,710	1,183,690	0.0238	28,989	57,161	28,172
34	1,218,020	2,401,710	1,183,690	0.0212	25,822	50,916	25,094
35	1,218,020	2,401,710	1,183,690	0.0189	23,021	45,392	22,371
36	1,218,020	2,401,710	1,183,690	0.0169	20,585	40,589	20,004
37	1,218,020	2,401,710	1,183,690	0.0151	18,392	36,266	17,874
38	1,218,020	2,401,710	1,183,690	0.0135	16,443	32,423	15,980
39	1,218,020	2,401,710	1,183,690	0.0120	14,616	28,821	14,205
40	1,218,020	2,401,710	1,183,690	0.0107	13,033	25,698	12,665
41	1,218,020	2,401,710	1,183,690	0.0096	11,693	23,056	11,363
42	1,218,020	2,401,710	1,183,690	0.0086	10,475	20,655	10,180
43	1,218,020	2,401,710	1,183,690	0.0076	9,257	18,253	8,996
44	1,218,020	2,401,710	1,183,690	0.0068	8,283	16,332	8,049
45	1,218,020	2,401,710	1,183,690	0.0061	7,430	14,650	7,220
46	1,218,020	2,401,710	1,183,690	0.0054	6,577	12,969	6,392
47	1,218,020	2,401,710	1,183,690	0.0049	5,968	11,768	5,800
48	1,218,020	2,401,710	1,183,690	0.0043	5,237	10,327	5,090
62,423,218					12,982,992	14,158,320	1,175,328

N.P.V=	1,175,328
B/C=	1.09
EIRR=	14.2%

Table L-23-6 Construction of check dam (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	234,625	0	234,625	0	-234,625	0.8929	209,497	0	-209,497
2	2003	234,625	0	234,625	0	-234,625	0.7972	187,043	0	-187,043
3	2004	234,625	0	234,625	0	-234,625	0.7118	167,006	0	-167,006
4	2005	234,625	18,300	252,925	470,490	217,565	0.6355	160,734	298,996	138,262
5	2006	234,625	18,300	252,925	470,490	217,565	0.5674	143,510	266,956	123,446
6	2007	234,625	18,300	252,925	470,490	217,565	0.5066	128,132	238,350	110,218
7	2008	234,625	18,300	252,925	470,490	217,565	0.4523	114,398	212,803	98,405
8	2009	234,625	18,300	252,925	470,490	217,565	0.4039	102,156	190,031	87,875
9	2010	0	18,300	18,300	470,490	452,190	0.3606	6,599	169,659	163,060
10	2011	0	18,300	18,300	470,490	452,190	0.3220	5,893	151,498	145,605
11	2012	0	18,300	18,300	470,490	452,190	0.2875	5,261	135,266	130,005
12	2013	0	18,300	18,300	470,490	452,190	0.2567	4,698	120,775	116,077
13	2014	0	18,300	18,300	470,490	452,190	0.2292	4,194	107,836	103,642
14	2015	0	18,300	18,300	470,490	452,190	0.2046	3,744	96,262	92,518
15	2016	0	18,300	18,300	470,490	452,190	0.1827	3,343	85,959	82,616
16	2017	0	18,300	18,300	470,490	452,190	0.1631	2,985	76,737	73,752
17	2018	0	18,300	18,300	470,490	452,190	0.1456	2,664	68,503	65,839
18	2019	0	18,300	18,300	470,490	452,190	0.1300	2,379	61,164	58,785
19	2020	0	18,300	18,300	470,490	452,190	0.1161	2,125	54,624	52,499
20	2021		18,300	18,300	470,490	452,190	0.1037	1,898	48,790	46,892
21	2022		18,300	18,300	470,490	452,190	0.0926	1,695	43,567	41,872
22	2023		18,300	18,300	470,490	452,190	0.0826	1,512	38,862	37,350
23	2024		18,300	18,300	470,490	452,190	0.0738	1,351	34,722	33,371
24	2025		18,300	18,300	470,490	452,190	0.0659	1,206	31,005	29,799
25	2026		18,300	18,300	470,490	452,190	0.0588	1,076	27,665	26,589
26	2027		18,300	18,300	470,490	452,190	0.0525	961	24,701	23,740
27	2028		18,300	18,300	470,490	452,190	0.0469	858	22,066	21,208
28	2029		18,300	18,300	470,490	452,190	0.0419	767	19,714	18,947
29	2030		18,300	18,300	470,490	452,190	0.0374	684	17,596	16,912
30	2031		18,300	18,300	470,490	452,190	0.0334	611	15,714	15,103
31	2032		18,300	18,300	470,490	452,190	0.0298	545	14,021	13,476
32	2033		18,300	18,300	470,490	452,190	0.0266	487	12,515	12,028
33	2034		18,300	18,300	470,490	452,190	0.0238	436	11,198	10,762
34	2035		18,300	18,300	470,490	452,190	0.0212	388	9,974	9,586
35	2036		18,300	18,300	470,490	452,190	0.0189	346	8,892	8,546
36	2037		18,300	18,300	470,490	452,190	0.0169	309	7,951	7,642
37	2038		18,300	18,300	470,490	452,190	0.0151	276	7,104	6,828
38	2039		18,300	18,300	470,490	452,190	0.0135	247	6,352	6,105
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		1,877,000	640,500	2,517,500	16,467,150	13,949,650		1,272,014	2,737,828	1,465,814

N.P.V=	1,465,814
B/C=	2.15
EIRR=	30.0%

Table L-23-7 Relocation of houses (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%			
						Discount Rate	Cost	Benefit	N.P.V
1 2002	0	0	0	0	0	0.8929	0	0	0
2 2003	0	0	0	0	0	0.7972	0	0	0
3 2004	0	0	0	0	0	0.7118	0	0	0
4 2005	537,600	0	537,600	0	-537,600	0.6355	341,645	0	-341,645
5 2006	537,600	0	537,600	0	-537,600	0.5674	305,034	0	-305,034
6 2007	537,600	0	537,600	0	-537,600	0.5066	272,348	0	-272,348
7 2008	537,600	31,400	569,000	547,330	-21,670	0.4523	257,359	247,557	-9,802
8 2009	537,600	31,400	569,000	547,330	-21,670	0.4039	229,819	221,067	-8,752
9 2010	0	31,400	31,400	547,330	515,930	0.3606	11,323	197,367	186,044
10 2011	0	31,400	31,400	547,330	515,930	0.3220	10,111	176,240	166,129
11 2012	0	31,400	31,400	547,330	515,930	0.2875	9,028	157,357	148,329
12 2013	0	31,400	31,400	547,330	515,930	0.2567	8,060	140,500	132,440
13 2014	0	31,400	31,400	547,330	515,930	0.2292	7,197	125,448	118,251
14 2015	0	31,400	31,400	547,330	515,930	0.2046	6,424	111,984	105,560
15 2016	0	31,400	31,400	547,330	515,930	0.1827	5,737	99,997	94,260
16 2017	0	31,400	31,400	547,330	515,930	0.1631	5,121	89,270	84,149
17 2018	0	31,400	31,400	547,330	515,930	0.1456	4,572	79,691	75,119
18 2019	0	31,400	31,400	547,330	515,930	0.1300	4,082	71,153	67,071
19 2020	0	31,400	31,400	547,330	515,930	0.1161	3,646	63,545	59,899
20 2021		31,400	31,400	547,330	515,930	0.1037	3,256	56,758	53,502
21 2022		31,400	31,400	547,330	515,930	0.0926	2,908	50,683	47,775
22 2023		31,400	31,400	547,330	515,930	0.0826	2,594	45,209	42,615
23 2024		31,400	31,400	547,330	515,930	0.0738	2,317	40,393	38,076
24 2025		31,400	31,400	547,330	515,930	0.0659	2,069	36,069	34,000
25 2026		31,400	31,400	547,330	515,930	0.0588	1,846	32,183	30,337
26 2027		31,400	31,400	547,330	515,930	0.0525	1,649	28,735	27,086
27 2028		31,400	31,400	547,330	515,930	0.0469	1,473	25,670	24,197
28 2029		31,400	31,400	547,330	515,930	0.0419	1,316	22,933	21,617
29 2030		31,400	31,400	547,330	515,930	0.0374	1,174	20,470	19,296
30 2031		31,400	31,400	547,330	515,930	0.0334	1,049	18,281	17,232
31 2032		31,400	31,400	547,330	515,930	0.0298	936	16,310	15,374
32 2033		31,400	31,400	547,330	515,930	0.0266	835	14,559	13,724
33 2034		31,400	31,400	547,330	515,930	0.0238	747	13,026	12,279
34 2035		31,400	31,400	547,330	515,930	0.0212	666	11,603	10,937
35 2036		31,400	31,400	547,330	515,930	0.0189	593	10,345	9,752
36 2037		31,400	31,400	547,330	515,930	0.0169	531	9,250	8,719
37 2038		31,400	31,400	547,330	515,930	0.0151	474	8,265	7,791
38 2039		31,400	31,400	547,330	515,930	0.0135	424	7,389	6,965
39 2040									
40 2041									
41 2042									
42 2043									
43 2044									
44 2045									
45 2046									
46 2047									
47 2048									
48 2049									
2,688,000		1,004,800	3,692,800	17,514,560	13,821,760		1,508,363	2,249,307	740,944

N.P.V=	740,944
B/C=	1.49
EIRR=	18.6%

Table L-23-8 Landslide Protection (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1 2002	19,000	0	19,000	0	-19,000	0.8929	16,965	0	-16,965	
2 2003	19,000	0	19,000	0	-19,000	0.7972	15,147	0	-15,147	
3 2004	19,000	12,300	31,300	0	-31,300	0.7118	22,279	0	-22,279	
4 2005	0	12,300	12,300	4,850	-7,450	0.6355	7,817	3,082	-4,735	
5 2006	0	12,300	12,300	4,850	-7,450	0.5674	6,979	2,752	-4,227	
6 2007	0	12,300	12,300	4,850	-7,450	0.5066	6,231	2,457	-3,774	
7 2008	0	12,300	12,300	4,850	-7,450	0.4523	5,563	2,194	-3,369	
8 2009	0	12,300	12,300	4,850	-7,450	0.4039	4,968	1,959	-3,009	
9 2010	0	12,300	12,300	4,850	-7,450	0.3606	4,435	1,749	-2,686	
10 2011	0	12,300	12,300	4,850	-7,450	0.3220	3,961	1,562	-2,399	
11 2012	0	12,300	12,300	4,850	-7,450	0.2875	3,536	1,394	-2,142	
12 2013	0	12,300	12,300	4,850	-7,450	0.2567	3,157	1,245	-1,912	
13 2014	0	12,300	12,300	4,850	-7,450	0.2292	2,819	1,112	-1,707	
14 2015	0	12,300	12,300	4,850	-7,450	0.2046	2,517	992	-1,525	
15 2016	0	12,300	12,300	4,850	-7,450	0.1827	2,247	886	-1,361	
16 2017	0	12,300	12,300	4,850	-7,450	0.1631	2,006	791	-1,215	
17 2018	0	12,300	12,300	4,850	-7,450	0.1456	1,791	706	-1,085	
18 2019	0	12,300	12,300	4,850	-7,450	0.1300	1,599	631	-968	
19 2020	0	12,300	12,300	4,850	-7,450	0.1161	1,428	563	-865	
20 2021		12,300	12,300	4,850	-7,450	0.1037	1,276	503	-773	
21 2022		12,300	12,300	4,850	-7,450	0.0926	1,139	449	-690	
22 2023		12,300	12,300	4,850	-7,450	0.0826	1,016	401	-615	
23 2024		12,300	12,300	4,850	-7,450	0.0738	908	358	-550	
24 2025		12,300	12,300	4,850	-7,450	0.0659	811	320	-491	
25 2026		12,300	12,300	4,850	-7,450	0.0588	723	285	-438	
26 2027		12,300	12,300	4,850	-7,450	0.0525	646	255	-391	
27 2028		12,300	12,300	4,850	-7,450	0.0469	577	227	-350	
28 2029		12,300	12,300	4,850	-7,450	0.0419	515	203	-312	
29 2030		12,300	12,300	4,850	-7,450	0.0374	460	181	-279	
30 2031		12,300	12,300	4,850	-7,450	0.0334	411	162	-249	
31 2032		12,300	12,300	4,850	-7,450	0.0298	367	145	-222	
32 2033		12,300	12,300	4,850	-7,450	0.0266	327	129	-198	
33 2034		12,300	12,300	4,850	-7,450	0.0238	293	115	-178	
34 2035										
35 2036										
36 2037										
37 2038										
38 2039										
39 2040										
40 2041										
41 2042										
42 2043										
43 2044										
44 2045										
45 2046										
46 2047										
47 2048										
48 2049										
		57,000	381,300	438,300	145,500	-292,800	124,914	27,808	-97,106	

N.P.V=	-97,106
B/C=	0.22
EIRR=	#DIV/0!

Table L-23-9 Soil erosion protection (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Table B-25. Benefit-Cost Ratio (Economic Analysis) (Rs. 25 Lakhs)							I = 12%			
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V	
1	2002	199,504	0	199,504	0	-199,504	0.8929	178,137	0	-178,137
2	2003	199,508	0	199,508	0	-199,508	0.7972	159,048	0	-159,048
3	2004	199,508	0	199,508	0	-199,508	0.7118	142,010	0	-142,010
4	2005	199,508	116,500	316,008	456,460	140,452	0.6355	200,823	290,080	89,257
5	2006	199,508	116,500	316,008	456,460	140,452	0.5674	179,303	258,995	79,692
6	2007	199,508	116,500	316,008	456,460	140,452	0.5066	160,090	231,243	71,153
7	2008	199,508	116,500	316,008	456,460	140,452	0.4523	142,930	206,457	63,527
8	2009	199,508	116,500	316,008	456,460	140,452	0.4039	127,636	184,364	56,728
9	2010	199,508	116,500	316,008	456,460	140,452	0.3606	113,952	164,599	50,647
10	2011	199,508	116,500	316,008	456,460	140,452	0.3220	101,755	146,980	45,225
11	2012	199,508	116,500	316,008	456,460	140,452	0.2875	90,852	131,232	40,380
12	2013	199,508	116,500	316,008	456,460	140,452	0.2567	81,119	117,173	36,054
13	2014	199,508	116,500	316,008	456,460	140,452	0.2292	72,429	104,621	32,192
14	2015	0	116,500	116,500	456,460	339,960	0.2046	23,836	93,392	69,556
15	2016	0	116,500	116,500	456,460	339,960	0.1827	21,285	83,395	62,110
16	2017	0	116,500	116,500	456,460	339,960	0.1631	19,001	74,449	55,448
17	2018	0	116,500	116,500	456,460	339,960	0.1456	16,962	66,461	49,499
18	2019	0	116,500	116,500	456,460	339,960	0.1300	15,145	59,340	44,195
19	2020	0	116,500	116,500	456,460	339,960	0.1161	13,526	52,995	39,469
20	2021		116,500	116,500	456,460	339,960	0.1037	12,081	47,335	35,254
21	2022		116,500	116,500	456,460	339,960	0.0926	10,788	42,268	31,480
22	2023		116,500	116,500	456,460	339,960	0.0826	9,623	37,704	28,081
23	2024		116,500	116,500	456,460	339,960	0.0738	8,598	33,687	25,089
24	2025		116,500	116,500	456,460	339,960	0.0659	7,677	30,081	22,404
25	2026		116,500	116,500	456,460	339,960	0.0588	6,850	26,840	19,990
26	2027		116,500	116,500	456,460	339,960	0.0525	6,116	23,964	17,848
27	2028		116,500	116,500	456,460	339,960	0.0469	5,464	21,408	15,944
28	2029		116,500	116,500	456,460	339,960	0.0419	4,881	19,126	14,245
29	2030		116,500	116,500	456,460	339,960	0.0374	4,357	17,072	12,715
30	2031		116,500	116,500	456,460	339,960	0.0334	3,891	15,246	11,355
31	2032		116,500	116,500	456,460	339,960	0.0298	3,472	13,603	10,131
32	2033		116,500	116,500	456,460	339,960	0.0266	3,099	12,142	9,043
33	2034		116,500	116,500	456,460	339,960	0.0238	2,773	10,864	8,091
34	2035		116,500	116,500	456,460	339,960	0.0212	2,470	9,677	7,207
35	2036		116,500	116,500	456,460	339,960	0.0189	2,202	8,627	6,425
36	2037		116,500	116,500	456,460	339,960	0.0169	1,969	7,714	5,745
37	2038		116,500	116,500	456,460	339,960	0.0151	1,759	6,893	5,134
38	2039		116,500	116,500	456,460	339,960	0.0135	1,573	6,162	4,589
39	2040		116,500	116,500	456,460	339,960	0.0120	1,398	5,478	4,080
40	2041		116,500	116,500	456,460	339,960	0.0107	1,247	4,884	3,637
41	2042		116,500	116,500	456,460	339,960	0.0096	1,118	4,382	3,264
42	2043		116,500	116,500	456,460	339,960	0.0086	1,002	3,926	2,924
43	2044		116,500	116,500	456,460	339,960	0.0076	885	3,469	2,584
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		2,593,600	4,660,000	7,253,600	18,258,400	11,004,800		1,965,132	2,678,328	713,196

N.P.V=	713,196
B/C=	1.36
EIRR=	22.4%

Table L-23-10 Rangeland vegetation improvement (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1 2002	1,050	0	1,050	0	-1,050	0.8929	938	0	-938	
2 2003	1,050	0	1,050	0	-1,050	0.7972	837	0	-837	
3 2004	1,050	0	1,050	0	-1,050	0.7118	747	0	-747	
4 2005	1,050	6,400	7,450	113,030	105,580	0.6355	4,734	71,831	67,097	
5 2006	1,050	6,400	7,450	113,030	105,580	0.5674	4,227	64,133	59,906	
6 2007	1,050	6,400	7,450	113,030	105,580	0.5066	3,774	57,261	53,487	
7 2008	1,050	6,400	7,450	113,030	105,580	0.4523	3,370	51,123	47,753	
8 2009	1,050	6,400	7,450	113,030	105,580	0.4039	3,009	45,653	42,644	
9 2010	1,050	6,400	7,450	113,030	105,580	0.3606	2,686	40,759	38,073	
10 2011	1,050	6,400	7,450	113,030	105,580	0.3220	2,399	36,396	33,997	
11 2012	0	6,400	6,400	113,030	106,630	0.2875	1,840	32,496	30,656	
12 2013	0	6,400	6,400	113,030	106,630	0.2567	1,643	29,015	27,372	
13 2014	0	6,400	6,400	113,030	106,630	0.2292	1,467	25,906	24,439	
14 2015	0	6,400	6,400	113,030	106,630	0.2046	1,309	23,126	21,817	
15 2016	0	6,400	6,400	113,030	106,630	0.1827	1,169	20,651	19,482	
16 2017	0	6,400	6,400	113,030	106,630	0.1631	1,044	18,435	17,391	
17 2018	0	6,400	6,400	113,030	106,630	0.1456	932	16,457	15,525	
18 2019	0	6,400	6,400	113,030	106,630	0.1300	832	14,694	13,862	
19 2020	0	6,400	6,400	113,030	106,630	0.1161	743	13,123	12,380	
20 2021		6,400	6,400	113,030	106,630	0.1037	664	11,721	11,057	
21 2022		6,400	6,400	113,030	106,630	0.0926	593	10,467	9,874	
22 2023		6,400	6,400	113,030	106,630	0.0826	529	9,336	8,807	
23 2024		6,400	6,400	113,030	106,630	0.0738	472	8,342	7,870	
24 2025		6,400	6,400	113,030	106,630	0.0659	422	7,449	7,027	
25 2026		6,400	6,400	113,030	106,630	0.0588	376	6,646	6,270	
26 2027		6,400	6,400	113,030	106,630	0.0525	336	5,934	5,598	
27 2028		6,400	6,400	113,030	106,630	0.0469	300	5,301	5,001	
28 2029		6,400	6,400	113,030	106,630	0.0419	268	4,736	4,468	
29 2030		6,400	6,400	113,030	106,630	0.0374	239	4,227	3,988	
30 2031		6,400	6,400	113,030	106,630	0.0334	214	3,775	3,561	
31 2032		6,400	6,400	113,030	106,630	0.0298	191	3,368	3,177	
32 2033		6,400	6,400	113,030	106,630	0.0266	170	3,007	2,837	
33 2034		6,400	6,400	113,030	106,630	0.0238	152	2,690	2,538	
34 2035		6,400	6,400	113,030	106,630	0.0212	136	2,396	2,260	
35 2036		6,400	6,400	113,030	106,630	0.0189	121	2,136	2,015	
36 2037		6,400	6,400	113,030	106,630	0.0169	108	1,910	1,802	
37 2038		6,400	6,400	113,030	106,630	0.0151	97	1,707	1,610	
38 2039		6,400	6,400	113,030	106,630	0.0135	86	1,526	1,440	
39 2040		6,400	6,400	113,030	106,630	0.0120	77	1,356	1,279	
40 2041		6,400	6,400	113,030	106,630	0.0107	68	1,209	1,141	
41 2042										
42 2043										
43 2044										
44 2045										
45 2046										
46 2047										
47 2048										
48 2049										
		10,500	236,800	247,300	4,182,110	3,934,810		43,319	660,298	616,979

N.P.V=	616,979
B/C=	15.24
EIRR=	366.5%

Table L-23-11 Milk Processing and Marketing (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	61,960	0	61,960	0	-61,960	0.8929	55,324	0	-55,324
2	2003	61,960	0	61,960	0	-61,960	0.7972	49,395	0	-49,395
3	2004	61,960	0	61,960	0	-61,960	0.7118	44,103	0	-44,103
4	2005	61,960	719,180	781,140	960,680	179,540	0.6355	496,414	610,512	114,098
5	2006	61,960	719,180	781,140	960,680	179,540	0.5674	443,219	545,090	101,871
6	2007	0	719,180	719,180	960,680	241,500	0.5066	364,337	486,680	122,343
7	2008	0	719,180	719,180	960,680	241,500	0.4523	325,285	434,516	109,231
8	2009	0	719,180	719,180	960,680	241,500	0.4039	290,477	388,019	97,542
9	2010	0	719,180	719,180	960,680	241,500	0.3606	259,336	346,421	87,085
10	2011	0	719,180	719,180	960,680	241,500	0.3220	231,576	309,339	77,763
11	2012	0	719,180	719,180	960,680	241,500	0.2875	206,764	276,196	69,432
12	2013	0	719,180	719,180	960,680	241,500	0.2567	184,614	246,607	61,993
13	2014	0	719,180	719,180	960,680	241,500	0.2292	164,836	220,188	55,352
14	2015	0	719,180	719,180	960,680	241,500	0.2046	147,144	196,555	49,411
15	2016	0	719,180	719,180	960,680	241,500	0.1827	131,394	175,516	44,122
16	2017	0	719,180	719,180	960,680	241,500	0.1631	117,298	156,687	39,389
17	2018	0	719,180	719,180	960,680	241,500	0.1456	104,713	139,875	35,162
18	2019	0	719,180	719,180	960,680	241,500	0.1300	93,493	124,888	31,395
19	2020	0	719,180	719,180	960,680	241,500	0.1161	83,497	111,535	28,038
20	2021		719,180	719,180	960,680	241,500	0.1037	74,579	99,623	25,044
21	2022		719,180	719,180	960,680	241,500	0.0926	66,596	88,959	22,363
22	2023		719,180	719,180	960,680	241,500	0.0826	59,404	79,352	19,948
23	2024		719,180	719,180	960,680	241,500	0.0738	53,075	70,898	17,823
24	2025		719,180	719,180	960,680	241,500	0.0659	47,394	63,309	15,915
25	2026		719,180	719,180	960,680	241,500	0.0588	42,288	56,488	14,200
26	2027		719,180	719,180	960,680	241,500	0.0525	37,757	50,436	12,679
27	2028		719,180	719,180	960,680	241,500	0.0469	33,730	45,056	11,326
28	2029		719,180	719,180	960,680	241,500	0.0419	30,134	40,252	10,118
29	2030		719,180	719,180	960,680	241,500	0.0374	26,897	35,929	9,032
30	2031		719,180	719,180	960,680	241,500	0.0334	24,021	32,087	8,066
31	2032		719,180	719,180	960,680	241,500	0.0298	21,432	28,628	7,196
32	2033		719,180	719,180	960,680	241,500	0.0266	19,130	25,554	6,424
33	2034		719,180	719,180	960,680	241,500	0.0238	17,116	22,864	5,748
34	2035		719,180	719,180	960,680	241,500	0.0212	15,247	20,366	5,119
35	2036		719,180	719,180	960,680	241,500	0.0189	13,593	18,157	4,564
36	2037									
37	2038									
38	2039									
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		309,800	23,013,760	23,323,560	30,741,760	7,418,200		4,375,612	5,546,582	1,170,970

N.P.V=	1,170,970
B/C=	1.27
EIRR=	62.3%

Table L-23-12 Rural Water Supply Improvement (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Table 12.2: Rural Water Supply Improvement (Economic Analysis) (Rs. 20 Lakhs)							I = 12%			
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V	
1	2002	942,834	0	942,834	0	-942,834	0.8929	841,856	0	-841,856
2	2003	942,833	0	942,833	0	-942,833	0.7972	751,626	0	-751,626
3	2004	942,833	0	942,833	0	-942,833	0.7118	671,109	0	-671,109
4	2005	0	128,900	128,900	13,700	-115,200	0.6355	81,916	8,706	-73,210
5	2006	0	128,900	128,900	13,700	-115,200	0.5674	73,138	7,773	-65,365
6	2007	0	128,900	128,900	13,700	-115,200	0.5066	65,301	6,940	-58,361
7	2008	0	128,900	128,900	13,700	-115,200	0.4523	58,301	6,197	-52,104
8	2009	0	128,900	128,900	13,700	-115,200	0.4039	52,063	5,533	-46,530
9	2010	0	128,900	128,900	13,700	-115,200	0.3606	46,481	4,940	-41,541
10	2011	0	128,900	128,900	13,700	-115,200	0.3220	41,506	4,411	-37,095
11	2012	0	128,900	128,900	13,700	-115,200	0.2875	37,059	3,939	-33,120
12	2013	0	128,900	128,900	13,700	-115,200	0.2567	33,089	3,517	-29,572
13	2014	0	128,900	128,900	13,700	-115,200	0.2292	29,544	3,140	-26,404
14	2015	0	128,900	128,900	13,700	-115,200	0.2046	26,373	2,803	-23,570
15	2016	0	128,900	128,900	13,700	-115,200	0.1827	23,550	2,503	-21,047
16	2017	0	128,900	128,900	13,700	-115,200	0.1631	21,024	2,234	-18,790
17	2018	0	128,900	128,900	13,700	-115,200	0.1456	18,768	1,995	-16,773
18	2019	0	128,900	128,900	13,700	-115,200	0.1300	16,757	1,781	-14,976
19	2020	0	128,900	128,900	13,700	-115,200	0.1161	14,965	1,591	-13,374
20	2021		128,900	128,900	13,700	-115,200	0.1037	13,367	1,421	-11,946
21	2022		128,900	128,900	13,700	-115,200	0.0926	11,936	1,269	-10,667
22	2023		128,900	128,900	13,700	-115,200	0.0826	10,647	1,132	-9,515
23	2024		128,900	128,900	13,700	-115,200	0.0738	9,513	1,011	-8,502
24	2025		128,900	128,900	13,700	-115,200	0.0659	8,495	903	-7,592
25	2026		128,900	128,900	13,700	-115,200	0.0588	7,579	806	-6,773
26	2027		128,900	128,900	13,700	-115,200	0.0525	6,767	719	-6,048
27	2028		128,900	128,900	13,700	-115,200	0.0469	6,045	643	-5,402
28	2029		128,900	128,900	13,700	-115,200	0.0419	5,401	574	-4,827
29	2030		128,900	128,900	13,700	-115,200	0.0374	4,821	512	-4,309
30	2031		128,900	128,900	13,700	-115,200	0.0334	4,305	458	-3,847
31	2032		128,900	128,900	13,700	-115,200	0.0298	3,841	408	-3,433
32	2033		128,900	128,900	13,700	-115,200	0.0266	3,429	364	-3,065
33	2034		128,900	128,900	13,700	-115,200	0.0238	3,068	326	-2,742
34	2035									
35	2036									
36	2037									
37	2038									
38	2039									
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		2,828,500	3,867,000	6,695,500	411,000	-6,284,500		3,003,640	78,549	-2,925,091

N.P.V=	-2,925,091
B/C=	0.03
EIRR=	#DIV/0!

Table L-23-13 Rural road improvement (Economic Analysis) (K8-28 Zeras)

(1,000Rls.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	1,129,834	0	1,129,834	0	-1,129,834	0.8929	1,008,829	0	-1,008,829
2	2003	1,129,833	0	1,129,833	0	-1,129,833	0.7972	900,703	0	-900,703
3	2004	1,129,833	0	1,129,833	0	-1,129,833	0.7118	804,215	0	-804,215
4	2005	0	134,300	134,300	1,057,620	923,320	0.6355	85,348	672,118	586,770
5	2006	0	134,300	134,300	1,057,620	923,320	0.5674	76,202	600,094	523,892
6	2007	0	134,300	134,300	1,057,620	923,320	0.5066	68,036	535,790	467,754
7	2008	0	134,300	134,300	1,057,620	923,320	0.4523	60,744	478,362	417,618
8	2009	0	134,300	134,300	1,057,620	923,320	0.4039	54,244	427,173	372,929
9	2010	0	134,300	134,300	1,057,620	923,320	0.3606	48,429	381,378	332,949
10	2011	0	134,300	134,300	1,057,620	923,320	0.3220	43,245	340,554	297,309
11	2012	0	134,300	134,300	1,057,620	923,320	0.2875	38,611	304,066	265,455
12	2013	0	134,300	134,300	1,057,620	923,320	0.2567	34,475	271,491	237,016
13	2014	0	134,300	134,300	1,057,620	923,320	0.2292	30,782	242,407	211,625
14	2015	0	134,300	134,300	1,057,620	923,320	0.2046	27,478	216,389	188,911
15	2016	0	134,300	134,300	1,057,620	923,320	0.1827	24,537	193,227	168,690
16	2017	0	134,300	134,300	1,057,620	923,320	0.1631	21,904	172,498	150,594
17	2018	0	134,300	134,300	1,057,620	923,320	0.1456	19,554	153,989	134,435
18	2019	0	134,300	134,300	1,057,620	923,320	0.1300	17,459	137,491	120,032
19	2020	0	134,300	134,300	1,057,620	923,320	0.1161	15,592	122,790	107,198
20	2021		134,300	134,300	1,057,620	923,320	0.1037	13,927	109,675	95,748
21	2022		134,300	134,300	1,057,620	923,320	0.0926	12,436	97,936	85,500
22	2023		134,300	134,300	1,057,620	923,320	0.0826	11,093	87,359	76,266
23	2024		134,300	134,300	1,057,620	923,320	0.0738	9,911	78,052	68,141
24	2025		134,300	134,300	1,057,620	923,320	0.0659	8,850	69,697	60,847
25	2026		134,300	134,300	1,057,620	923,320	0.0588	7,897	62,188	54,291
26	2027		134,300	134,300	1,057,620	923,320	0.0525	7,051	55,525	48,474
27	2028		134,300	134,300	1,057,620	923,320	0.0469	6,299	49,602	43,303
28	2029		134,300	134,300	1,057,620	923,320	0.0419	5,627	44,314	38,687
29	2030		134,300	134,300	1,057,620	923,320	0.0374	5,023	39,555	34,532
30	2031		134,300	134,300	1,057,620	923,320	0.0334	4,486	35,325	30,839
31	2032		134,300	134,300	1,057,620	923,320	0.0298	4,002	31,517	27,515
32	2033		134,300	134,300	1,057,620	923,320	0.0266	3,572	28,133	24,561
33	2034		134,300	134,300	1,057,620	923,320	0.0238	3,196	25,171	21,975
34	2035									
35	2036									
36	2037									
37	2038									
38	2039									
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		3,389,500	4,029,000	7,418,500	31,728,600	24,310,100		3,483,757	6,063,866	2,580,109

N.P.V=	2,580,109
B/C=	1.74
EIRR=	22.0%

Table L-23-14 Establishment of cooperative (Economic Analysis) (K8-28 Zeras)

(1,000RIs.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	34,939	0	34,939	0	-34,939	0.8929	31,197	0	-31,197
2	2003	34,933	0	34,933	0	-34,933	0.7972	27,849	0	-27,849
3	2004	34,933	0	34,933	0	-34,933	0.7118	24,865	0	-24,865
4	2005	34,933	87,000	121,933	225,600	103,667	0.6355	77,488	143,369	65,881
5	2006	34,933	87,000	121,933	225,600	103,667	0.5674	69,185	128,005	58,820
6	2007	34,933	87,000	121,933	225,600	103,667	0.5066	61,771	114,289	52,518
7	2008	34,933	87,000	121,933	225,600	103,667	0.4523	55,150	102,039	46,889
8	2009	34,933	87,000	121,933	225,600	103,667	0.4039	49,249	91,120	41,871
9	2010	34,933	87,000	121,933	225,600	103,667	0.3606	43,969	81,351	37,382
10	2011	34,933	87,000	121,933	225,600	103,667	0.3220	39,262	72,643	33,381
11	2012	34,933	87,000	121,933	225,600	103,667	0.2875	35,056	64,860	29,804
12	2013	34,933	87,000	121,933	225,600	103,667	0.2567	31,300	57,912	26,612
13	2014	34,933	87,000	121,933	225,600	103,667	0.2292	27,947	51,708	23,761
14	2015	34,933	87,000	121,933	225,600	103,667	0.2046	24,947	46,158	21,211
15	2016	34,933	87,000	121,933	225,600	103,667	0.1827	22,277	41,217	18,940
16	2017	34,933	87,000	121,933	225,600	103,667	0.1631	19,887	36,795	16,908
17	2018	34,933	87,000	121,933	225,600	103,667	0.1456	17,753	32,847	15,094
18	2019	34,933	87,000	121,933	225,600	103,667	0.1300	15,851	29,328	13,477
19	2020	0	87,000	87,000	225,600	138,600	0.1161	10,101	26,192	16,091
20	2021		87,000	87,000	225,600	138,600	0.1037	9,022	23,395	14,373
21	2022		87,000	87,000	225,600	138,600	0.0926	8,056	20,891	12,835
22	2023		87,000	87,000	225,600	138,600	0.0826	7,186	18,635	11,449
23	2024		87,000	87,000	225,600	138,600	0.0738	6,421	16,649	10,228
24	2025		87,000	87,000	225,600	138,600	0.0659	5,733	14,867	9,134
25	2026		87,000	87,000	225,600	138,600	0.0588	5,116	13,265	8,149
26	2027		87,000	87,000	225,600	138,600	0.0525	4,568	11,844	7,276
27	2028		87,000	87,000	225,600	138,600	0.0469	4,080	10,581	6,501
28	2029		87,000	87,000	225,600	138,600	0.0419	3,645	9,453	5,808
29	2030		87,000	87,000	225,600	138,600	0.0374	3,254	8,437	5,183
30	2031		87,000	87,000	225,600	138,600	0.0334	2,906	7,535	4,629
31	2032		87,000	87,000	225,600	138,600	0.0298	2,593	6,723	4,130
32	2033		87,000	87,000	225,600	138,600	0.0266	2,314	6,001	3,687
33	2034		87,000	87,000	225,600	138,600	0.0238	2,071	5,369	3,298
34	2035		87,000	87,000	225,600	138,600	0.0212	1,844	4,783	2,939
35	2036		87,000	87,000	225,600	138,600	0.0189	1,644	4,264	2,620
36	2037		87,000	87,000	225,600	138,600	0.0169	1,470	3,813	2,343
37	2038		87,000	87,000	225,600	138,600	0.0151	1,314	3,407	2,093
38	2039		87,000	87,000	225,600	138,600	0.0135	1,175	3,046	1,871
39	2040		87,000	87,000	225,600	138,600	0.0120	1,044	2,707	1,663
40	2041		87,000	87,000	225,600	138,600	0.0107	931	2,414	1,483
41	2042		87,000	87,000	225,600	138,600	0.0096	835	2,166	1,331
42	2043		87,000	87,000	225,600	138,600	0.0086	748	1,940	1,192
43	2044		87,000	87,000	225,600	138,600	0.0076	661	1,715	1,054
44	2045		87,000	87,000	225,600	138,600	0.0068	592	1,534	942
45	2046		87,000	87,000	225,600	138,600	0.0061	531	1,376	845
46	2047		87,000	87,000	225,600	138,600	0.0054	470	1,218	748
47	2048		87,000	87,000	225,600	138,600	0.0049	426	1,105	679
48	2049		87,000	87,000	225,600	138,600	0.0043	374	970	596
		628,800	3,915,000	4,543,800	10,152,000	5,608,200		766,128	1,329,936	563,808

N.P.V=	563,808
B/C=	1.74
EIRR=	58.3%

Table L-23-15 Economic Evaluation of the Proposed Projects (Grand Total) (K8-28 Zeras)

(1,000Rls.)

Year	Total cost	Total benefit	Net Benefit	I = 12%			
				Discount Rate	Cost	Benefit	N.P.V
1	2,623,746	0	-2,623,746	0.8929	2,342,743	0	-2,342,743
2	2,623,743	0	-2,623,743	0.7972	2,091,648	0	-2,091,648
3	2,636,043	0	-2,636,043	0.7118	1,876,335	0	-1,876,335
4	2,292,557	3,302,430	1,009,873	0.6355	1,456,920	2,098,694	641,774
5	2,292,557	3,302,430	1,009,873	0.5674	1,300,797	1,873,799	573,002
6	2,230,597	3,302,430	1,071,833	0.5066	1,130,020	1,673,011	542,991
7	2,261,997	3,849,760	1,587,763	0.4523	1,023,101	1,741,246	718,145
8	2,261,997	3,849,760	1,587,763	0.4039	913,621	1,554,918	641,297
9	1,489,772	3,849,760	2,359,988	0.3606	537,212	1,388,223	851,011
10	1,489,772	3,849,760	2,359,988	0.3220	479,707	1,239,623	759,916
11	1,488,722	3,849,760	2,361,038	0.2875	428,008	1,106,806	678,798
12	1,488,722	3,849,760	2,361,038	0.2567	382,155	988,233	606,078
13	1,488,722	3,849,760	2,361,038	0.2292	341,215	882,365	541,150
14	1,289,214	3,849,760	2,560,546	0.2046	263,773	787,661	523,888
15	1,289,214	3,849,760	2,560,546	0.1827	235,539	703,351	467,812
16	1,289,214	3,849,760	2,560,546	0.1631	210,271	627,896	417,625
17	1,289,214	3,849,760	2,560,546	0.1456	187,710	560,525	372,815
18	1,289,214	3,849,760	2,560,546	0.1300	167,598	500,469	332,871
19	1,254,280	3,849,760	2,595,480	0.1161	145,622	446,957	301,335
20	1,254,280	3,849,760	2,595,480	0.1037	130,069	399,220	269,151
21	1,254,280	3,849,760	2,595,480	0.0926	116,146	356,488	240,342
22	1,254,280	3,849,760	2,595,480	0.0826	103,604	317,990	214,386
23	1,254,280	3,849,760	2,595,480	0.0738	92,566	284,112	191,546
24	1,254,280	3,849,760	2,595,480	0.0659	82,657	253,699	171,042
25	1,254,280	3,849,760	2,595,480	0.0588	73,752	226,366	152,614
26	1,254,280	3,849,760	2,595,480	0.0525	65,850	202,112	136,262
27	1,254,280	3,849,760	2,595,480	0.0469	58,826	180,554	121,728
28	1,254,280	3,849,760	2,595,480	0.0419	52,554	161,305	108,751
29	1,254,280	3,849,760	2,595,480	0.0374	46,910	143,981	97,071
30	1,254,280	3,849,760	2,595,480	0.0334	41,893	128,582	86,689
31	1,254,280	3,849,760	2,595,480	0.0298	37,378	114,723	77,345
32	1,254,280	3,849,760	2,595,480	0.0266	33,364	102,404	69,040
33	1,254,280	3,849,760	2,595,480	0.0238	29,852	91,624	61,772
34	1,254,280	3,849,760	2,595,480	0.0212	26,591	81,615	55,024
35	1,254,280	3,849,760	2,595,480	0.0189	23,706	72,760	49,054
36	1,254,280	3,849,760	2,595,480	0.0169	21,197	65,061	43,864
37	1,254,280	3,849,760	2,595,480	0.0151	18,940	58,131	39,191
38	1,254,280	3,849,760	2,595,480	0.0135	16,933	51,972	35,039
39	1,254,280	3,849,760	2,595,480	0.0120	15,051	46,197	31,146
40	1,254,280	3,849,760	2,595,480	0.0107	13,421	41,192	27,771
41	1,254,280	3,849,760	2,595,480	0.0096	12,041	36,958	24,917
42	1,254,280	3,849,760	2,595,480	0.0086	10,787	33,108	22,321
43	1,254,280	3,849,760	2,595,480	0.0076	9,533	29,258	19,725
44	1,254,280	3,849,760	2,595,480	0.0068	8,529	26,178	17,649
45	1,254,280	3,849,760	2,595,480	0.0061	7,651	23,484	15,833
46	1,254,280	3,849,760	2,595,480	0.0054	6,773	20,789	14,016
47	1,254,280	3,849,760	2,595,480	0.0049	6,146	18,864	12,718
48	1,254,280	3,849,760	2,595,480	0.0043	5,393	16,554	11,161
	70,743,417	171,597,210	100,853,793		16,682,108	21,759,058	5,076,950

N.P.V=	5,076,950
B/C=	1.30
EIRR=	18.4%

JICA