

Table L-20-11 Soil erosion protection (Economic Analysis) (K5-19a Chaman Goli-Bazofi)

(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	67,744	0	67,744	0	-67,744	0.8929	60,489	0	-60,489
2	2003	67,738	0	67,738	0	-67,738	0.7972	54,001	0	-54,001
3	2004	67,738	0	67,738	0	-67,738	0.7118	48,216	0	-48,216
4	2005	67,738	43,200	110,938	135,760	24,822	0.6355	70,501	86,275	15,774
5	2006	67,738	43,200	110,938	135,760	24,822	0.5674	62,946	77,030	14,084
6	2007	67,738	43,200	110,938	135,760	24,822	0.5066	56,201	68,776	12,575
7	2008	67,738	43,200	110,938	135,760	24,822	0.4523	50,177	61,404	11,227
8	2009	67,738	43,200	110,938	135,760	24,822	0.4039	44,808	54,833	10,025
9	2010	67,738	43,200	110,938	135,760	24,822	0.3606	40,004	48,955	8,951
10	2011	67,738	43,200	110,938	135,760	24,822	0.3220	35,722	43,715	7,993
11	2012	67,738	43,200	110,938	135,760	24,822	0.2875	31,895	39,031	7,136
12	2013	67,738	43,200	110,938	135,760	24,822	0.2567	28,478	34,850	6,372
13	2014	67,738	43,200	110,938	135,760	24,822	0.2292	25,427	31,116	5,689
14	2015	0	43,200	43,200	135,760	92,560	0.2046	8,839	27,776	18,937
15	2016	0	43,200	43,200	135,760	92,560	0.1827	7,893	24,803	16,910
16	2017	0	43,200	43,200	135,760	92,560	0.1631	7,046	22,142	15,096
17	2018	0	43,200	43,200	135,760	92,560	0.1456	6,290	19,767	13,477
18	2019	0	43,200	43,200	135,760	92,560	0.1300	5,616	17,649	12,033
19	2020	0	43,200	43,200	135,760	92,560	0.1161	5,016	15,762	10,746
20	2021		43,200	43,200	135,760	92,560	0.1037	4,480	14,078	9,598
21	2022		43,200	43,200	135,760	92,560	0.0926	4,000	12,571	8,571
22	2023		43,200	43,200	135,760	92,560	0.0826	3,568	11,214	7,646
23	2024		43,200	43,200	135,760	92,560	0.0738	3,188	10,019	6,831
24	2025		43,200	43,200	135,760	92,560	0.0659	2,847	8,947	6,100
25	2026		43,200	43,200	135,760	92,560	0.0588	2,540	7,983	5,443
26	2027		43,200	43,200	135,760	92,560	0.0525	2,268	7,127	4,859
27	2028		43,200	43,200	135,760	92,560	0.0469	2,026	6,367	4,341
28	2029		43,200	43,200	135,760	92,560	0.0419	1,810	5,688	3,878
29	2030		43,200	43,200	135,760	92,560	0.0374	1,616	5,077	3,461
30	2031		43,200	43,200	135,760	92,560	0.0334	1,443	4,534	3,091
31	2032		43,200	43,200	135,760	92,560	0.0298	1,287	4,046	2,759
32	2033		43,200	43,200	135,760	92,560	0.0266	1,149	3,611	2,462
33	2034		43,200	43,200	135,760	92,560	0.0238	1,028	3,231	2,203
34	2035		43,200	43,200	135,760	92,560	0.0212	916	2,878	1,962
35	2036		43,200	43,200	135,760	92,560	0.0189	816	2,566	1,750
36	2037		43,200	43,200	135,760	92,560	0.0169	730	2,294	1,564
37	2038		43,200	43,200	135,760	92,560	0.0151	652	2,050	1,398
38	2039		43,200	43,200	135,760	92,560	0.0135	583	1,833	1,250
39	2040		43,200	43,200	135,760	92,560	0.0120	518	1,629	1,111
40	2041		43,200	43,200	135,760	92,560	0.0107	462	1,453	991
41	2042		43,200	43,200	135,760	92,560	0.0096	415	1,303	888
42	2043		43,200	43,200	135,760	92,560	0.0086	372	1,168	796
43	2044		43,200	43,200	135,760	92,560	0.0076	328	1,032	704
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		880,600	1,728,000	2,608,600	5,430,400	2,821,800		688,607	796,583	107,976

N.P.V=	107,976
B/C=	1.16
EIRR=	16.5%

Table L-20-12 Rangeland vegetation improvement (Economic Analysis) (K5-19a Chaman Goli-Bazoft)

(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	1,110	0	1,110	0	-1,110	0.8929	991	0	-991
2	2003	1,110	0	1,110	0	-1,110	0.7972	885	0	-885
3	2004	1,110	0	1,110	0	-1,110	0.7118	790	0	-790
4	2005	1,110	6,900	8,010	112,020	104,010	0.6355	5,090	71,189	66,099
5	2006	1,110	6,900	8,010	112,020	104,010	0.5674	4,545	63,560	59,015
6	2007	1,110	6,900	8,010	112,020	104,010	0.5066	4,058	56,749	52,691
7	2008	1,110	6,900	8,010	112,020	104,010	0.4523	3,623	50,667	47,044
8	2009	1,110	6,900	8,010	112,020	104,010	0.4039	3,235	45,245	42,010
9	2010	1,110	6,900	8,010	112,020	104,010	0.3606	2,888	40,394	37,506
10	2011	1,110	6,900	8,010	112,020	104,010	0.3220	2,579	36,070	33,491
11	2012	0	6,900	6,900	112,020	105,120	0.2875	1,984	32,206	30,222
12	2013	0	6,900	6,900	112,020	105,120	0.2567	1,771	28,756	26,985
13	2014	0	6,900	6,900	112,020	105,120	0.2292	1,581	25,675	24,094
14	2015	0	6,900	6,900	112,020	105,120	0.2046	1,412	22,919	21,507
15	2016	0	6,900	6,900	112,020	105,120	0.1827	1,261	20,466	19,205
16	2017	0	6,900	6,900	112,020	105,120	0.1631	1,125	18,270	17,145
17	2018	0	6,900	6,900	112,020	105,120	0.1456	1,005	16,310	15,305
18	2019	0	6,900	6,900	112,020	105,120	0.1300	897	14,563	13,666
19	2020	0	6,900	6,900	112,020	105,120	0.1161	801	13,006	12,205
20	2021		6,900	6,900	112,020	105,120	0.1037	716	11,616	10,900
21	2022		6,900	6,900	112,020	105,120	0.0926	639	10,373	9,734
22	2023		6,900	6,900	112,020	105,120	0.0826	570	9,253	8,683
23	2024		6,900	6,900	112,020	105,120	0.0738	509	8,267	7,758
24	2025		6,900	6,900	112,020	105,120	0.0659	455	7,382	6,927
25	2026		6,900	6,900	112,020	105,120	0.0588	406	6,587	6,181
26	2027		6,900	6,900	112,020	105,120	0.0525	362	5,881	5,519
27	2028		6,900	6,900	112,020	105,120	0.0469	324	5,254	4,930
28	2029		6,900	6,900	112,020	105,120	0.0419	289	4,694	4,405
29	2030		6,900	6,900	112,020	105,120	0.0374	258	4,190	3,932
30	2031		6,900	6,900	112,020	105,120	0.0334	230	3,741	3,511
31	2032		6,900	6,900	112,020	105,120	0.0298	206	3,338	3,132
32	2033		6,900	6,900	112,020	105,120	0.0266	184	2,980	2,796
33	2034		6,900	6,900	112,020	105,120	0.0238	164	2,666	2,502
34	2035		6,900	6,900	112,020	105,120	0.0212	146	2,375	2,229
35	2036		6,900	6,900	112,020	105,120	0.0189	130	2,117	1,987
36	2037		6,900	6,900	112,020	105,120	0.0169	117	1,893	1,776
37	2038		6,900	6,900	112,020	105,120	0.0151	104	1,692	1,588
38	2039		6,900	6,900	112,020	105,120	0.0135	93	1,512	1,419
39	2040		6,900	6,900	112,020	105,120	0.0120	83	1,344	1,261
40	2041		6,900	6,900	112,020	105,120	0.0107	74	1,199	1,125
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		11,100	255,300	266,400	4,144,740	3,878,340		46,580	654,399	607,819

N.P.V=	607,819
B/C=	14.05
EIRR=	355.8%

Table L-20-13 Forestland vegetation recovery (Economic Analysis) (K5-19a Chaman Goli-Bazofi)

(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	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	0	2,600	2,600	90,240	87,640	0.6355	1,652	57,348	55,696
5 2006	0	2,600	2,600	90,240	87,640	0.5674	1,475	51,202	49,727
6 2007	0	2,600	2,600	90,240	87,640	0.5066	1,317	45,716	44,399
7 2008	0	2,600	2,600	90,240	87,640	0.4523	1,176	40,816	39,640
8 2009	0	2,600	2,600	90,240	87,640	0.4039	1,050	36,448	35,398
9 2010	0	2,600	2,600	90,240	87,640	0.3606	938	32,541	31,603
10 2011	0	2,600	2,600	90,240	87,640	0.3220	837	29,057	28,220
11 2012	0	2,600	2,600	90,240	87,640	0.2875	748	25,944	25,196
12 2013	0	2,600	2,600	90,240	87,640	0.2567	667	23,165	22,498
13 2014	0	2,600	2,600	90,240	87,640	0.2292	596	20,683	20,087
14 2015	0	2,600	2,600	90,240	87,640	0.2046	532	18,463	17,931
15 2016	0	2,600	2,600	90,240	87,640	0.1827	475	16,487	16,012
16 2017	0	2,600	2,600	90,240	87,640	0.1631	424	14,718	14,294
17 2018	0	2,600	2,600	90,240	87,640	0.1456	379	13,139	12,760
18 2019	0	2,600	2,600	90,240	87,640	0.1300	338	11,731	11,393
19 2020	0	2,600	2,600	90,240	87,640	0.1161	302	10,477	10,175
20 2021		2,600	2,600	90,240	87,640	0.1037	270	9,358	9,088
21 2022		2,600	2,600	90,240	87,640	0.0926	241	8,356	8,115
22 2023		2,600	2,600	90,240	87,640	0.0826	215	7,454	7,239
23 2024		2,600	2,600	90,240	87,640	0.0738	192	6,660	6,468
24 2025		2,600	2,600	90,240	87,640	0.0659	171	5,947	5,776
25 2026		2,600	2,600	90,240	87,640	0.0588	153	5,306	5,153
26 2027		2,600	2,600	90,240	87,640	0.0525	137	4,738	4,601
27 2028		2,600	2,600	90,240	87,640	0.0469	122	4,232	4,110
28 2029		2,600	2,600	90,240	87,640	0.0419	109	3,781	3,672
29 2030		2,600	2,600	90,240	87,640	0.0374	97	3,375	3,278
30 2031		2,600	2,600	90,240	87,640	0.0334	87	3,014	2,927
31 2032		2,600	2,600	90,240	87,640	0.0298	77	2,689	2,612
32 2033		2,600	2,600	90,240	87,640	0.0266	69	2,400	2,331
33 2034		2,600	2,600	90,240	87,640	0.0238	62	2,148	2,086
34 2035		2,600	2,600	90,240	87,640	0.0212	55	1,913	1,858
35 2036		2,600	2,600	90,240	87,640	0.0189	49	1,706	1,657
36 2037		2,600	2,600	90,240	87,640	0.0169	44	1,525	1,481
37 2038		2,600	2,600	90,240	87,640	0.0151	39	1,363	1,324
38 2039									
39 2040									
40 2041									
41 2042									
42 2043									
43 2044									
44 2045									
45 2046									
46 2047									
47 2048									
48 2049									
	0	88,400	88,400	3,068,160	2,979,760		15,095	523,900	508,805

N.P.V=	508,805
B/C=	34.71
EIRR=	#DIV/0!

Table L-20-14 Increase of Agricultural production (Economic Analysis) (K5-19a Chaman Goli-Bazoft)

(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	104,237	0	104,237	0	-104,237	0.8929	93,073	0	-93,073
2	2003	104,239	0	104,239	0	-104,239	0.7972	83,099	0	-83,099
3	2004	104,239	0	104,239	0	-104,239	0.7118	74,197	0	-74,197
4	2005	104,239	133,200	237,439	300,924	63,485	0.6355	150,892	191,237	40,345
5	2006	104,239	133,200	237,439	300,924	63,485	0.5674	134,723	170,744	36,021
6	2007	104,239	133,200	237,439	300,924	63,485	0.5066	120,287	152,448	32,161
7	2008	104,239	133,200	237,439	300,924	63,485	0.4523	107,394	136,108	28,714
8	2009	104,239	133,200	237,439	300,924	63,485	0.4039	95,902	121,543	25,641
9	2010	104,239	133,200	237,439	300,924	63,485	0.3606	85,621	108,513	22,892
10	2011	104,239	133,200	237,439	300,924	63,485	0.3220	76,455	96,898	20,443
11	2012	104,239	133,200	237,439	300,924	63,485	0.2875	68,264	86,516	18,252
12	2013	104,239	133,200	237,439	300,924	63,485	0.2567	60,951	77,247	16,296
13	2014	104,239	133,200	237,439	300,924	63,485	0.2292	54,421	68,972	14,551
14	2015	104,239	133,200	237,439	300,924	63,485	0.2046	48,580	61,569	12,989
15	2016	104,239	133,200	237,439	300,924	63,485	0.1827	43,380	54,979	11,599
16	2017	104,239	133,200	237,439	300,924	63,485	0.1631	38,726	49,081	10,355
17	2018	104,239	133,200	237,439	300,924	63,485	0.1456	34,571	43,815	9,244
18	2019	104,239	133,200	237,439	300,924	63,485	0.1300	30,867	39,120	8,253
19	2020	0	133,200	133,200	300,924	167,724	0.1161	15,465	34,937	19,472
20	2021		133,200	133,200	300,924	167,724	0.1037	13,813	31,206	17,393
21	2022		133,200	133,200	300,924	167,724	0.0926	12,334	27,866	15,532
22	2023		133,200	133,200	300,924	167,724	0.0826	11,002	24,856	13,854
23	2024		133,200	133,200	300,924	167,724	0.0738	9,830	22,208	12,378
24	2025		133,200	133,200	300,924	167,724	0.0659	8,778	19,831	11,053
25	2026		133,200	133,200	300,924	167,724	0.0588	7,832	17,694	9,862
26	2027		133,200	133,200	300,924	167,724	0.0525	6,993	15,799	8,806
27	2028		133,200	133,200	300,924	167,724	0.0469	6,247	14,113	7,866
28	2029		133,200	133,200	300,924	167,724	0.0419	5,581	12,609	7,028
29	2030		133,200	133,200	300,924	167,724	0.0374	4,982	11,255	6,273
30	2031		133,200	133,200	300,924	167,724	0.0334	4,449	10,051	5,602
31	2032		133,200	133,200	300,924	167,724	0.0298	3,969	8,968	4,999
32	2033		133,200	133,200	300,924	167,724	0.0266	3,543	8,005	4,462
33	2034		133,200	133,200	300,924	167,724	0.0238	3,170	7,162	3,992
34	2035		133,200	133,200	300,924	167,724	0.0212	2,824	6,380	3,556
35	2036		133,200	133,200	300,924	167,724	0.0189	2,517	5,687	3,170
36	2037		133,200	133,200	300,924	167,724	0.0169	2,251	5,086	2,835
37	2038		133,200	133,200	300,924	167,724	0.0151	2,011	4,544	2,533
38	2039		133,200	133,200	300,924	167,724	0.0135	1,798	4,062	2,264
39	2040		133,200	133,200	300,924	167,724	0.0120	1,598	3,611	2,013
40	2041		133,200	133,200	300,924	167,724	0.0107	1,425	3,220	1,795
41	2042		133,200	133,200	300,924	167,724	0.0096	1,279	2,889	1,610
42	2043		133,200	133,200	300,924	167,724	0.0086	1,146	2,588	1,442
43	2044		133,200	133,200	300,924	167,724	0.0076	1,012	2,287	1,275
44	2045		133,200	133,200	300,924	167,724	0.0068	906	2,046	1,140
45	2046		133,200	133,200	300,924	167,724	0.0061	813	1,836	1,023
46	2047		133,200	133,200	300,924	167,724	0.0054	719	1,625	906
47	2048		133,200	133,200	300,924	167,724	0.0049	653	1,475	822
48	2049		133,200	133,200	300,924	167,724	0.0043	573	1,294	721
		1,876,300	5,994,000	7,870,300	13,541,580	5,671,280		1,540,916	1,773,980	233,064

N.P.V=	233,064
B/C=	1.15
EIRR=	18.9%

Table L-20-15 Fish culture promotion (Economic Analysis) (K5-19a Chaman Goli-Bazoft)

(1,000Rls.)

							I = 12%			
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V	
1	2002	856,720	0	856,720	0	-856,720	0.8929	764,965	0	-764,965
2	2003	856,720	0	856,720	0	-856,720	0.7972	682,977	0	-682,977
3	2004	856,720	0	856,720	0	-856,720	0.7118	609,813	0	-609,813
4	2005	856,720	2,505,350	3,362,070	3,196,000	-166,070	0.6355	2,136,595	2,031,058	-105,537
5	2006	856,720	2,505,350	3,362,070	3,196,000	-166,070	0.5674	1,907,639	1,813,410	-94,229
6	2007	0	2,505,350	2,505,350	3,196,000	690,650	0.5066	1,269,210	1,619,094	349,884
7	2008	0	2,505,350	2,505,350	3,196,000	690,650	0.4523	1,133,170	1,445,551	312,381
8	2009	0	2,505,350	2,505,350	3,196,000	690,650	0.4039	1,011,911	1,290,864	278,953
9	2010	0	2,505,350	2,505,350	3,196,000	690,650	0.3606	903,429	1,152,478	249,049
10	2011	0	2,505,350	2,505,350	3,196,000	690,650	0.3220	806,723	1,029,112	222,389
11	2012	0	2,505,350	2,505,350	3,196,000	690,650	0.2875	720,288	918,850	198,562
12	2013	0	2,505,350	2,505,350	3,196,000	690,650	0.2567	643,123	820,413	177,290
13	2014	0	2,505,350	2,505,350	3,196,000	690,650	0.2292	574,226	732,523	158,297
14	2015	0	2,505,350	2,505,350	3,196,000	690,650	0.2046	512,595	653,902	141,307
15	2016	0	2,505,350	2,505,350	3,196,000	690,650	0.1827	457,727	583,909	126,182
16	2017	0	2,505,350	2,505,350	3,196,000	690,650	0.1631	408,623	521,268	112,645
17	2018	0	2,505,350	2,505,350	3,196,000	690,650	0.1456	364,779	465,338	100,559
18	2019	0	2,505,350	2,505,350	3,196,000	690,650	0.1300	325,696	415,480	89,784
19	2020	0	2,505,350	2,505,350	3,196,000	690,650	0.1161	290,871	371,056	80,185
20	2021		2,505,350	2,505,350	3,196,000	690,650	0.1037	259,805	331,425	71,620
21	2022		2,505,350	2,505,350	3,196,000	690,650	0.0926	231,995	295,950	63,955
22	2023		2,505,350	2,505,350	3,196,000	690,650	0.0826	206,942	263,990	57,048
23	2024		2,505,350	2,505,350	3,196,000	690,650	0.0738	184,895	235,865	50,970
24	2025		2,505,350	2,505,350	3,196,000	690,650	0.0659	165,103	210,616	45,513
25	2026		2,505,350	2,505,350	3,196,000	690,650	0.0588	147,315	187,925	40,610
26	2027		2,505,350	2,505,350	3,196,000	690,650	0.0525	131,531	167,790	36,259
27	2028		2,505,350	2,505,350	3,196,000	690,650	0.0469	117,501	149,892	32,391
28	2029		2,505,350	2,505,350	3,196,000	690,650	0.0419	104,974	133,912	28,938
29	2030		2,505,350	2,505,350	3,196,000	690,650	0.0374	93,700	119,530	25,830
30	2031		2,505,350	2,505,350	3,196,000	690,650	0.0334	83,679	106,746	23,067
31	2032		2,505,350	2,505,350	3,196,000	690,650	0.0298	74,659	95,241	20,582
32	2033		2,505,350	2,505,350	3,196,000	690,650	0.0266	66,642	85,014	18,372
33	2034		2,505,350	2,505,350	3,196,000	690,650	0.0238	59,627	76,065	16,438
34	2035		2,505,350	2,505,350	3,196,000	690,650	0.0212	53,113	67,755	14,642
35	2036		2,505,350	2,505,350	3,196,000	690,650	0.0189	47,351	60,404	13,053
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									
		4,283,600	80,171,200	84,454,800	102,272,000	17,817,200		17,553,192	18,452,426	899,234

N.P.V=	899,234
B/C=	1.05
EIRR=	15.6%

Table L-20-16 Diversification to Milk Cow (Economic Analysis) (K5-19a Chaman Goli-Bazoft)

(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	0.8929	0	0	0
2	2003	0	0	0	0	0.7972	0	0	0
3	2004	0	0	0	0	0.7118	0	0	0
4	2005	0	0	0	0	0.6355	0	0	0
5	2006	0	0	0	0	0.5674	0	0	0
6	2007	125,840	347,696	473,536	1,276,770	0.5066	239,893	646,812	406,919
7	2008	125,840	695,392	821,232	1,489,565	0.4523	371,443	673,730	302,287
8	2009	125,840	1,043,088	1,168,928	1,702,360	0.4039	472,130	687,583	215,453
9	2010	125,840	1,390,784	1,516,624	1,915,155	0.3606	546,895	690,605	143,710
10	2011	125,840	1,738,480	1,864,320	2,127,950	0.3220	600,311	685,200	84,889
11	2012	0	1,738,480	1,738,480	2,127,950	0.2875	499,813	611,786	111,973
12	2013	0	1,738,480	1,738,480	2,127,950	0.2567	446,268	546,245	99,977
13	2014	0	1,738,480	1,738,480	2,127,950	0.2292	398,460	487,726	89,266
14	2015	0	1,738,480	1,738,480	2,127,950	0.2046	355,693	435,379	79,686
15	2016	0	1,738,480	1,738,480	2,127,950	0.1827	317,620	388,776	71,156
16	2017	0	1,738,480	1,738,480	2,127,950	0.1631	283,546	347,069	63,523
17	2018	0	1,738,480	1,738,480	2,127,950	0.1456	253,123	309,830	56,707
18	2019	0	1,738,480	1,738,480	2,127,950	0.1300	226,002	276,634	50,632
19	2020	0	1,738,480	1,738,480	2,127,950	0.1161	201,838	247,055	45,217
20	2021		1,738,480	1,738,480	2,127,950	0.1037	180,280	220,668	40,388
21	2022		1,738,480	1,738,480	2,127,950	0.0926	160,983	197,048	36,065
22	2023		1,738,480	1,738,480	2,127,950	0.0826	143,598	175,769	32,171
23	2024		1,738,480	1,738,480	2,127,950	0.0738	128,300	157,043	28,743
24	2025		1,738,480	1,738,480	2,127,950	0.0659	114,566	140,232	25,666
25	2026		1,738,480	1,738,480	2,127,950	0.0588	102,223	125,123	22,900
26	2027		1,738,480	1,738,480	2,127,950	0.0525	91,270	111,717	20,447
27	2028		1,738,480	1,738,480	2,127,950	0.0469	81,535	99,801	18,266
28	2029		1,738,480	1,738,480	2,127,950	0.0419	72,842	89,161	16,319
29	2030		1,738,480	1,738,480	2,127,950	0.0374	65,019	79,585	14,566
30	2031		1,738,480	1,738,480	2,127,950	0.0334	58,065	71,074	13,009
31	2032		1,738,480	1,738,480	2,127,950	0.0298	51,807	63,413	11,606
32	2033		1,738,480	1,738,480	2,127,950	0.0266	46,244	56,603	10,359
33	2034		1,738,480	1,738,480	2,127,950	0.0238	41,376	50,645	9,269
34	2035		1,738,480	1,738,480	2,127,950	0.0212	36,856	45,113	8,257
35	2036		1,738,480	1,738,480	2,127,950	0.0189	32,857	40,218	7,361
36	2037		1,738,480	1,738,480	2,127,950	0.0169	29,380	35,962	6,582
37	2038		1,738,480	1,738,480	2,127,950	0.0151	26,251	32,132	5,881
38	2039		1,738,480	1,738,480	2,127,950	0.0135	23,469	28,727	5,258
39	2040		1,738,480	1,738,480	2,127,950	0.0120	20,862	25,535	4,673
40	2041		1,738,480	1,738,480	2,127,950	0.0107	18,602	22,769	4,167
41	2042								
42	2043								
43	2044								
44	2045								
45	2046								
46	2047								
47	2048								
48	2049								
		629,200	57,369,840	57,999,040	72,350,300	14,351,260	6,739,420	8,902,768	2,163,348

N.P.V=	2,163,348
B/C=	1.32
EIRR=	#DIV/0!

Table L-20-17 Rural water supply (Economic Analysis) (K5-19a Chaman Goli-Bazofi)

(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	109,100	0	109,100	0	-109,100	0.8929	97,415	0	-97,415
2	2003	109,100	0	109,100	0	-109,100	0.7972	86,975	0	-86,975
3	2004	109,100	97,900	207,000	102,630	-104,370	0.7118	147,343	73,052	-74,291
4	2005	0	97,900	97,900	102,630	4,730	0.6355	62,215	65,221	3,006
5	2006	0	97,900	97,900	102,630	4,730	0.5674	55,548	58,232	2,684
6	2007	0	97,900	97,900	102,630	4,730	0.5066	49,596	51,992	2,396
7	2008	0	97,900	97,900	102,630	4,730	0.4523	44,280	46,420	2,140
8	2009	0	97,900	97,900	102,630	4,730	0.4039	39,542	41,452	1,910
9	2010	0	97,900	97,900	102,630	4,730	0.3606	35,303	37,008	1,705
10	2011	0	97,900	97,900	102,630	4,730	0.3220	31,524	33,047	1,523
11	2012	0	97,900	97,900	102,630	4,730	0.2875	28,146	29,506	1,360
12	2013	0	97,900	97,900	102,630	4,730	0.2567	25,131	26,345	1,214
13	2014	0	97,900	97,900	102,630	4,730	0.2292	22,439	23,523	1,084
14	2015	0	97,900	97,900	102,630	4,730	0.2046	20,030	20,998	968
15	2016	0	97,900	97,900	102,630	4,730	0.1827	17,886	18,751	865
16	2017	0	97,900	97,900	102,630	4,730	0.1631	15,967	16,739	772
17	2018	0	97,900	97,900	102,630	4,730	0.1456	14,254	14,943	689
18	2019	0	97,900	97,900	102,630	4,730	0.1300	12,727	13,342	615
19	2020	0	97,900	97,900	102,630	4,730	0.1161	11,366	11,915	549
20	2021		97,900	97,900	102,630	4,730	0.1037	10,152	10,643	491
21	2022		97,900	97,900	102,630	4,730	0.0926	9,066	9,504	438
22	2023		97,900	97,900	102,630	4,730	0.0826	8,087	8,477	390
23	2024		97,900	97,900	102,630	4,730	0.0738	7,225	7,574	349
24	2025		97,900	97,900	102,630	4,730	0.0659	6,452	6,763	311
25	2026		97,900	97,900	102,630	4,730	0.0588	5,757	6,035	278
26	2027		97,900	97,900	102,630	4,730	0.0525	5,140	5,388	248
27	2028		97,900	97,900	102,630	4,730	0.0469	4,592	4,813	221
28	2029		97,900	97,900	102,630	4,730	0.0419	4,102	4,300	198
29	2030		97,900	97,900	102,630	4,730	0.0374	3,661	3,838	177
30	2031		97,900	97,900	102,630	4,730	0.0334	3,270	3,428	158
31	2032		97,900	97,900	102,630	4,730	0.0298	2,917	3,058	141
32	2033		97,900	97,900	102,630	4,730	0.0266	2,604	2,730	126
33	2034		97,900	97,900	102,630	4,730	0.0238	2,330	2,443	113
34	2035									
35	2036									
36	2037									
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45	2046									
46	2047									
47	2048									
48	2049									
		327,300	3,034,900	3,362,200	3,181,530	-180,670		893,042	661,480	-231,562

N.P.V=	-231,562
B/C=	0.74
EIRR=	#NUM!

Table L-20-18 Rural road improvement (Economic Analysis) (K5-19a Chaman Goli-Bazoft)

(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	423,966	0	423,966	0	-423,966	0.8929	378,559	0	-378,559
2	2003	423,967	0	423,967	0	-423,967	0.7972	337,986	0	-337,986
3	2004	423,967	118,000	541,967	65,840	-476,127	0.7118	385,772	46,865	-338,907
4	2005	0	118,000	118,000	65,840	-52,160	0.6355	74,989	41,841	-33,148
5	2006	0	118,000	118,000	65,840	-52,160	0.5674	66,953	37,358	-29,595
6	2007	0	118,000	118,000	65,840	-52,160	0.5066	59,779	33,355	-26,424
7	2008	0	118,000	118,000	65,840	-52,160	0.4523	53,371	29,779	-23,592
8	2009	0	118,000	118,000	65,840	-52,160	0.4039	47,660	26,593	-21,067
9	2010	0	118,000	118,000	65,840	-52,160	0.3606	42,551	23,742	-18,809
10	2011	0	118,000	118,000	65,840	-52,160	0.3220	37,996	21,200	-16,796
11	2012	0	118,000	118,000	65,840	-52,160	0.2875	33,925	18,929	-14,996
12	2013	0	118,000	118,000	65,840	-52,160	0.2567	30,291	16,901	-13,390
13	2014	0	118,000	118,000	65,840	-52,160	0.2292	27,046	15,091	-11,955
14	2015	0	118,000	118,000	65,840	-52,160	0.2046	24,143	13,471	-10,672
15	2016	0	118,000	118,000	65,840	-52,160	0.1827	21,559	12,029	-9,530
16	2017	0	118,000	118,000	65,840	-52,160	0.1631	19,246	10,739	-8,507
17	2018	0	118,000	118,000	65,840	-52,160	0.1456	17,181	9,586	-7,595
18	2019	0	118,000	118,000	65,840	-52,160	0.1300	15,340	8,559	-6,781
19	2020	0	118,000	118,000	65,840	-52,160	0.1161	13,700	7,644	-6,056
20	2021		118,000	118,000	65,840	-52,160	0.1037	12,237	6,828	-5,409
21	2022		118,000	118,000	65,840	-52,160	0.0926	10,927	6,097	-4,830
22	2023		118,000	118,000	65,840	-52,160	0.0826	9,747	5,438	-4,309
23	2024		118,000	118,000	65,840	-52,160	0.0738	8,708	4,859	-3,849
24	2025		118,000	118,000	65,840	-52,160	0.0659	7,776	4,339	-3,437
25	2026		118,000	118,000	65,840	-52,160	0.0588	6,938	3,871	-3,067
26	2027		118,000	118,000	65,840	-52,160	0.0525	6,195	3,457	-2,738
27	2028		118,000	118,000	65,840	-52,160	0.0469	5,534	3,088	-2,446
28	2029		118,000	118,000	65,840	-52,160	0.0419	4,944	2,759	-2,185
29	2030		118,000	118,000	65,840	-52,160	0.0374	4,413	2,462	-1,951
30	2031		118,000	118,000	65,840	-52,160	0.0334	3,941	2,199	-1,742
31	2032		118,000	118,000	65,840	-52,160	0.0298	3,516	1,962	-1,554
32	2033		118,000	118,000	65,840	-52,160	0.0266	3,139	1,751	-1,388
33	2034		118,000	118,000	65,840	-52,160	0.0238	2,808	1,567	-1,241
34	2035									
35	2036									
36	2037									
37	2038									
38	2039									
39	2040									
40	2041									
41	2042									
42	2043									
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44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		1,271,900	3,658,000	4,929,900	2,041,040	-2,888,860		1,778,870	424,359	-1,354,511

N.P.V=	-1,354,511
B/C=	0.24
EIRR=	#DIV/0!

Table L-20-19 Establishment of cooperative (Economic Analysis) (K5-19a Chaman Goli-Bazoft)

(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	68,887	0	68,887	0	-68,887	0.8929	61,509	0	-61,509
2	2003	68,889	0	68,889	0	-68,889	0.7972	54,918	0	-54,918
3	2004	68,889	0	68,889	0	-68,889	0.7118	49,035	0	-49,035
4	2005	68,889	1,463,290	1,532,179	1,977,760	445,581	0.6355	973,700	1,256,866	283,166
5	2006	68,889	1,463,290	1,532,179	1,977,760	445,581	0.5674	869,358	1,122,181	252,823
6	2007	68,889	1,463,290	1,532,179	1,977,760	445,581	0.5066	776,202	1,001,933	225,731
7	2008	68,889	1,463,290	1,532,179	1,977,760	445,581	0.4523	693,005	894,541	201,536
8	2009	68,889	1,463,290	1,532,179	1,977,760	445,581	0.4039	618,847	798,817	179,970
9	2010	68,889	1,463,290	1,532,179	1,977,760	445,581	0.3606	552,504	713,180	160,676
10	2011	68,889	1,463,290	1,532,179	1,977,760	445,581	0.3220	493,362	636,839	143,477
11	2012	68,889	1,463,290	1,532,179	1,977,760	445,581	0.2875	440,501	568,606	128,105
12	2013	68,889	1,463,290	1,532,179	1,977,760	445,581	0.2567	393,310	507,691	114,381
13	2014	68,889	1,463,290	1,532,179	1,977,760	445,581	0.2292	351,175	453,303	102,128
14	2015	68,889	1,463,290	1,532,179	1,977,760	445,581	0.2046	313,484	404,650	91,166
15	2016	68,889	1,463,290	1,532,179	1,977,760	445,581	0.1827	279,929	361,337	81,408
16	2017	68,889	1,463,290	1,532,179	1,977,760	445,581	0.1631	249,898	322,573	72,675
17	2018	68,889	1,463,290	1,532,179	1,977,760	445,581	0.1456	223,085	287,962	64,877
18	2019	68,889	1,463,290	1,532,179	1,977,760	445,581	0.1300	199,183	257,109	57,926
19	2020	0	1,463,290	1,463,290	1,977,760	514,470	0.1161	169,888	229,618	59,730
20	2021		1,463,290	1,463,290	1,977,760	514,470	0.1037	151,743	205,094	53,351
21	2022		1,463,290	1,463,290	1,977,760	514,470	0.0926	135,501	183,141	47,640
22	2023		1,463,290	1,463,290	1,977,760	514,470	0.0826	120,868	163,363	42,495
23	2024		1,463,290	1,463,290	1,977,760	514,470	0.0738	107,991	145,959	37,968
24	2025		1,463,290	1,463,290	1,977,760	514,470	0.0659	96,431	130,334	33,903
25	2026		1,463,290	1,463,290	1,977,760	514,470	0.0588	86,041	116,292	30,251
26	2027		1,463,290	1,463,290	1,977,760	514,470	0.0525	76,823	103,832	27,009
27	2028		1,463,290	1,463,290	1,977,760	514,470	0.0469	68,628	92,757	24,129
28	2029		1,463,290	1,463,290	1,977,760	514,470	0.0419	61,312	82,868	21,556
29	2030		1,463,290	1,463,290	1,977,760	514,470	0.0374	54,727	73,968	19,241
30	2031		1,463,290	1,463,290	1,977,760	514,470	0.0334	48,874	66,057	17,183
31	2032		1,463,290	1,463,290	1,977,760	514,470	0.0298	43,606	58,937	15,331
32	2033		1,463,290	1,463,290	1,977,760	514,470	0.0266	38,924	52,608	13,684
33	2034		1,463,290	1,463,290	1,977,760	514,470	0.0238	34,826	47,071	12,245
34	2035		1,463,290	1,463,290	1,977,760	514,470	0.0212	31,022	41,929	10,907
35	2036		1,463,290	1,463,290	1,977,760	514,470	0.0189	27,656	37,380	9,724
36	2037		1,463,290	1,463,290	1,977,760	514,470	0.0169	24,730	33,424	8,694
37	2038		1,463,290	1,463,290	1,977,760	514,470	0.0151	22,096	29,864	7,768
38	2039		1,463,290	1,463,290	1,977,760	514,470	0.0135	19,754	26,700	6,946
39	2040		1,463,290	1,463,290	1,977,760	514,470	0.0120	17,559	23,733	6,174
40	2041		1,463,290	1,463,290	1,977,760	514,470	0.0107	15,657	21,162	5,505
41	2042		1,463,290	1,463,290	1,977,760	514,470	0.0096	14,048	18,986	4,938
42	2043		1,463,290	1,463,290	1,977,760	514,470	0.0086	12,584	17,009	4,425
43	2044		1,463,290	1,463,290	1,977,760	514,470	0.0076	11,121	15,031	3,910
44	2045		1,463,290	1,463,290	1,977,760	514,470	0.0068	9,950	13,449	3,499
45	2046		1,463,290	1,463,290	1,977,760	514,470	0.0061	8,926	12,064	3,138
46	2047		1,463,290	1,463,290	1,977,760	514,470	0.0054	7,902	10,680	2,778
47	2048		1,463,290	1,463,290	1,977,760	514,470	0.0049	7,170	9,691	2,521
48	2049		1,463,290	1,463,290	1,977,760	514,470	0.0043	6,292	8,504	2,212
		1,240,000	65,848,050	67,088,050	88,999,200	21,911,150		9,125,655	11,659,093	2,533,438

N.P.V=	2,533,438
B/C=	1.28
EIRR=	95.5%

Table L-20-20 Economic Evaluation of the Proposed Projects (Grand Total) (K5-19a Chaman Goli-Bazoft)

(1,000Rls.)

Year	Total cost	Total benefit	Net Benefit	I = 12%			
				Discount Rate	Cost	Benefit	N.P.V
1	2,124,905	0	-2,124,905	0.8929	1,897,328	0	-1,897,328
2	2,124,905	0	-2,124,905	0.7972	1,693,974	0	-1,693,974
3	2,367,005	241,910	-2,125,095	0.7118	1,684,834	172,192	-1,512,642
4	5,914,311	6,913,004	998,693	0.6355	3,758,545	4,393,214	634,669
5	5,914,311	6,913,004	998,693	0.5674	3,355,780	3,922,438	566,658
6	5,531,127	8,189,774	2,658,647	0.5066	2,802,069	4,148,940	1,346,871
7	5,878,823	8,402,569	2,523,746	0.4523	2,658,992	3,800,482	1,141,490
8	6,226,519	8,615,364	2,388,845	0.4039	2,514,891	3,479,746	964,855
9	6,657,740	8,828,159	2,170,419	0.3606	2,400,781	3,183,434	782,653
10	7,005,436	9,040,954	2,035,518	0.3220	2,255,750	2,911,187	655,437
11	6,878,486	9,040,954	2,162,468	0.2875	1,977,565	2,599,274	621,709
12	6,908,086	9,076,564	2,168,478	0.2567	1,773,306	2,329,954	556,648
13	6,908,086	9,076,564	2,168,478	0.2292	1,583,333	2,080,348	497,015
14	6,372,348	9,076,564	2,704,216	0.2046	1,303,782	1,857,065	553,283
15	6,372,348	9,076,564	2,704,216	0.1827	1,164,228	1,658,288	494,060
16	6,372,348	9,076,564	2,704,216	0.1631	1,039,330	1,480,388	441,058
17	6,372,348	9,076,564	2,704,216	0.1456	927,814	1,321,548	393,734
18	6,372,348	9,076,564	2,704,216	0.1300	828,405	1,179,953	351,548
19	6,199,220	9,076,564	2,877,344	0.1161	719,729	1,053,789	334,060
20	6,199,220	9,076,564	2,877,344	0.1037	642,859	941,240	298,381
21	6,199,220	9,076,564	2,877,344	0.0926	574,048	840,490	266,442
22	6,199,220	9,076,564	2,877,344	0.0826	512,056	749,724	237,668
23	6,199,220	9,076,564	2,877,344	0.0738	457,502	669,850	212,348
24	6,199,220	9,076,564	2,877,344	0.0659	408,529	598,146	189,617
25	6,199,220	9,076,564	2,877,344	0.0588	364,514	533,702	169,188
26	6,199,220	9,076,564	2,877,344	0.0525	325,459	476,520	151,061
27	6,199,220	9,076,564	2,877,344	0.0469	290,743	425,691	134,948
28	6,199,220	9,076,564	2,877,344	0.0419	259,747	380,308	120,561
29	6,199,220	9,076,564	2,877,344	0.0374	231,851	339,463	107,612
30	6,199,220	9,076,564	2,877,344	0.0334	207,054	303,157	96,103
31	6,199,220	9,076,564	2,877,344	0.0298	184,737	270,482	85,745
32	6,199,220	9,076,564	2,877,344	0.0266	164,899	241,437	76,538
33	6,199,220	9,076,564	2,877,344	0.0238	147,541	216,022	68,481
34	6,199,220	9,076,564	2,877,344	0.0212	131,423	192,423	61,000
35	6,199,220	9,076,564	2,877,344	0.0189	117,165	171,547	54,382
36	6,199,220	9,076,564	2,877,344	0.0169	104,767	153,394	48,627
37	6,199,220	9,076,564	2,877,344	0.0151	93,608	137,056	43,448
38	6,199,220	9,076,564	2,877,344	0.0135	83,689	122,534	38,845
39	6,199,220	9,076,564	2,877,344	0.0120	74,391	108,919	34,528
40	6,199,220	9,076,564	2,877,344	0.0107	66,332	97,119	30,787
41	6,199,220	9,076,564	2,877,344	0.0096	59,513	87,135	27,622
42	6,199,220	9,076,564	2,877,344	0.0086	53,313	78,058	24,745
43	6,199,220	9,076,564	2,877,344	0.0076	47,114	68,982	21,868
44	6,199,220	9,076,564	2,877,344	0.0068	42,155	61,721	19,566
45	6,199,220	9,076,564	2,877,344	0.0061	37,815	55,367	17,552
46	6,199,220	9,076,564	2,877,344	0.0054	33,476	49,013	15,537
47	6,199,220	9,076,564	2,877,344	0.0049	30,376	44,475	14,099
48	6,199,220	9,076,564	2,877,344	0.0043	26,657	39,029	12,372
288,278,080 402,018,560 113,740,480					42,113,769	50,025,244	7,911,475

N.P.V=	7,911,475
B/C=	1.19
EIRR=	24.1%

Table L-21 Result of Financial and Economic Analysis (K7-0-19-1 Sarbaz)

(1,000Rls.)

Project	Financial Analysis			Economic Analysis		
	NPV	B/C	FIRR	NPV	B/C	ERR
(1) Construction of check dam	-	-	-	2,446,843	1.85	25.4%
(2) River treatment	-	-	-	-759,151	0.53	#NUM!
(3) Landslide protection	-	-	-	1,383,803	2.49	42.7%
(4) Soil erosion protection	-	-	-	35,336	1.19	15.9%
(5) Rangeland vegetation improvement	-	-	-	960,222	20.57	374.8%
(6) Increase of irrigated agriculture	12,356,911	4.94	121.7%	10,812,517	4.67	117.0%
(7) Collecting and grading center of apple	12,335,189	1.30	55.5%	14,342,269	1.40	76.2%
(8) Diversification to milk cow	1,198,541	1.17	143.9%	1,194,769	1.18	162.5%
(9) Rural water supply improvement	-367,880	0.63	#DIV/0!	-345,793	0.63	#DIV/0!
(10) Rural road improvement	3,809,115	1.97	24.6%	3,580,594	1.97	24.6%
(11) Establishment of cooperative	2,206,625	1.22	82.1%	2,499,216	1.27	91.5%
(12) Community enhancement	Intangible	Intangible	Intangible	Intangible	Intangible	Intangible
Total	32,072,769	1.47	50.0%	36,809,221	1.56	49.7%

Table L-21-1 Increase of Agricultural production (Financial Analysis) (K7-0-19-1 Sarbaz)

(1,000Rls.)

							I = 12%			
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V	
1	2002	216,939	0	216,939	0	-216,939	0.8929	193,705	0	-193,705
2	2003	216,933	0	216,933	0	-216,933	0.7972	172,939	0	-172,939
3	2004	216,933	0	216,933	0	-216,933	0.7118	154,413	0	-154,413
4	2005	216,933	265,300	482,233	2,628,211	2,145,978	0.6355	306,459	1,670,228	1,363,769
5	2006	216,933	265,300	482,233	2,628,211	2,145,978	0.5674	273,619	1,491,247	1,217,628
6	2007	216,933	265,300	482,233	2,628,211	2,145,978	0.5066	244,299	1,331,452	1,087,153
7	2008	216,933	265,300	482,233	2,628,211	2,145,978	0.4523	218,114	1,188,740	970,626
8	2009	216,933	265,300	482,233	2,628,211	2,145,978	0.4039	194,774	1,061,534	866,760
9	2010	216,933	265,300	482,233	2,628,211	2,145,978	0.3606	173,893	947,733	773,840
10	2011	216,933	265,300	482,233	2,628,211	2,145,978	0.3220	155,279	846,284	691,005
11	2012	216,933	265,300	482,233	2,628,211	2,145,978	0.2875	138,642	755,611	616,969
12	2013	216,933	265,300	482,233	2,628,211	2,145,978	0.2567	123,789	674,662	550,873
13	2014	216,933	265,300	482,233	2,628,211	2,145,978	0.2292	110,528	602,386	491,858
14	2015	216,933	265,300	482,233	2,628,211	2,145,978	0.2046	98,665	537,732	439,067
15	2016	216,933	265,300	482,233	2,628,211	2,145,978	0.1827	88,104	480,174	392,070
16	2017	216,933	265,300	482,233	2,628,211	2,145,978	0.1631	78,652	428,661	350,009
17	2018	216,933	265,300	482,233	2,628,211	2,145,978	0.1456	70,213	382,668	312,455
18	2019	216,933	265,300	482,233	2,628,211	2,145,978	0.1300	62,690	341,667	278,977
19	2020	0	265,300	265,300	2,628,211	2,362,911	0.1161	30,801	305,135	274,334
20	2021		265,300	265,300	2,628,211	2,362,911	0.1037	27,512	272,545	245,033
21	2022		265,300	265,300	2,628,211	2,362,911	0.0926	24,567	243,372	218,805
22	2023		265,300	265,300	2,628,211	2,362,911	0.0826	21,914	217,090	195,176
23	2024		265,300	265,300	2,628,211	2,362,911	0.0738	19,579	193,962	174,383
24	2025		265,300	265,300	2,628,211	2,362,911	0.0659	17,483	173,199	155,716
25	2026		265,300	265,300	2,628,211	2,362,911	0.0588	15,600	154,539	138,939
26	2027		265,300	265,300	2,628,211	2,362,911	0.0525	13,928	137,981	124,053
27	2028		265,300	265,300	2,628,211	2,362,911	0.0469	12,443	123,263	110,820
28	2029		265,300	265,300	2,628,211	2,362,911	0.0419	11,116	110,122	99,006
29	2030		265,300	265,300	2,628,211	2,362,911	0.0374	9,922	98,295	88,373
30	2031		265,300	265,300	2,628,211	2,362,911	0.0334	8,861	87,782	78,921
31	2032		265,300	265,300	2,628,211	2,362,911	0.0298	7,906	78,321	70,415
32	2033		265,300	265,300	2,628,211	2,362,911	0.0266	7,057	69,910	62,853
33	2034		265,300	265,300	2,628,211	2,362,911	0.0238	6,314	62,551	56,237
34	2035		265,300	265,300	2,628,211	2,362,911	0.0212	5,624	55,718	50,094
35	2036		265,300	265,300	2,628,211	2,362,911	0.0189	5,014	49,673	44,659
36	2037		265,300	265,300	2,628,211	2,362,911	0.0169	4,484	44,417	39,933
37	2038		265,300	265,300	2,628,211	2,362,911	0.0151	4,006	39,686	35,680
38	2039		265,300	265,300	2,628,211	2,362,911	0.0135	3,582	35,481	31,899
39	2040		265,300	265,300	2,628,211	2,362,911	0.0120	3,184	31,539	28,355
40	2041		265,300	265,300	2,628,211	2,362,911	0.0107	2,839	28,122	25,283
41	2042		265,300	265,300	2,628,211	2,362,911	0.0096	2,547	25,231	22,684
42	2043		265,300	265,300	2,628,211	2,362,911	0.0086	2,282	22,603	20,321
43	2044		265,300	265,300	2,628,211	2,362,911	0.0076	2,016	19,974	17,958
44	2045		265,300	265,300	2,628,211	2,362,911	0.0068	1,804	17,872	16,068
45	2046		265,300	265,300	2,628,211	2,362,911	0.0061	1,618	16,032	14,414
46	2047		265,300	265,300	2,628,211	2,362,911	0.0054	1,433	14,192	12,759
47	2048		265,300	265,300	2,628,211	2,362,911	0.0049	1,300	12,878	11,578
48	2049		265,300	265,300	2,628,211	2,362,911	0.0043	1,141	11,301	10,160
		3,904,800	11,938,500	15,843,300	118,269,495	102,426,195		3,136,654	15,493,565	12,356,911

N.P.V=	12,356,911
B/C=	4.94
FIRR=	121.7%

Table L-21-2 Collecting and grading center of apple (Financial Analysis) (K7-0-19-1 Sarbaz)

(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	784,980	0	784,980	0	-784,980	0.8929	700,909	0	-700,909
2	2003	784,980	0	784,980	0	-784,980	0.7972	625,786	0	-625,786
3	2004	784,980	0	784,980	0	-784,980	0.7118	558,749	0	-558,749
4	2005	784,980	6,704,610	7,489,590	9,331,200	1,841,610	0.6355	4,759,634	5,929,978	1,170,344
5	2006	784,980	6,704,610	7,489,590	9,331,200	1,841,610	0.5674	4,249,593	5,294,523	1,044,930
6	2007	0	6,704,610	6,704,610	9,331,200	2,626,590	0.5066	3,396,555	4,727,186	1,330,631
7	2008	0	6,704,610	6,704,610	9,331,200	2,626,590	0.4523	3,032,495	4,220,502	1,188,007
8	2009	0	6,704,610	6,704,610	9,331,200	2,626,590	0.4039	2,707,992	3,768,872	1,060,880
9	2010	0	6,704,610	6,704,610	9,331,200	2,626,590	0.3606	2,417,682	3,364,831	947,149
10	2011	0	6,704,610	6,704,610	9,331,200	2,626,590	0.3220	2,158,884	3,004,646	845,762
11	2012	0	6,704,610	6,704,610	9,331,200	2,626,590	0.2875	1,927,575	2,682,720	755,145
12	2013	0	6,704,610	6,704,610	9,331,200	2,626,590	0.2567	1,721,073	2,395,319	674,246
13	2014	0	6,704,610	6,704,610	9,331,200	2,626,590	0.2292	1,536,697	2,138,711	602,014
14	2015	0	6,704,610	6,704,610	9,331,200	2,626,590	0.2046	1,371,763	1,909,164	537,401
15	2016	0	6,704,610	6,704,610	9,331,200	2,626,590	0.1827	1,224,932	1,704,810	479,878
16	2017	0	6,704,610	6,704,610	9,331,200	2,626,590	0.1631	1,093,522	1,521,919	428,397
17	2018	0	6,704,610	6,704,610	9,331,200	2,626,590	0.1456	976,191	1,358,623	382,432
18	2019	0	6,704,610	6,704,610	9,331,200	2,626,590	0.1300	871,599	1,213,056	341,457
19	2020	0	6,704,610	6,704,610	9,331,200	2,626,590	0.1161	778,405	1,083,352	304,947
20	2021		6,704,610	6,704,610	9,331,200	2,626,590	0.1037	695,268	967,645	272,377
21	2022		6,704,610	6,704,610	9,331,200	2,626,590	0.0926	620,847	864,069	243,222
22	2023		6,704,610	6,704,610	9,331,200	2,626,590	0.0826	553,801	770,757	216,956
23	2024		6,704,610	6,704,610	9,331,200	2,626,590	0.0738	494,800	688,643	193,843
24	2025		6,704,610	6,704,610	9,331,200	2,626,590	0.0659	441,834	614,926	173,092
25	2026		6,704,610	6,704,610	9,331,200	2,626,590	0.0588	394,231	548,675	154,444
26	2027		6,704,610	6,704,610	9,331,200	2,626,590	0.0525	351,992	489,888	137,896
27	2028		6,704,610	6,704,610	9,331,200	2,626,590	0.0469	314,446	437,633	123,187
28	2029		6,704,610	6,704,610	9,331,200	2,626,590	0.0419	280,923	390,977	110,054
29	2030		6,704,610	6,704,610	9,331,200	2,626,590	0.0374	250,752	348,987	98,235
30	2031		6,704,610	6,704,610	9,331,200	2,626,590	0.0334	223,934	311,662	87,728
31	2032		6,704,610	6,704,610	9,331,200	2,626,590	0.0298	199,797	278,070	78,273
32	2033		6,704,610	6,704,610	9,331,200	2,626,590	0.0266	178,343	248,210	69,867
33	2034		6,704,610	6,704,610	9,331,200	2,626,590	0.0238	159,570	222,083	62,513
34	2035		6,704,610	6,704,610	9,331,200	2,626,590	0.0212	142,138	197,821	55,683
35	2036		6,704,610	6,704,610	9,331,200	2,626,590	0.0189	126,717	176,360	49,643
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									
		3,924,900	214,547,520	218,472,420	298,598,400	80,125,980		41,539,429	53,874,618	12,335,189

N.P.V=	12,335,189
B/C=	1.30
FIRR=	55.5%

Table L-21-3 Diversification to Milk Cow (Financial Analysis) (K7-0-19-1 Sarbaz)

(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	0	0	0	0	0.8929	0	0	0
2	2003	0	0	0	0	0.7972	0	0	0
3	2004	0	0	0	0	0.7118	0	0	0
4	2005	0	0	0	0	0.6355	0	0	0
5	2006	0	0	0	0	0.5674	0	0	0
6	2007	133,840	373,626	507,466	452,600	0.5066	257,082	229,287	-27,795
7	2008	133,840	747,252	881,092	905,200	0.4523	398,518	409,422	10,904
8	2009	133,840	1,120,878	1,254,718	1,357,800	0.4039	506,781	548,415	41,634
9	2010	133,840	1,494,504	1,628,344	1,810,400	0.3606	587,181	652,830	65,649
10	2011	133,840	1,868,130	2,001,970	2,263,000	0.3220	644,634	728,686	84,052
11	2012	0	1,868,130	1,868,130	2,263,000	0.2875	537,087	650,613	113,526
12	2013	0	1,868,130	1,868,130	2,263,000	0.2567	479,549	580,912	101,363
13	2014	0	1,868,130	1,868,130	2,263,000	0.2292	428,175	518,680	90,505
14	2015	0	1,868,130	1,868,130	2,263,000	0.2046	382,219	463,010	80,791
15	2016	0	1,868,130	1,868,130	2,263,000	0.1827	341,307	413,450	72,143
16	2017	0	1,868,130	1,868,130	2,263,000	0.1631	304,692	369,095	64,403
17	2018	0	1,868,130	1,868,130	2,263,000	0.1456	272,000	329,493	57,493
18	2019	0	1,868,130	1,868,130	2,263,000	0.1300	242,857	294,190	51,333
19	2020	0	1,868,130	1,868,130	2,263,000	0.1161	216,890	262,734	45,844
20	2021		1,868,130	1,868,130	2,263,000	0.1037	193,725	234,673	40,948
21	2022		1,868,130	1,868,130	2,263,000	0.0926	172,989	209,554	36,565
22	2023		1,868,130	1,868,130	2,263,000	0.0826	154,308	186,924	32,616
23	2024		1,868,130	1,868,130	2,263,000	0.0738	137,868	167,009	29,141
24	2025		1,868,130	1,868,130	2,263,000	0.0659	123,110	149,132	26,022
25	2026		1,868,130	1,868,130	2,263,000	0.0588	109,846	133,064	23,218
26	2027		1,868,130	1,868,130	2,263,000	0.0525	98,077	118,808	20,731
27	2028		1,868,130	1,868,130	2,263,000	0.0469	87,615	106,135	18,520
28	2029		1,868,130	1,868,130	2,263,000	0.0419	78,275	94,820	16,545
29	2030		1,868,130	1,868,130	2,263,000	0.0374	69,868	84,636	14,768
30	2031		1,868,130	1,868,130	2,263,000	0.0334	62,396	75,584	13,188
31	2032		1,868,130	1,868,130	2,263,000	0.0298	55,670	67,437	11,767
32	2033		1,868,130	1,868,130	2,263,000	0.0266	49,692	60,196	10,504
33	2034		1,868,130	1,868,130	2,263,000	0.0238	44,461	53,859	9,398
34	2035		1,868,130	1,868,130	2,263,000	0.0212	39,604	47,976	8,372
35	2036		1,868,130	1,868,130	2,263,000	0.0189	35,308	42,771	7,463
36	2037		1,868,130	1,868,130	2,263,000	0.0169	31,571	38,245	6,674
37	2038		1,868,130	1,868,130	2,263,000	0.0151	28,209	34,171	5,962
38	2039		1,868,130	1,868,130	2,263,000	0.0135	25,220	30,551	5,331
39	2040		1,868,130	1,868,130	2,263,000	0.0120	22,418	27,156	4,738
40	2041		1,868,130	1,868,130	2,263,000	0.0107	19,989	24,214	4,225
41	2042								
42	2043								
43	2044								
44	2045								
45	2046								
46	2047								
47	2048								
48	2049								
		669,200	61,648,290	62,317,490	74,679,000	12,361,510	7,239,191	8,437,732	1,198,541

N.P.V=	1,198,541
B/C=	1.17
FIRR=	143.9%

Table L-21-4 Rural water supply (Financial Analysis) (K7-0-19-1 Sarbaz)

(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	143,566	0	143,566	0	-143,566	0.8929	128,190	0	-128,190
2	2003	143,567	0	143,567	0	-143,567	0.7972	114,452	0	-114,452
3	2004	143,567	0	143,567	0	-143,567	0.7118	102,191	0	-102,191
4	2005	0	113,200	113,200	109,180	-4,020	0.6355	71,939	69,384	-2,555
5	2006	0	113,200	113,200	109,180	-4,020	0.5674	64,230	61,949	-2,281
6	2007	0	113,200	113,200	109,180	-4,020	0.5066	57,347	55,311	-2,036
7	2008	0	113,200	113,200	109,180	-4,020	0.4523	51,200	49,382	-1,818
8	2009	0	113,200	113,200	109,180	-4,020	0.4039	45,721	44,098	-1,623
9	2010	0	113,200	113,200	109,180	-4,020	0.3606	40,820	39,370	-1,450
10	2011	0	113,200	113,200	109,180	-4,020	0.3220	36,450	35,156	-1,294
11	2012	0	113,200	113,200	109,180	-4,020	0.2875	32,545	31,389	-1,156
12	2013	0	113,200	113,200	109,180	-4,020	0.2567	29,058	28,027	-1,031
13	2014	0	113,200	113,200	109,180	-4,020	0.2292	25,945	25,024	-921
14	2015	0	113,200	113,200	109,180	-4,020	0.2046	23,161	22,338	-823
15	2016	0	113,200	113,200	109,180	-4,020	0.1827	20,682	19,947	-735
16	2017	0	113,200	113,200	109,180	-4,020	0.1631	18,463	17,807	-656
17	2018	0	113,200	113,200	109,180	-4,020	0.1456	16,482	15,897	-585
18	2019	0	113,200	113,200	109,180	-4,020	0.1300	14,716	14,193	-523
19	2020	0	113,200	113,200	109,180	-4,020	0.1161	13,143	12,676	-467
20	2021		113,200	113,200	109,180	-4,020	0.1037	11,739	11,322	-417
21	2022		113,200	113,200	109,180	-4,020	0.0926	10,482	10,110	-372
22	2023		113,200	113,200	109,180	-4,020	0.0826	9,350	9,018	-332
23	2024		113,200	113,200	109,180	-4,020	0.0738	8,354	8,057	-297
24	2025		113,200	113,200	109,180	-4,020	0.0659	7,460	7,195	-265
25	2026		113,200	113,200	109,180	-4,020	0.0588	6,656	6,420	-236
26	2027		113,200	113,200	109,180	-4,020	0.0525	5,943	5,732	-211
27	2028		113,200	113,200	109,180	-4,020	0.0469	5,309	5,121	-188
28	2029		113,200	113,200	109,180	-4,020	0.0419	4,743	4,575	-168
29	2030		113,200	113,200	109,180	-4,020	0.0374	4,234	4,083	-151
30	2031		113,200	113,200	109,180	-4,020	0.0334	3,781	3,647	-134
31	2032		113,200	113,200	109,180	-4,020	0.0298	3,373	3,254	-119
32	2033		113,200	113,200	109,180	-4,020	0.0266	3,011	2,904	-107
33	2034		113,200	113,200	109,180	-4,020	0.0238	2,694	2,598	-96
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									
		430,700	3,396,000	3,826,700	3,275,400	-551,300		993,864	625,984	-367,880

N.P.V=	-367,880
B/C=	0.63
FIRR=	#DIV/0!

Table L-21-5 Rural road improvement (Financial Analysis) (K7-0-19-1 Sarbaz)

(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	1,290,900	0	1,290,900	0	-1,290,900	0.8929	1,152,645	0	-1,152,645
2	2003	1,290,900	0	1,290,900	0	-1,290,900	0.7972	1,029,105	0	-1,029,105
3	2004	1,290,900	0	1,290,900	0	-1,290,900	0.7118	918,863	0	-918,863
4	2005	0	144,500	144,500	1,349,650	1,205,150	0.6355	91,830	857,703	765,873
5	2006	0	144,500	144,500	1,349,650	1,205,150	0.5674	81,989	765,791	683,802
6	2007	0	144,500	144,500	1,349,650	1,205,150	0.5066	73,204	683,733	610,529
7	2008	0	144,500	144,500	1,349,650	1,205,150	0.4523	65,357	610,447	545,090
8	2009	0	144,500	144,500	1,349,650	1,205,150	0.4039	58,364	545,124	486,760
9	2010	0	144,500	144,500	1,349,650	1,205,150	0.3606	52,107	486,684	434,577
10	2011	0	144,500	144,500	1,349,650	1,205,150	0.3220	46,529	434,587	388,058
11	2012	0	144,500	144,500	1,349,650	1,205,150	0.2875	41,544	388,024	346,480
12	2013	0	144,500	144,500	1,349,650	1,205,150	0.2567	37,093	346,455	309,362
13	2014	0	144,500	144,500	1,349,650	1,205,150	0.2292	33,119	309,340	276,221
14	2015	0	144,500	144,500	1,349,650	1,205,150	0.2046	29,565	276,138	246,573
15	2016	0	144,500	144,500	1,349,650	1,205,150	0.1827	26,400	246,581	220,181
16	2017	0	144,500	144,500	1,349,650	1,205,150	0.1631	23,568	220,128	196,560
17	2018	0	144,500	144,500	1,349,650	1,205,150	0.1456	21,039	196,509	175,470
18	2019	0	144,500	144,500	1,349,650	1,205,150	0.1300	18,785	175,455	156,670
19	2020	0	144,500	144,500	1,349,650	1,205,150	0.1161	16,776	156,694	139,918
20	2021		144,500	144,500	1,349,650	1,205,150	0.1037	14,985	139,959	124,974
21	2022		144,500	144,500	1,349,650	1,205,150	0.0926	13,381	124,978	111,597
22	2023		144,500	144,500	1,349,650	1,205,150	0.0826	11,936	111,481	99,545
23	2024		144,500	144,500	1,349,650	1,205,150	0.0738	10,664	99,604	88,940
24	2025		144,500	144,500	1,349,650	1,205,150	0.0659	9,523	88,942	79,419
25	2026		144,500	144,500	1,349,650	1,205,150	0.0588	8,497	79,359	70,862
26	2027		144,500	144,500	1,349,650	1,205,150	0.0525	7,586	70,857	63,271
27	2028		144,500	144,500	1,349,650	1,205,150	0.0469	6,777	63,299	56,522
28	2029		144,500	144,500	1,349,650	1,205,150	0.0419	6,055	56,550	50,495
29	2030		144,500	144,500	1,349,650	1,205,150	0.0374	5,404	50,477	45,073
30	2031		144,500	144,500	1,349,650	1,205,150	0.0334	4,826	45,078	40,252
31	2032		144,500	144,500	1,349,650	1,205,150	0.0298	4,306	40,220	35,914
32	2033		144,500	144,500	1,349,650	1,205,150	0.0266	3,844	35,901	32,057
33	2034		144,500	144,500	1,349,650	1,205,150	0.0238	3,439	32,122	28,683
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									
		3,872,700	4,335,000	8,207,700	40,489,500	32,281,800		3,929,105	7,738,220	3,809,115

N.P.V=	3,809,115
B/C=	1.97
FIRR=	24.6%

Table L-21-6 Establishment of cooperative (Financial Analysis) (K7-0-19-1 Sarbaz)

(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	77,761	0	77,761	0	-77,761	0.8929	69,433	0	-69,433
2	2003	77,767	0	77,767	0	-77,767	0.7972	61,996	0	-61,996
3	2004	77,767	0	77,767	0	-77,767	0.7118	55,355	0	-55,355
4	2005	77,767	1,634,050	1,711,817	2,104,000	392,183	0.6355	1,087,860	1,337,092	249,232
5	2006	77,767	1,634,050	1,711,817	2,104,000	392,183	0.5674	971,285	1,193,810	222,525
6	2007	77,767	1,634,050	1,711,817	2,104,000	392,183	0.5066	867,206	1,065,886	198,680
7	2008	77,767	1,634,050	1,711,817	2,104,000	392,183	0.4523	774,255	951,639	177,384
8	2009	77,767	1,634,050	1,711,817	2,104,000	392,183	0.4039	691,403	849,806	158,403
9	2010	77,767	1,634,050	1,711,817	2,104,000	392,183	0.3606	617,281	758,702	141,421
10	2011	77,767	1,634,050	1,711,817	2,104,000	392,183	0.3220	551,205	677,488	126,283
11	2012	77,767	1,634,050	1,711,817	2,104,000	392,183	0.2875	492,147	604,900	112,753
12	2013	77,767	1,634,050	1,711,817	2,104,000	392,183	0.2567	439,423	540,097	100,674
13	2014	77,767	1,634,050	1,711,817	2,104,000	392,183	0.2292	392,348	482,237	89,889
14	2015	77,767	1,634,050	1,711,817	2,104,000	392,183	0.2046	350,238	430,478	80,240
15	2016	77,767	1,634,050	1,711,817	2,104,000	392,183	0.1827	312,749	384,401	71,652
16	2017	77,767	1,634,050	1,711,817	2,104,000	392,183	0.1631	279,197	343,162	63,965
17	2018	77,767	1,634,050	1,711,817	2,104,000	392,183	0.1456	249,241	306,342	57,101
18	2019	77,767	1,634,050	1,711,817	2,104,000	392,183	0.1300	222,536	273,520	50,984
19	2020	0	1,634,050	1,634,050	2,104,000	469,950	0.1161	189,713	244,274	54,561
20	2021		1,634,050	1,634,050	2,104,000	469,950	0.1037	169,451	218,185	48,734
21	2022		1,634,050	1,634,050	2,104,000	469,950	0.0926	151,313	194,830	43,517
22	2023		1,634,050	1,634,050	2,104,000	469,950	0.0826	134,973	173,790	38,817
23	2024		1,634,050	1,634,050	2,104,000	469,950	0.0738	120,593	155,275	34,682
24	2025		1,634,050	1,634,050	2,104,000	469,950	0.0659	107,684	138,654	30,970
25	2026		1,634,050	1,634,050	2,104,000	469,950	0.0588	96,082	123,715	27,633
26	2027		1,634,050	1,634,050	2,104,000	469,950	0.0525	85,788	110,460	24,672
27	2028		1,634,050	1,634,050	2,104,000	469,950	0.0469	76,637	98,678	22,041
28	2029		1,634,050	1,634,050	2,104,000	469,950	0.0419	68,467	88,158	19,691
29	2030		1,634,050	1,634,050	2,104,000	469,950	0.0374	61,113	78,690	17,577
30	2031		1,634,050	1,634,050	2,104,000	469,950	0.0334	54,577	70,274	15,697
31	2032		1,634,050	1,634,050	2,104,000	469,950	0.0298	48,695	62,699	14,004
32	2033		1,634,050	1,634,050	2,104,000	469,950	0.0266	43,466	55,966	12,500
33	2034		1,634,050	1,634,050	2,104,000	469,950	0.0238	38,890	50,075	11,185
34	2035		1,634,050	1,634,050	2,104,000	469,950	0.0212	34,642	44,605	9,963
35	2036		1,634,050	1,634,050	2,104,000	469,950	0.0189	30,884	39,766	8,882
36	2037		1,634,050	1,634,050	2,104,000	469,950	0.0169	27,615	35,558	7,943
37	2038		1,634,050	1,634,050	2,104,000	469,950	0.0151	24,674	31,770	7,096
38	2039		1,634,050	1,634,050	2,104,000	469,950	0.0135	22,060	28,404	6,344
39	2040		1,634,050	1,634,050	2,104,000	469,950	0.0120	19,609	25,248	5,639
40	2041		1,634,050	1,634,050	2,104,000	469,950	0.0107	17,484	22,513	5,029
41	2042		1,634,050	1,634,050	2,104,000	469,950	0.0096	15,687	20,198	4,511
42	2043		1,634,050	1,634,050	2,104,000	469,950	0.0086	14,053	18,094	4,041
43	2044		1,634,050	1,634,050	2,104,000	469,950	0.0076	12,419	15,990	3,571
44	2045		1,634,050	1,634,050	2,104,000	469,950	0.0068	11,112	14,307	3,195
45	2046		1,634,050	1,634,050	2,104,000	469,950	0.0061	9,968	12,834	2,866
46	2047		1,634,050	1,634,050	2,104,000	469,950	0.0054	8,824	11,362	2,538
47	2048		1,634,050	1,634,050	2,104,000	469,950	0.0049	8,007	10,310	2,303
48	2049		1,634,050	1,634,050	2,104,000	469,950	0.0043	7,026	9,047	2,021
		1,399,800	73,532,250	74,932,050	94,680,000	19,747,950		10,196,664	12,403,289	2,206,625

N.P.V=	2,206,625
B/C=	1.22
FIRR=	82.1%

Table L-21-7 Financial Evaluation of the Proposed Projects (Grand Total) (K7-0-19-1 Sarbaz)

(1,000Rs.)

Year	Total cost	Total benefit	Net Benefit	I = 12%			
				Discount Rate	Cost	Benefit	N.P.V
1	2,514,147	0	-2,514,147	0.8929	2,244,882	0	-2,244,882
2	2,514,148	0	-2,514,148	0.7972	2,004,279	0	-2,004,279
3	2,514,148	0	-2,514,148	0.7118	1,789,571	0	-1,789,571
4	9,941,341	15,522,241	5,580,900	0.6355	6,317,722	9,864,384	3,546,662
5	9,941,341	15,522,241	5,580,900	0.5674	5,640,717	8,807,320	3,166,603
6	9,663,827	15,974,841	6,311,014	0.5066	4,895,695	8,092,854	3,197,159
7	10,037,453	16,427,441	6,389,988	0.4523	4,539,940	7,430,132	2,890,192
8	10,411,079	16,880,041	6,468,962	0.4039	4,205,035	6,817,849	2,612,814
9	10,784,705	17,332,641	6,547,936	0.3606	3,888,965	6,250,150	2,361,185
10	11,158,331	17,785,241	6,626,910	0.3220	3,592,983	5,726,848	2,133,865
11	11,024,491	17,785,241	6,760,750	0.2875	3,169,541	5,113,257	1,943,716
12	11,024,491	17,785,241	6,760,750	0.2567	2,829,987	4,565,471	1,735,484
13	11,024,491	17,785,241	6,760,750	0.2292	2,526,813	4,076,377	1,549,564
14	11,024,491	17,785,241	6,760,750	0.2046	2,255,611	3,638,860	1,383,249
15	11,024,491	17,785,241	6,760,750	0.1827	2,014,175	3,249,364	1,235,189
16	11,024,491	17,785,241	6,760,750	0.1631	1,798,094	2,900,773	1,102,679
17	11,024,491	17,785,241	6,760,750	0.1456	1,605,166	2,589,531	984,365
18	11,024,491	17,785,241	6,760,750	0.1300	1,433,184	2,312,081	878,897
19	10,729,790	17,785,241	7,055,451	0.1161	1,245,729	2,064,866	819,137
20	10,729,790	17,785,241	7,055,451	0.1037	1,112,679	1,844,329	731,650
21	10,729,790	17,785,241	7,055,451	0.0926	993,579	1,646,913	653,334
22	10,729,790	17,785,241	7,055,451	0.0826	886,281	1,469,061	582,780
23	10,729,790	17,785,241	7,055,451	0.0738	791,859	1,312,551	520,692
24	10,729,790	17,785,241	7,055,451	0.0659	707,093	1,172,047	464,954
25	10,729,790	17,785,241	7,055,451	0.0588	630,912	1,045,772	414,860
26	10,729,790	17,785,241	7,055,451	0.0525	563,314	933,725	370,411
27	10,729,790	17,785,241	7,055,451	0.0469	503,227	834,128	330,901
28	10,729,790	17,785,241	7,055,451	0.0419	449,578	745,202	295,624
29	10,729,790	17,785,241	7,055,451	0.0374	401,294	665,168	263,874
30	10,729,790	17,785,241	7,055,451	0.0334	358,375	594,027	235,652
31	10,729,790	17,785,241	7,055,451	0.0298	319,748	530,000	210,252
32	10,729,790	17,785,241	7,055,451	0.0266	285,412	473,087	187,675
33	10,729,790	17,785,241	7,055,451	0.0238	255,369	423,289	167,920
34	10,729,790	17,785,241	7,055,451	0.0212	227,472	377,047	149,575
35	10,729,790	17,785,241	7,055,451	0.0189	202,793	336,141	133,348
36	10,729,790	17,785,241	7,055,451	0.0169	181,333	300,571	119,238
37	10,729,790	17,785,241	7,055,451	0.0151	162,020	268,557	106,537
38	10,729,790	17,785,241	7,055,451	0.0135	144,852	240,101	95,249
39	10,729,790	17,785,241	7,055,451	0.0120	128,757	213,423	84,666
40	10,729,790	17,785,241	7,055,451	0.0107	114,809	190,302	75,493
41	10,729,790	17,785,241	7,055,451	0.0096	103,006	170,738	67,732
42	10,729,790	17,785,241	7,055,451	0.0086	92,276	152,953	60,677
43	10,729,790	17,785,241	7,055,451	0.0076	81,546	135,168	53,622
44	10,729,790	17,785,241	7,055,451	0.0068	72,963	120,940	47,977
45	10,729,790	17,785,241	7,055,451	0.0061	65,452	108,490	43,038
46	10,729,790	17,785,241	7,055,451	0.0054	57,941	96,040	38,099
47	10,729,790	17,785,241	7,055,451	0.0049	52,576	87,148	34,572
48	10,729,790	17,785,241	7,055,451	0.0043	46,138	76,477	30,339
489,570,148					67,990,743	100,063,512	32,072,769

N.P.V=	32,072,769
B/C=	1.47
EIRR=	50.0%

Table L-21-8 Construction of check dam (Economic Analysis) (K7-0-19-1 Sarbaz)

(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	528,500	0	528,500	0	-528,500	0.8929	471,898	0	-471,898
2	2003	528,500	0	528,500	0	-528,500	0.7972	421,320	0	-421,320
3	2004	528,500	0	528,500	0	-528,500	0.7118	376,186	0	-376,186
4	2005	528,500	42,900	571,400	914,550	343,150	0.6355	363,125	581,197	218,072
5	2006	528,500	42,900	571,400	914,550	343,150	0.5674	324,212	518,916	194,704
6	2007	528,500	42,900	571,400	914,550	343,150	0.5066	289,471	463,311	173,840
7	2008	528,500	42,900	571,400	914,550	343,150	0.4523	258,444	413,651	155,207
8	2009	528,500	42,900	571,400	914,550	343,150	0.4039	230,788	369,387	138,599
9	2010	0	42,900	42,900	914,550	871,650	0.3606	15,470	329,787	314,317
10	2011	0	42,900	42,900	914,550	871,650	0.3220	13,814	294,485	280,671
11	2012	0	42,900	42,900	914,550	871,650	0.2875	12,334	262,933	250,599
12	2013	0	42,900	42,900	914,550	871,650	0.2567	11,012	234,765	223,753
13	2014	0	42,900	42,900	914,550	871,650	0.2292	9,833	209,615	199,782
14	2015	0	42,900	42,900	914,550	871,650	0.2046	8,777	187,117	178,340
15	2016	0	42,900	42,900	914,550	871,650	0.1827	7,838	167,088	159,250
16	2017	0	42,900	42,900	914,550	871,650	0.1631	6,997	149,163	142,166
17	2018	0	42,900	42,900	914,550	871,650	0.1456	6,246	133,158	126,912
18	2019	0	42,900	42,900	914,550	871,650	0.1300	5,577	118,892	113,315
19	2020	0	42,900	42,900	914,550	871,650	0.1161	4,981	106,179	101,198
20	2021		42,900	42,900	914,550	871,650	0.1037	4,449	94,839	90,390
21	2022		42,900	42,900	914,550	871,650	0.0926	3,973	84,687	80,714
22	2023		42,900	42,900	914,550	871,650	0.0826	3,544	75,542	71,998
23	2024		42,900	42,900	914,550	871,650	0.0738	3,166	67,494	64,328
24	2025		42,900	42,900	914,550	871,650	0.0659	2,827	60,269	57,442
25	2026		42,900	42,900	914,550	871,650	0.0588	2,523	53,776	51,253
26	2027		42,900	42,900	914,550	871,650	0.0525	2,252	48,014	45,762
27	2028		42,900	42,900	914,550	871,650	0.0469	2,012	42,892	40,880
28	2029		42,900	42,900	914,550	871,650	0.0419	1,798	38,320	36,522
29	2030		42,900	42,900	914,550	871,650	0.0374	1,604	34,204	32,600
30	2031		42,900	42,900	914,550	871,650	0.0334	1,433	30,546	29,113
31	2032		42,900	42,900	914,550	871,650	0.0298	1,278	27,254	25,976
32	2033		42,900	42,900	914,550	871,650	0.0266	1,141	24,327	23,186
33	2034		42,900	42,900	914,550	871,650	0.0238	1,021	21,766	20,745
34	2035		42,900	42,900	914,550	871,650	0.0212	909	19,388	18,479
35	2036		42,900	42,900	914,550	871,650	0.0189	811	17,285	16,474
36	2037		42,900	42,900	914,550	871,650	0.0169	725	15,456	14,731
37	2038		42,900	42,900	914,550	871,650	0.0151	648	13,810	13,162
38	2039		42,900	42,900	914,550	871,650	0.0135	579	12,346	11,767
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		4,228,000	1,501,500	5,729,500	32,009,250	26,279,750		2,875,016	5,321,859	2,446,843

N.P.V=	2,446,843
B/C=	1.85
EIRR=	25.4%

Table L-21-9 River treatment (Economic Analysis) (K7-0-19-1 Sarbaz)

(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	0	0	0	0	0.8929	0	0	0	
2	2003	0	0	0	0	0.7972	0	0	0	
3	2004	0	0	0	0	0.7118	0	0	0	
4	2005	0	0	0	0	0.6355	0	0	0	
5	2006	0	0	0	0	0.5674	0	0	0	
6	2007	0	0	0	0	0.5066	0	0	0	
7	2008	0	0	0	0	0.4523	0	0	0	
8	2009	0	0	0	0	0.4039	0	0	0	
9	2010	1,009,600	0	1,009,600	0	0.3606	364,062	0	-364,062	
10	2011	1,009,600	0	1,009,600	0	0.3220	325,091	0	-325,091	
11	2012	1,009,600	0	1,009,600	0	0.2875	290,260	0	-290,260	
12	2013	1,009,600	62,400	1,072,000	367,240	0.2567	275,182	94,271	-180,911	
13	2014	1,009,600	62,400	1,072,000	367,240	0.2292	245,702	84,171	-161,531	
14	2015	0	62,400	62,400	367,240	0.2046	12,767	75,137	62,370	
15	2016	0	62,400	62,400	367,240	0.1827	11,400	67,095	55,695	
16	2017	0	62,400	62,400	367,240	0.1631	10,177	59,897	49,720	
17	2018	0	62,400	62,400	367,240	0.1456	9,085	53,470	44,385	
18	2019	0	62,400	62,400	367,240	0.1300	8,112	47,741	39,629	
19	2020	0	62,400	62,400	367,240	0.1161	7,245	42,637	35,392	
20	2021		62,400	62,400	367,240	0.1037	6,471	38,083	31,612	
21	2022		62,400	62,400	367,240	0.0926	5,778	34,006	28,228	
22	2023		62,400	62,400	367,240	0.0826	5,154	30,334	25,180	
23	2024		62,400	62,400	367,240	0.0738	4,605	27,102	22,497	
24	2025		62,400	62,400	367,240	0.0659	4,112	24,201	20,089	
25	2026		62,400	62,400	367,240	0.0588	3,669	21,594	17,925	
26	2027		62,400	62,400	367,240	0.0525	3,276	19,280	16,004	
27	2028		62,400	62,400	367,240	0.0469	2,927	17,224	14,297	
28	2029		62,400	62,400	367,240	0.0419	2,615	15,387	12,772	
29	2030		62,400	62,400	367,240	0.0374	2,334	13,735	11,401	
30	2031		62,400	62,400	367,240	0.0334	2,084	12,266	10,182	
31	2032		62,400	62,400	367,240	0.0298	1,860	10,944	9,084	
32	2033		62,400	62,400	367,240	0.0266	1,660	9,769	8,109	
33	2034		62,400	62,400	367,240	0.0238	1,485	8,740	7,255	
34	2035		62,400	62,400	367,240	0.0212	1,323	7,785	6,462	
35	2036		62,400	62,400	367,240	0.0189	1,179	6,941	5,762	
36	2037		62,400	62,400	367,240	0.0169	1,055	6,206	5,151	
37	2038		62,400	62,400	367,240	0.0151	942	5,545	4,603	
38	2039		62,400	62,400	367,240	0.0135	842	4,958	4,116	
39	2040		62,400	62,400	367,240	0.0120	749	4,407	3,658	
40	2041		62,400	62,400	367,240	0.0107	668	3,929	3,261	
41	2042		62,400	62,400	367,240	0.0096	599	3,526	2,927	
42	2043		62,400	62,400	367,240	0.0086	537	3,158	2,621	
43	2044		62,400	62,400	367,240	0.0076	474	2,791	2,317	
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		5,048,000	1,996,800	7,044,800	11,751,680	4,706,880	1,615,481	856,330	-759,151	

N.P.V=	-759,151
B/C=	0.53
EIRR=	#NUM!

Table L-21-10 Landslide protection (Economic Analysis) (K7-0-19-1 Sarbaz)

(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	126,250	0	126,250	0	-126,250	0.8929	112,729	0	-112,729
2	2003	126,250	0	126,250	0	-126,250	0.7972	100,647	0	-100,647
3	2004	126,250	0	126,250	0	-126,250	0.7118	89,865	0	-89,865
4	2005	126,250	51,900	178,150	397,480	219,330	0.6355	113,214	252,599	139,385
5	2006	126,250	51,900	178,150	397,480	219,330	0.5674	101,082	225,530	124,448
6	2007	126,250	51,900	178,150	397,480	219,330	0.5066	90,251	201,363	111,112
7	2008	126,250	51,900	178,150	397,480	219,330	0.4523	80,577	179,780	99,203
8	2009	126,250	51,900	178,150	397,480	219,330	0.4039	71,955	160,542	88,587
9	2010	0	51,900	51,900	397,480	345,580	0.3606	18,715	143,331	124,616
10	2011	0	51,900	51,900	397,480	345,580	0.3220	16,712	127,989	111,277
11	2012	0	51,900	51,900	397,480	345,580	0.2875	14,921	114,276	99,355
12	2013	0	51,900	51,900	397,480	345,580	0.2567	13,323	102,033	88,710
13	2014	0	51,900	51,900	397,480	345,580	0.2292	11,895	91,102	79,207
14	2015	0	51,900	51,900	397,480	345,580	0.2046	10,619	81,324	70,705
15	2016	0	51,900	51,900	397,480	345,580	0.1827	9,482	72,620	63,138
16	2017	0	51,900	51,900	397,480	345,580	0.1631	8,465	64,829	56,364
17	2018	0	51,900	51,900	397,480	345,580	0.1456	7,557	57,873	50,316
18	2019	0	51,900	51,900	397,480	345,580	0.1300	6,747	51,672	44,925
19	2020	0	51,900	51,900	397,480	345,580	0.1161	6,026	46,147	40,121
20	2021		51,900	51,900	397,480	345,580	0.1037	5,382	41,219	35,837
21	2022		51,900	51,900	397,480	345,580	0.0926	4,806	36,807	32,001
22	2023		51,900	51,900	397,480	345,580	0.0826	4,287	32,832	28,545
23	2024		51,900	51,900	397,480	345,580	0.0738	3,830	29,334	25,504
24	2025		51,900	51,900	397,480	345,580	0.0659	3,420	26,194	22,774
25	2026		51,900	51,900	397,480	345,580	0.0588	3,052	23,372	20,320
26	2027		51,900	51,900	397,480	345,580	0.0525	2,725	20,868	18,143
27	2028		51,900	51,900	397,480	345,580	0.0469	2,434	18,642	16,208
28	2029		51,900	51,900	397,480	345,580	0.0419	2,175	16,654	14,479
29	2030		51,900	51,900	397,480	345,580	0.0374	1,941	14,866	12,925
30	2031		51,900	51,900	397,480	345,580	0.0334	1,733	13,276	11,543
31	2032		51,900	51,900	397,480	345,580	0.0298	1,547	11,845	10,298
32	2033		51,900	51,900	397,480	345,580	0.0266	1,381	10,573	9,192
33	2034		51,900	51,900	397,480	345,580	0.0238	1,235	9,460	8,225
34	2035		51,900	51,900	397,480	345,580	0.0212	1,100	8,427	7,327
35	2036		51,900	51,900	397,480	345,580	0.0189	981	7,512	6,531
36	2037		51,900	51,900	397,480	345,580	0.0169	877	6,717	5,840
37	2038		51,900	51,900	397,480	345,580	0.0151	784	6,002	5,218
38	2039		51,900	51,900	397,480	345,580	0.0135	701	5,366	4,665
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		1,010,000	1,816,500	2,826,500	13,911,800	11,085,300		929,173	2,312,976	1,383,803

N.P.V= 1,383,803

B/C= 2.49

EIRR= 42.7%

Table L-21-11 Soil erosion protection (Economic Analysis) (K7-0-19-1 Sarbaz)

(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	26,122	0	26,122	0	-26,122	0.8929	23,324	0	-23,324
2	2003	26,120	0	26,120	0	-26,120	0.7972	20,823	0	-20,823
3	2004	26,120	0	26,120	0	-26,120	0.7118	18,592	0	-18,592
4	2005	26,120	9,700	35,820	38,070	2,250	0.6355	22,764	24,193	1,429
5	2006	26,120	9,700	35,820	38,070	2,250	0.5674	20,324	21,601	1,277
6	2007	26,120	9,700	35,820	38,070	2,250	0.5066	18,146	19,286	1,140
7	2008	26,120	9,700	35,820	38,070	2,250	0.4523	16,201	17,219	1,018
8	2009	26,120	9,700	35,820	38,070	2,250	0.4039	14,468	15,376	908
9	2010	0	9,700	9,700	38,070	28,370	0.3606	3,498	13,728	10,230
10	2011	0	9,700	9,700	38,070	28,370	0.3220	3,123	12,259	9,136
11	2012	0	9,700	9,700	38,070	28,370	0.2875	2,789	10,945	8,156
12	2013	0	9,700	9,700	38,070	28,370	0.2567	2,490	9,773	7,283
13	2014	0	9,700	9,700	38,070	28,370	0.2292	2,223	8,726	6,503
14	2015	0	9,700	9,700	38,070	28,370	0.2046	1,985	7,789	5,804
15	2016	0	9,700	9,700	38,070	28,370	0.1827	1,772	6,955	5,183
16	2017	0	9,700	9,700	38,070	28,370	0.1631	1,582	6,209	4,627
17	2018	0	9,700	9,700	38,070	28,370	0.1456	1,412	5,543	4,131
18	2019	0	9,700	9,700	38,070	28,370	0.1300	1,261	4,949	3,688
19	2020	0	9,700	9,700	38,070	28,370	0.1161	1,126	4,420	3,294
20	2021		9,700	9,700	38,070	28,370	0.1037	1,006	3,948	2,942
21	2022		9,700	9,700	38,070	28,370	0.0926	898	3,525	2,627
22	2023		9,700	9,700	38,070	28,370	0.0826	801	3,145	2,344
23	2024		9,700	9,700	38,070	28,370	0.0738	716	2,810	2,094
24	2025		9,700	9,700	38,070	28,370	0.0659	639	2,509	1,870
25	2026		9,700	9,700	38,070	28,370	0.0588	570	2,239	1,669
26	2027		9,700	9,700	38,070	28,370	0.0525	509	1,999	1,490
27	2028		9,700	9,700	38,070	28,370	0.0469	455	1,785	1,330
28	2029		9,700	9,700	38,070	28,370	0.0419	406	1,595	1,189
29	2030		9,700	9,700	38,070	28,370	0.0374	363	1,424	1,061
30	2031		9,700	9,700	38,070	28,370	0.0334	324	1,272	948
31	2032		9,700	9,700	38,070	28,370	0.0298	289	1,134	845
32	2033		9,700	9,700	38,070	28,370	0.0266	258	1,013	755
33	2034		9,700	9,700	38,070	28,370	0.0238	231	906	675
34	2035		9,700	9,700	38,070	28,370	0.0212	206	807	601
35	2036		9,700	9,700	38,070	28,370	0.0189	183	720	537
36	2037		9,700	9,700	38,070	28,370	0.0169	164	643	479
37	2038		9,700	9,700	38,070	28,370	0.0151	146	575	429
38	2039		9,700	9,700	38,070	28,370	0.0135	131	514	383
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		208,962	339,500	548,462	1,332,450	783,988		186,198	221,534	35,336

N.P.V=	35,336
B/C=	1.19
EIRR=	15.9%

Table L-21-12 Rangeland vegetation improvement (Economic Analysis) (K7-0-19-1 Sarbaz)

(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	1,550	0	1,550	0	-1,550	0.8929	1,384	0	-1,384
2	2003	1,550	0	1,550	0	-1,550	0.7972	1,236	0	-1,236
3	2004	1,550	0	1,550	0	-1,550	0.7118	1,103	0	-1,103
4	2005	1,550	6,900	8,450	172,770	164,320	0.6355	5,370	109,795	104,425
5	2006	1,550	6,900	8,450	172,770	164,320	0.5674	4,795	98,030	93,235
6	2007	1,550	6,900	8,450	172,770	164,320	0.5066	4,281	87,525	83,244
7	2008	1,550	6,900	8,450	172,770	164,320	0.4523	3,822	78,144	74,322
8	2009	1,550	6,900	8,450	172,770	164,320	0.4039	3,413	69,782	66,369
9	2010	1,550	6,900	8,450	172,770	164,320	0.3606	3,047	62,301	59,254
10	2011	1,550	6,900	8,450	172,770	164,320	0.3220	2,721	55,632	52,911
11	2012	0	6,900	6,900	172,770	165,870	0.2875	1,984	49,671	47,687
12	2013	0	6,900	6,900	172,770	165,870	0.2567	1,771	44,350	42,579
13	2014	0	6,900	6,900	172,770	165,870	0.2292	1,581	39,599	38,018
14	2015	0	6,900	6,900	172,770	165,870	0.2046	1,412	35,349	33,937
15	2016	0	6,900	6,900	172,770	165,870	0.1827	1,261	31,565	30,304
16	2017	0	6,900	6,900	172,770	165,870	0.1631	1,125	28,179	27,054
17	2018	0	6,900	6,900	172,770	165,870	0.1456	1,005	25,155	24,150
18	2019	0	6,900	6,900	172,770	165,870	0.1300	897	22,460	21,563
19	2020	0	6,900	6,900	172,770	165,870	0.1161	801	20,059	19,258
20	2021		6,900	6,900	172,770	165,870	0.1037	716	17,916	17,200
21	2022		6,900	6,900	172,770	165,870	0.0926	639	15,999	15,360
22	2023		6,900	6,900	172,770	165,870	0.0826	570	14,271	13,701
23	2024		6,900	6,900	172,770	165,870	0.0738	509	12,750	12,241
24	2025		6,900	6,900	172,770	165,870	0.0659	455	11,386	10,931
25	2026		6,900	6,900	172,770	165,870	0.0588	406	10,159	9,753
26	2027		6,900	6,900	172,770	165,870	0.0525	362	9,070	8,708
27	2028		6,900	6,900	172,770	165,870	0.0469	324	8,103	7,779
28	2029		6,900	6,900	172,770	165,870	0.0419	289	7,239	6,950
29	2030		6,900	6,900	172,770	165,870	0.0374	258	6,462	6,204
30	2031		6,900	6,900	172,770	165,870	0.0334	230	5,771	5,541
31	2032		6,900	6,900	172,770	165,870	0.0298	206	5,149	4,943
32	2033		6,900	6,900	172,770	165,870	0.0266	184	4,596	4,412
33	2034		6,900	6,900	172,770	165,870	0.0238	164	4,112	3,948
34	2035		6,900	6,900	172,770	165,870	0.0212	146	3,663	3,517
35	2036		6,900	6,900	172,770	165,870	0.0189	130	3,265	3,135
36	2037		6,900	6,900	172,770	165,870	0.0169	117	2,920	2,803
37	2038		6,900	6,900	172,770	165,870	0.0151	104	2,609	2,505
38	2039		6,900	6,900	172,770	165,870	0.0135	93	2,332	2,239
39	2040		6,900	6,900	172,770	165,870	0.0120	83	2,073	1,990
40	2041		6,900	6,900	172,770	165,870	0.0107	74	1,849	1,775
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		15,500	255,300	270,800	6,392,490	6,121,690		49,068	1,009,290	960,222

N.P.V=	960,222
B/C=	20.57
EIRR=	374.8%

Table L-21-13 Increase of Agricultural production (Economic Analysis) (K7-0-19-1 Sarbaz)

(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	203,911	0	203,911	0	-203,911	0.8929	182,072	0	-182,072
2	2003	203,917	0	203,917	0	-203,917	0.7972	162,563	0	-162,563
3	2004	203,917	0	203,917	0	-203,917	0.7118	145,148	0	-145,148
4	2005	203,917	249,400	453,317	2,334,323	1,881,006	0.6355	288,083	1,483,462	1,195,379
5	2006	203,917	249,400	453,317	2,334,323	1,881,006	0.5674	257,212	1,324,495	1,067,283
6	2007	203,917	249,400	453,317	2,334,323	1,881,006	0.5066	229,650	1,182,568	952,918
7	2008	203,917	249,400	453,317	2,334,323	1,881,006	0.4523	205,035	1,055,814	850,779
8	2009	203,917	249,400	453,317	2,334,323	1,881,006	0.4039	183,095	942,833	759,738
9	2010	203,917	249,400	453,317	2,334,323	1,881,006	0.3606	163,466	841,757	678,291
10	2011	203,917	249,400	453,317	2,334,323	1,881,006	0.3220	145,968	751,652	605,684
11	2012	203,917	249,400	453,317	2,334,323	1,881,006	0.2875	130,329	671,118	540,789
12	2013	203,917	249,400	453,317	2,334,323	1,881,006	0.2567	116,366	599,221	482,855
13	2014	203,917	249,400	453,317	2,334,323	1,881,006	0.2292	103,900	535,027	431,127
14	2015	203,917	249,400	453,317	2,334,323	1,881,006	0.2046	92,749	477,602	384,853
15	2016	203,917	249,400	453,317	2,334,323	1,881,006	0.1827	82,821	426,481	343,660
16	2017	203,917	249,400	453,317	2,334,323	1,881,006	0.1631	73,936	380,728	306,792
17	2018	203,917	249,400	453,317	2,334,323	1,881,006	0.1456	66,003	339,877	273,874
18	2019	203,917	249,400	453,317	2,334,323	1,881,006	0.1300	58,931	303,462	244,531
19	2020	0	249,400	249,400	2,334,323	2,084,923	0.1161	28,955	271,015	242,060
20	2021		249,400	249,400	2,334,323	2,084,923	0.1037	25,863	242,069	216,206
21	2022		249,400	249,400	2,334,323	2,084,923	0.0926	23,094	216,158	193,064
22	2023		249,400	249,400	2,334,323	2,084,923	0.0826	20,600	192,815	172,215
23	2024		249,400	249,400	2,334,323	2,084,923	0.0738	18,406	172,273	153,867
24	2025		249,400	249,400	2,334,323	2,084,923	0.0659	16,435	153,832	137,397
25	2026		249,400	249,400	2,334,323	2,084,923	0.0588	14,665	137,258	122,593
26	2027		249,400	249,400	2,334,323	2,084,923	0.0525	13,094	122,552	109,458
27	2028		249,400	249,400	2,334,323	2,084,923	0.0469	11,697	109,480	97,783
28	2029		249,400	249,400	2,334,323	2,084,923	0.0419	10,450	97,808	87,358
29	2030		249,400	249,400	2,334,323	2,084,923	0.0374	9,328	87,304	77,976
30	2031		249,400	249,400	2,334,323	2,084,923	0.0334	8,330	77,966	69,636
31	2032		249,400	249,400	2,334,323	2,084,923	0.0298	7,432	69,563	62,131
32	2033		249,400	249,400	2,334,323	2,084,923	0.0266	6,634	62,093	55,459
33	2034		249,400	249,400	2,334,323	2,084,923	0.0238	5,936	55,557	49,621
34	2035		249,400	249,400	2,334,323	2,084,923	0.0212	5,287	49,488	44,201
35	2036		249,400	249,400	2,334,323	2,084,923	0.0189	4,714	44,119	39,405
36	2037		249,400	249,400	2,334,323	2,084,923	0.0169	4,215	39,450	35,235
37	2038		249,400	249,400	2,334,323	2,084,923	0.0151	3,766	35,248	31,482
38	2039		249,400	249,400	2,334,323	2,084,923	0.0135	3,367	31,513	28,146
39	2040		249,400	249,400	2,334,323	2,084,923	0.0120	2,993	28,012	25,019
40	2041		249,400	249,400	2,334,323	2,084,923	0.0107	2,669	24,977	22,308
41	2042		249,400	249,400	2,334,323	2,084,923	0.0096	2,394	22,410	20,016
42	2043		249,400	249,400	2,334,323	2,084,923	0.0086	2,145	20,075	17,930
43	2044		249,400	249,400	2,334,323	2,084,923	0.0076	1,895	17,741	15,846
44	2045		249,400	249,400	2,334,323	2,084,923	0.0068	1,696	15,873	14,177
45	2046		249,400	249,400	2,334,323	2,084,923	0.0061	1,521	14,239	12,718
46	2047		249,400	249,400	2,334,323	2,084,923	0.0054	1,347	12,605	11,258
47	2048		249,400	249,400	2,334,323	2,084,923	0.0049	1,222	11,438	10,216
48	2049		249,400	249,400	2,334,323	2,084,923	0.0043	1,072	10,038	8,966
		3,670,500	11,223,000	14,893,500	105,044,535	90,151,035		2,948,549	13,761,066	10,812,517

N.P.V=	10,812,517
B/C=	4.67
EIRR=	117.0%

Table L-21-14 Collecting and grading center of apple (Economic Analysis) (K7-0-19-1 Sarbaz)

(1,000Rs.)

							I = 12%			
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V	
1	2002	549,360	0	549,360	0	-549,360	0.8929	490,524	0	-490,524
2	2003	549,360	0	549,360	0	-549,360	0.7972	437,950	0	-437,950
3	2004	549,360	0	549,360	0	-549,360	0.7118	391,034	0	-391,034
4	2005	549,360	5,944,230	6,493,590	8,771,340	2,277,750	0.6355	4,126,676	5,574,187	1,447,511
5	2006	549,360	5,944,230	6,493,590	8,771,340	2,277,750	0.5674	3,684,463	4,976,858	1,292,395
6	2007	0	5,944,230	5,944,230	8,771,340	2,827,110	0.5066	3,011,347	4,443,561	1,432,214
7	2008	0	5,944,230	5,944,230	8,771,340	2,827,110	0.4523	2,688,575	3,967,277	1,278,702
8	2009	0	5,944,230	5,944,230	8,771,340	2,827,110	0.4039	2,400,874	3,542,744	1,141,870
9	2010	0	5,944,230	5,944,230	8,771,340	2,827,110	0.3606	2,143,489	3,162,945	1,019,456
10	2011	0	5,944,230	5,944,230	8,771,340	2,827,110	0.3220	1,914,042	2,824,371	910,329
11	2012	0	5,944,230	5,944,230	8,771,340	2,827,110	0.2875	1,708,966	2,521,760	812,794
12	2013	0	5,944,230	5,944,230	8,771,340	2,827,110	0.2567	1,525,884	2,251,603	725,719
13	2014	0	5,944,230	5,944,230	8,771,340	2,827,110	0.2292	1,362,418	2,010,391	647,973
14	2015	0	5,944,230	5,944,230	8,771,340	2,827,110	0.2046	1,216,189	1,794,616	578,427
15	2016	0	5,944,230	5,944,230	8,771,340	2,827,110	0.1827	1,086,011	1,602,524	516,513
16	2017	0	5,944,230	5,944,230	8,771,340	2,827,110	0.1631	969,504	1,430,606	461,102
17	2018	0	5,944,230	5,944,230	8,771,340	2,827,110	0.1456	865,480	1,277,107	411,627
18	2019	0	5,944,230	5,944,230	8,771,340	2,827,110	0.1300	772,750	1,140,274	367,524
19	2020	0	5,944,230	5,944,230	8,771,340	2,827,110	0.1161	690,125	1,018,353	328,228
20	2021		5,944,230	5,944,230	8,771,340	2,827,110	0.1037	616,417	909,588	293,171
21	2022		5,944,230	5,944,230	8,771,340	2,827,110	0.0926	550,436	812,226	261,790
22	2023		5,944,230	5,944,230	8,771,340	2,827,110	0.0826	490,993	724,513	233,520
23	2024		5,944,230	5,944,230	8,771,340	2,827,110	0.0738	438,684	647,325	208,641
24	2025		5,944,230	5,944,230	8,771,340	2,827,110	0.0659	391,725	578,031	186,306
25	2026		5,944,230	5,944,230	8,771,340	2,827,110	0.0588	349,521	515,755	166,234
26	2027		5,944,230	5,944,230	8,771,340	2,827,110	0.0525	312,072	460,495	148,423
27	2028		5,944,230	5,944,230	8,771,340	2,827,110	0.0469	278,784	411,376	132,592
28	2029		5,944,230	5,944,230	8,771,340	2,827,110	0.0419	249,063	367,519	118,456
29	2030		5,944,230	5,944,230	8,771,340	2,827,110	0.0374	222,314	328,048	105,734
30	2031		5,944,230	5,944,230	8,771,340	2,827,110	0.0334	198,537	292,963	94,426
31	2032		5,944,230	5,944,230	8,771,340	2,827,110	0.0298	177,138	261,386	84,248
32	2033		5,944,230	5,944,230	8,771,340	2,827,110	0.0266	158,117	233,318	75,201
33	2034		5,944,230	5,944,230	8,771,340	2,827,110	0.0238	141,473	208,758	67,285
34	2035		5,944,230	5,944,230	8,771,340	2,827,110	0.0212	126,018	185,952	59,934
35	2036		5,944,230	5,944,230	8,771,340	2,827,110	0.0189	112,346	165,778	53,432
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									
		2,746,800	190,215,360	192,962,160	280,682,880	87,720,720		36,299,939	50,642,208	14,342,269

N.P.V=	14,342,269
B/C=	1.40
EIRR=	76.2%

Table L-21-15 Diversification to Milk Cow (Economic Analysis) (K7-0-19-1 Sarbaz)

(1,000Rs.)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	I = 12%		N.P.V
							Cost	Benefit	
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	0	0	0	0	0	0.6355	0	0	0
5 2006	0	0	0	0	0	0.5674	0	0	0
6 2007	125,840	347,696	473,536	425,590	-47,946	0.5066	239,893	215,604	-24,289
7 2008	125,840	695,392	821,232	851,180	29,948	0.4523	371,443	384,989	13,546
8 2009	125,840	1,043,088	1,168,928	1,276,770	107,842	0.4039	472,130	515,687	43,557
9 2010	125,840	1,390,784	1,516,624	1,702,360	185,736	0.3606	546,895	613,871	66,976
10 2011	125,840	1,738,480	1,864,320	2,127,950	263,630	0.3220	600,311	685,200	84,889
11 2012	0	1,738,480	1,738,480	2,127,950	389,470	0.2875	499,813	611,786	111,973
12 2013	0	1,738,480	1,738,480	2,127,950	389,470	0.2567	446,268	546,245	99,977
13 2014	0	1,738,480	1,738,480	2,127,950	389,470	0.2292	398,460	487,726	89,266
14 2015	0	1,738,480	1,738,480	2,127,950	389,470	0.2046	355,693	435,379	79,686
15 2016	0	1,738,480	1,738,480	2,127,950	389,470	0.1827	317,620	388,776	71,156
16 2017	0	1,738,480	1,738,480	2,127,950	389,470	0.1631	283,546	347,069	63,523
17 2018	0	1,738,480	1,738,480	2,127,950	389,470	0.1456	253,123	309,830	56,707
18 2019	0	1,738,480	1,738,480	2,127,950	389,470	0.1300	226,002	276,634	50,632
19 2020	0	1,738,480	1,738,480	2,127,950	389,470	0.1161	201,838	247,055	45,217
20 2021		1,738,480	1,738,480	2,127,950	389,470	0.1037	180,280	220,668	40,388
21 2022		1,738,480	1,738,480	2,127,950	389,470	0.0926	160,983	197,048	36,065
22 2023		1,738,480	1,738,480	2,127,950	389,470	0.0826	143,598	175,769	32,171
23 2024		1,738,480	1,738,480	2,127,950	389,470	0.0738	128,300	157,043	28,743
24 2025		1,738,480	1,738,480	2,127,950	389,470	0.0659	114,566	140,232	25,666
25 2026		1,738,480	1,738,480	2,127,950	389,470	0.0588	102,223	125,123	22,900
26 2027		1,738,480	1,738,480	2,127,950	389,470	0.0525	91,270	111,717	20,447
27 2028		1,738,480	1,738,480	2,127,950	389,470	0.0469	81,535	99,801	18,266
28 2029		1,738,480	1,738,480	2,127,950	389,470	0.0419	72,842	89,161	16,319
29 2030		1,738,480	1,738,480	2,127,950	389,470	0.0374	65,019	79,585	14,566
30 2031		1,738,480	1,738,480	2,127,950	389,470	0.0334	58,065	71,074	13,009
31 2032		1,738,480	1,738,480	2,127,950	389,470	0.0298	51,807	63,413	11,606
32 2033		1,738,480	1,738,480	2,127,950	389,470	0.0266	46,244	56,603	10,359
33 2034		1,738,480	1,738,480	2,127,950	389,470	0.0238	41,376	50,645	9,269
34 2035		1,738,480	1,738,480	2,127,950	389,470	0.0212	36,856	45,113	8,257
35 2036		1,738,480	1,738,480	2,127,950	389,470	0.0189	32,857	40,218	7,361
36 2037		1,738,480	1,738,480	2,127,950	389,470	0.0169	29,380	35,962	6,582
37 2038		1,738,480	1,738,480	2,127,950	389,470	0.0151	26,251	32,132	5,881
38 2039		1,738,480	1,738,480	2,127,950	389,470	0.0135	23,469	28,727	5,258
39 2040		1,738,480	1,738,480	2,127,950	389,470	0.0120	20,862	25,535	4,673
40 2041		1,738,480	1,738,480	2,127,950	389,470	0.0107	18,602	22,769	4,167
41 2042									
42 2043									
43 2044									
44 2045									
45 2046									
46 2047									
47 2048									
48 2049									
629,200		57,369,840	57,999,040	70,222,350	12,223,310		6,739,420	7,934,189	1,194,769

N.P.V=	1,194,769
B/C=	1.18
EIRR=	162.5%

Table L-21-16 Rural water supply (Economic Analysis) (K7-0-19-1 Sarbaz)

(1,000Rls.)

							I = 12%			
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V	
1	2002	134,966	0	134,966	0	-134,966	0.8929	120,511	0	-120,511
2	2003	134,967	0	134,967	0	-134,967	0.7972	107,596	0	-107,596
3	2004	134,967	0	134,967	0	-134,967	0.7118	96,070	0	-96,070
4	2005	0	106,400	106,400	102,630	-3,770	0.6355	67,617	65,221	-2,396
5	2006	0	106,400	106,400	102,630	-3,770	0.5674	60,371	58,232	-2,139
6	2007	0	106,400	106,400	102,630	-3,770	0.5066	53,902	51,992	-1,910
7	2008	0	106,400	106,400	102,630	-3,770	0.4523	48,125	46,420	-1,705
8	2009	0	106,400	106,400	102,630	-3,770	0.4039	42,975	41,452	-1,523
9	2010	0	106,400	106,400	102,630	-3,770	0.3606	38,368	37,008	-1,360
10	2011	0	106,400	106,400	102,630	-3,770	0.3220	34,261	33,047	-1,214
11	2012	0	106,400	106,400	102,630	-3,770	0.2875	30,590	29,506	-1,084
12	2013	0	106,400	106,400	102,630	-3,770	0.2567	27,313	26,345	-968
13	2014	0	106,400	106,400	102,630	-3,770	0.2292	24,387	23,523	-864
14	2015	0	106,400	106,400	102,630	-3,770	0.2046	21,769	20,998	-771
15	2016	0	106,400	106,400	102,630	-3,770	0.1827	19,439	18,751	-688
16	2017	0	106,400	106,400	102,630	-3,770	0.1631	17,354	16,739	-615
17	2018	0	106,400	106,400	102,630	-3,770	0.1456	15,492	14,943	-549
18	2019	0	106,400	106,400	102,630	-3,770	0.1300	13,832	13,342	-490
19	2020	0	106,400	106,400	102,630	-3,770	0.1161	12,353	11,915	-438
20	2021		106,400	106,400	102,630	-3,770	0.1037	11,034	10,643	-391
21	2022		106,400	106,400	102,630	-3,770	0.0926	9,853	9,504	-349
22	2023		106,400	106,400	102,630	-3,770	0.0826	8,789	8,477	-312
23	2024		106,400	106,400	102,630	-3,770	0.0738	7,852	7,574	-278
24	2025		106,400	106,400	102,630	-3,770	0.0659	7,012	6,763	-249
25	2026		106,400	106,400	102,630	-3,770	0.0588	6,256	6,035	-221
26	2027		106,400	106,400	102,630	-3,770	0.0525	5,586	5,388	-198
27	2028		106,400	106,400	102,630	-3,770	0.0469	4,990	4,813	-177
28	2029		106,400	106,400	102,630	-3,770	0.0419	4,458	4,300	-158
29	2030		106,400	106,400	102,630	-3,770	0.0374	3,979	3,838	-141
30	2031		106,400	106,400	102,630	-3,770	0.0334	3,554	3,428	-126
31	2032		106,400	106,400	102,630	-3,770	0.0298	3,171	3,058	-113
32	2033		106,400	106,400	102,630	-3,770	0.0266	2,830	2,730	-100
33	2034		106,400	106,400	102,630	-3,770	0.0238	2,532	2,443	-89
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									
		404,900	3,192,000	3,596,900	3,078,900	-518,000		934,221	588,428	-345,793

N.P.V=	-345,793
B/C=	0.63
EIRR=	#DIV/0!

Table L-21-17 Rural road improvement (Economic Analysis) (K7-0-19-1 Sarbaz)

(1,000Rls.)

Table 2.24-17 Rural Road Improvement (Economic Analysis) (R7-6-17-A Subaz)							I = 12%				(1,000,000)
Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	Discount Rate	Cost	Benefit	N.P.V		
1	2002	1,213,434	0	1,213,434	0	-1,213,434	0.8929	1,083,475	0	-1,083,475	
2	2003	1,213,433	0	1,213,433	0	-1,213,433	0.7972	967,349	0	-967,349	
3	2004	1,213,433	0	1,213,433	0	-1,213,433	0.7118	863,722	0	-863,722	
4	2005	0	135,800	135,800	1,268,640	1,132,840	0.6355	86,301	806,221	719,920	
5	2006	0	135,800	135,800	1,268,640	1,132,840	0.5674	77,053	719,826	642,773	
6	2007	0	135,800	135,800	1,268,640	1,132,840	0.5066	68,796	642,693	573,897	
7	2008	0	135,800	135,800	1,268,640	1,132,840	0.4523	61,422	573,806	512,384	
8	2009	0	135,800	135,800	1,268,640	1,132,840	0.4039	54,850	512,404	457,554	
9	2010	0	135,800	135,800	1,268,640	1,132,840	0.3606	48,969	457,472	408,503	
10	2011	0	135,800	135,800	1,268,640	1,132,840	0.3220	43,728	408,502	364,774	
11	2012	0	135,800	135,800	1,268,640	1,132,840	0.2875	39,043	364,734	325,691	
12	2013	0	135,800	135,800	1,268,640	1,132,840	0.2567	34,860	325,660	290,800	
13	2014	0	135,800	135,800	1,268,640	1,132,840	0.2292	31,125	290,772	259,647	
14	2015	0	135,800	135,800	1,268,640	1,132,840	0.2046	27,785	259,564	231,779	
15	2016	0	135,800	135,800	1,268,640	1,132,840	0.1827	24,811	231,781	206,970	
16	2017	0	135,800	135,800	1,268,640	1,132,840	0.1631	22,149	206,915	184,766	
17	2018	0	135,800	135,800	1,268,640	1,132,840	0.1456	19,772	184,714	164,942	
18	2019	0	135,800	135,800	1,268,640	1,132,840	0.1300	17,654	164,923	147,269	
19	2020	0	135,800	135,800	1,268,640	1,132,840	0.1161	15,766	147,289	131,523	
20	2021		135,800	135,800	1,268,640	1,132,840	0.1037	14,082	131,558	117,476	
21	2022		135,800	135,800	1,268,640	1,132,840	0.0926	12,575	117,476	104,901	
22	2023		135,800	135,800	1,268,640	1,132,840	0.0826	11,217	104,790	93,573	
23	2024		135,800	135,800	1,268,640	1,132,840	0.0738	10,022	93,626	83,604	
24	2025		135,800	135,800	1,268,640	1,132,840	0.0659	8,949	83,603	74,654	
25	2026		135,800	135,800	1,268,640	1,132,840	0.0588	7,985	74,596	66,611	
26	2027		135,800	135,800	1,268,640	1,132,840	0.0525	7,130	66,604	59,474	
27	2028		135,800	135,800	1,268,640	1,132,840	0.0469	6,369	59,499	53,130	
28	2029		135,800	135,800	1,268,640	1,132,840	0.0419	5,690	53,156	47,466	
29	2030		135,800	135,800	1,268,640	1,132,840	0.0374	5,079	47,447	42,368	
30	2031		135,800	135,800	1,268,640	1,132,840	0.0334	4,536	42,373	37,837	
31	2032		135,800	135,800	1,268,640	1,132,840	0.0298	4,047	37,805	33,758	
32	2033		135,800	135,800	1,268,640	1,132,840	0.0266	3,612	33,746	30,134	
33	2034		135,800	135,800	1,268,640	1,132,840	0.0238	3,232	30,194	26,962	
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										
		3,640,300	4,074,000	7,714,300	38,059,200	30,344,900		3,693,155	7,273,749	3,580,594	

N.P.V=	3,580,594
B/C=	1.97
EIRR=	24.6%

Table L-21-18 Establishment of cooperative (Economic Analysis) (K7-0-19-1 Sarbaz)

(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	73,174	0	73,174	0	-73,174	0.8929	65,337	0	-65,337
2	2003	73,178	0	73,178	0	-73,178	0.7972	58,338	0	-58,338
3	2004	73,178	0	73,178	0	-73,178	0.7118	52,088	0	-52,088
4	2005	73,178	1,463,820	1,536,998	1,977,760	440,762	0.6355	976,762	1,256,866	280,104
5	2006	73,178	1,463,820	1,536,998	1,977,760	440,762	0.5674	872,093	1,122,181	250,088
6	2007	73,178	1,463,820	1,536,998	1,977,760	440,762	0.5066	778,643	1,001,933	223,290
7	2008	73,178	1,463,820	1,536,998	1,977,760	440,762	0.4523	695,184	894,541	199,357
8	2009	73,178	1,463,820	1,536,998	1,977,760	440,762	0.4039	620,793	798,817	178,024
9	2010	73,178	1,463,820	1,536,998	1,977,760	440,762	0.3606	554,241	713,180	158,939
10	2011	73,178	1,463,820	1,536,998	1,977,760	440,762	0.3220	494,913	636,839	141,926
11	2012	73,178	1,463,820	1,536,998	1,977,760	440,762	0.2875	441,887	568,606	126,719
12	2013	73,178	1,463,820	1,536,998	1,977,760	440,762	0.2567	394,547	507,691	113,144
13	2014	73,178	1,463,820	1,536,998	1,977,760	440,762	0.2292	352,280	453,303	101,023
14	2015	73,178	1,463,820	1,536,998	1,977,760	440,762	0.2046	314,470	404,650	90,180
15	2016	73,178	1,463,820	1,536,998	1,977,760	440,762	0.1827	280,810	361,337	80,527
16	2017	73,178	1,463,820	1,536,998	1,977,760	440,762	0.1631	250,684	322,573	71,889
17	2018	73,178	1,463,820	1,536,998	1,977,760	440,762	0.1456	223,787	287,962	64,175
18	2019	73,178	1,463,820	1,536,998	1,977,760	440,762	0.1300	199,810	257,109	57,299
19	2020	0	1,463,820	1,463,820	1,977,760	513,940	0.1161	169,950	229,618	59,668
20	2021		1,463,820	1,463,820	1,977,760	513,940	0.1037	151,798	205,094	53,296
21	2022		1,463,820	1,463,820	1,977,760	513,940	0.0926	135,550	183,141	47,591
22	2023		1,463,820	1,463,820	1,977,760	513,940	0.0826	120,912	163,363	42,451
23	2024		1,463,820	1,463,820	1,977,760	513,940	0.0738	108,030	145,959	37,929
24	2025		1,463,820	1,463,820	1,977,760	513,940	0.0659	96,466	130,334	33,868
25	2026		1,463,820	1,463,820	1,977,760	513,940	0.0588	86,073	116,292	30,219
26	2027		1,463,820	1,463,820	1,977,760	513,940	0.0525	76,851	103,832	26,981
27	2028		1,463,820	1,463,820	1,977,760	513,940	0.0469	68,653	92,757	24,104
28	2029		1,463,820	1,463,820	1,977,760	513,940	0.0419	61,334	82,868	21,534
29	2030		1,463,820	1,463,820	1,977,760	513,940	0.0374	54,747	73,968	19,221
30	2031		1,463,820	1,463,820	1,977,760	513,940	0.0334	48,892	66,057	17,165
31	2032		1,463,820	1,463,820	1,977,760	513,940	0.0298	43,622	58,937	15,315
32	2033		1,463,820	1,463,820	1,977,760	513,940	0.0266	38,938	52,608	13,670
33	2034		1,463,820	1,463,820	1,977,760	513,940	0.0238	34,839	47,071	12,232
34	2035		1,463,820	1,463,820	1,977,760	513,940	0.0212	31,033	41,929	10,896
35	2036		1,463,820	1,463,820	1,977,760	513,940	0.0189	27,666	37,380	9,714
36	2037		1,463,820	1,463,820	1,977,760	513,940	0.0169	24,739	33,424	8,685
37	2038		1,463,820	1,463,820	1,977,760	513,940	0.0151	22,104	29,864	7,760
38	2039		1,463,820	1,463,820	1,977,760	513,940	0.0135	19,762	26,700	6,938
39	2040		1,463,820	1,463,820	1,977,760	513,940	0.0120	17,566	23,733	6,167
40	2041		1,463,820	1,463,820	1,977,760	513,940	0.0107	15,663	21,162	5,499
41	2042		1,463,820	1,463,820	1,977,760	513,940	0.0096	14,053	18,986	4,933
42	2043		1,463,820	1,463,820	1,977,760	513,940	0.0086	12,589	17,009	4,420
43	2044		1,463,820	1,463,820	1,977,760	513,940	0.0076	11,125	15,031	3,906
44	2045		1,463,820	1,463,820	1,977,760	513,940	0.0068	9,954	13,449	3,495
45	2046		1,463,820	1,463,820	1,977,760	513,940	0.0061	8,929	12,064	3,135
46	2047		1,463,820	1,463,820	1,977,760	513,940	0.0054	7,905	10,680	2,775
47	2048		1,463,820	1,463,820	1,977,760	513,940	0.0049	7,173	9,691	2,518
48	2049		1,463,820	1,463,820	1,977,760	513,940	0.0043	6,294	8,504	2,210
		1,317,200	65,871,900	67,189,100	88,999,200	21,810,100		9,159,877	11,659,093	2,499,216

N.P.V=	2,499,216
B/C=	1.27
EIRR=	91.5%

Table L-21-19 Economic Evaluation of the Proposed Projects (Grand Total)

(1,000RIs.)

Year	Total cost	Total benefit	Net Benefit	I = 12%			
				Discount Rate	Cost	Benefit	N.P.V
1	2,857,267	0	-2,857,267	0.8929	2,551,254	0	-2,551,254
2	2,857,276	0	-2,857,276	0.7972	2,277,820	0	-2,277,820
3	2,857,276	0	-2,857,276	0.7118	2,033,809	0	-2,033,809
4	9,519,926	15,977,563	6,457,637	0.6355	6,049,913	10,153,741	4,103,828
5	9,519,926	15,977,563	6,457,637	0.5674	5,401,606	9,065,669	3,664,063
6	9,444,102	16,403,153	6,959,051	0.5066	4,784,382	8,309,837	3,525,455
7	9,791,798	16,828,743	7,036,945	0.4523	4,428,830	7,611,640	3,182,810
8	10,139,494	17,254,333	7,114,839	0.4039	4,095,342	6,969,025	2,873,683
9	10,815,920	17,679,923	6,864,003	0.3606	3,900,221	6,375,380	2,475,159
10	11,163,616	18,105,513	6,941,897	0.3220	3,594,684	5,829,975	2,235,291
11	11,036,226	18,105,513	7,069,287	0.2875	3,172,915	5,205,335	2,032,420
12	11,098,626	18,472,753	7,374,127	0.2567	2,849,017	4,741,956	1,892,939
13	11,098,626	18,472,753	7,374,127	0.2292	2,543,805	4,233,955	1,690,150
14	10,089,026	18,472,753	8,383,727	0.2046	2,064,215	3,779,525	1,715,310
15	10,089,026	18,472,753	8,383,727	0.1827	1,843,265	3,374,972	1,531,707
16	10,089,026	18,472,753	8,383,727	0.1631	1,645,520	3,012,906	1,367,386
17	10,089,026	18,472,753	8,383,727	0.1456	1,468,962	2,689,633	1,220,671
18	10,089,026	18,472,753	8,383,727	0.1300	1,311,573	2,401,458	1,089,885
19	9,811,930	18,472,753	8,660,823	0.1161	1,139,165	2,144,687	1,005,522
20	9,811,930	18,472,753	8,660,823	0.1037	1,017,497	1,915,624	898,127
21	9,811,930	18,472,753	8,660,823	0.0926	908,585	1,710,577	801,992
22	9,811,930	18,472,753	8,660,823	0.0826	810,465	1,525,849	715,384
23	9,811,930	18,472,753	8,660,823	0.0738	724,120	1,363,289	639,169
24	9,811,930	18,472,753	8,660,823	0.0659	646,606	1,217,354	570,748
25	9,811,930	18,472,753	8,660,823	0.0588	576,941	1,086,198	509,257
26	9,811,930	18,472,753	8,660,823	0.0525	515,126	969,820	454,694
27	9,811,930	18,472,753	8,660,823	0.0469	460,180	866,372	406,192
28	9,811,930	18,472,753	8,660,823	0.0419	411,120	774,008	362,888
29	9,811,930	18,472,753	8,660,823	0.0374	366,966	690,881	323,915
30	9,811,930	18,472,753	8,660,823	0.0334	327,718	616,990	289,272
31	9,811,930	18,472,753	8,660,823	0.0298	292,396	550,488	258,092
32	9,811,930	18,472,753	8,660,823	0.0266	260,997	491,375	230,378
33	9,811,930	18,472,753	8,660,823	0.0238	233,524	439,652	206,128
34	9,811,930	18,472,753	8,660,823	0.0212	208,013	391,622	183,609
35	9,811,930	18,472,753	8,660,823	0.0189	185,445	349,135	163,690
36	9,811,930	18,472,753	8,660,823	0.0169	165,822	312,190	146,368
37	9,811,930	18,472,753	8,660,823	0.0151	148,160	278,939	130,779
38	9,811,930	18,472,753	8,660,823	0.0135	132,461	249,382	116,921
39	9,811,930	18,472,753	8,660,823	0.0120	117,743	221,673	103,930
40	9,811,930	18,472,753	8,660,823	0.0107	104,988	197,658	92,670
41	9,811,930	18,472,753	8,660,823	0.0096	94,195	177,338	83,143
42	9,811,930	18,472,753	8,660,823	0.0086	84,383	158,866	74,483
43	9,811,930	18,472,753	8,660,823	0.0076	74,571	140,393	65,822
44	9,811,930	18,472,753	8,660,823	0.0068	66,721	125,615	58,894
45	9,811,930	18,472,753	8,660,823	0.0061	59,853	112,684	52,831
46	9,811,930	18,472,753	8,660,823	0.0054	52,984	99,753	46,769
47	9,811,930	18,472,753	8,660,823	0.0049	48,078	90,516	42,438
48	9,811,930	18,472,753	8,660,823	0.0043	42,191	79,433	37,242
457,003,109					66,294,147	103,103,368	36,809,221

N.P.V=	36,809,221
B/C=	1.56
EIRR=	49.7%

Table L-22 Result of Financial and Economic Analysis (K7-48 Tangsorkh)

(1,000Rs.)

Project	Financial Analysis			Economic Analysis		
	NPV	B/C	FIRR	NPV	B/C	EIRR
(1) Construction of check dam	2,382,994	1.96	28.5%	1,394,596	1.60	22.3%
(2) Soil erosion protection	-	-	-	9,084	1.18	15.7%
(3) Rangeland vegetation improvement	-	-	-	473,447	11.59	371.6%
(4) Forestland vegetation recovery	-	-	-	311,528	21.69	#DIV/0!
(5) Increase of irrigated agriculture	Included in Construction of Check Dam					
(6) Collecting and grading center of apples and vegetable	546,880	1.08	22.0%	992,650	1.16	34.2%
(7) Rural water supply improvement	-405,979	0.16	#DIV/0!	-381,800	0.16	#DIV/0!
(8) Rural road improvement	-473,990	0.55	3.2%	-445,710	0.55	3.2%
(9) Establishment of cooperative	Intangible	Intangible	Intangible	Intangible	Intangible	Intangible
(10) Community enhancement	Intangible	Intangible	Intangible	Intangible	Intangible	Intangible
Total	2,096,321	1.19	19.2%	5,248,358	1.51	31.0%

Table L-22-1 Construction of check dam (Financial Analysis) (K7-48 Tangsorkh)

(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	417,809	0	417,809	0	-417,809	0.8929	373,062	0	-373,062
2	2003	417,813	0	417,813	0	-417,813	0.7972	333,081	0	-333,081
3	2004	417,813	0	417,813	0	-417,813	0.7118	297,399	0	-297,399
4	2005	417,813	71,600	489,413	837,787	348,374	0.6355	311,022	532,414	221,392
5	2006	417,813	71,600	489,413	837,787	348,374	0.5674	277,693	475,360	197,667
6	2007	417,813	71,600	489,413	837,787	348,374	0.5066	247,937	424,423	176,486
7	2008	417,813	71,600	489,413	837,787	348,374	0.4523	221,361	378,931	157,570
8	2009	417,813	71,600	489,413	837,787	348,374	0.4039	197,674	338,382	140,708
9	2010	0	71,600	71,600	837,787	766,187	0.3606	25,819	302,106	276,287
10	2011	0	71,600	71,600	837,787	766,187	0.3220	23,055	269,767	246,712
11	2012	0	71,600	71,600	837,787	766,187	0.2875	20,585	240,864	220,279
12	2013	0	71,600	71,600	837,787	766,187	0.2567	18,380	215,060	196,680
13	2014	0	71,600	71,600	837,787	766,187	0.2292	16,411	192,021	175,610
14	2015	0	71,600	71,600	837,787	766,187	0.2046	14,649	171,411	156,762
15	2016	0	71,600	71,600	837,787	766,187	0.1827	13,081	153,064	139,983
16	2017	0	71,600	71,600	837,787	766,187	0.1631	11,678	136,643	124,965
17	2018	0	71,600	71,600	837,787	766,187	0.1456	10,425	121,982	111,557
18	2019	0	71,600	71,600	837,787	766,187	0.1300	9,308	108,912	99,604
19	2020	0	71,600	71,600	837,787	766,187	0.1161	8,313	97,267	88,954
20	2021		71,600	71,600	837,787	766,187	0.1037	7,425	86,879	79,454
21	2022		71,600	71,600	837,787	766,187	0.0926	6,630	77,579	70,949
22	2023		71,600	71,600	837,787	766,187	0.0826	5,914	69,201	63,287
23	2024		71,600	71,600	837,787	766,187	0.0738	5,284	61,829	56,545
24	2025		71,600	71,600	837,787	766,187	0.0659	4,718	55,210	50,492
25	2026		71,600	71,600	837,787	766,187	0.0588	4,210	49,262	45,052
26	2027		71,600	71,600	837,787	766,187	0.0525	3,759	43,984	40,225
27	2028		71,600	71,600	837,787	766,187	0.0469	3,358	39,292	35,934
28	2029		71,600	71,600	837,787	766,187	0.0419	3,000	35,103	32,103
29	2030		71,600	71,600	837,787	766,187	0.0374	2,678	31,333	28,655
30	2031		71,600	71,600	837,787	766,187	0.0334	2,391	27,982	25,591
31	2032		71,600	71,600	837,787	766,187	0.0298	2,134	24,966	22,832
32	2033		71,600	71,600	837,787	766,187	0.0266	1,905	22,285	20,380
33	2034		71,600	71,600	837,787	766,187	0.0238	1,704	19,939	18,235
34	2035		71,600	71,600	837,787	766,187	0.0212	1,518	17,761	16,243
35	2036		71,600	71,600	837,787	766,187	0.0189	1,353	15,834	14,481
36	2037		71,600	71,600	837,787	766,187	0.0169	1,210	14,159	12,949
37	2038		71,600	71,600	837,787	766,187	0.0151	1,081	12,651	11,570
38	2039		71,600	71,600	837,787	766,187	0.0135	967	11,310	10,343
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		3,342,500	2,506,000	5,848,500	29,322,545	23,474,045		2,492,172	4,875,166	2,382,994

N.P.V=	2,382,994
B/C=	1.96
FIRR=	28.5%

Table L-22-2 Collecting and grading center of apples and vegetables (Financial Analysis) (K7-48 Tangsorkh)

(1,000Baht)

Year	Project Cost	O&M Cost	Total Cost	Total Benefit	Net Benefit	I = 12%				
						Discount Rate	Cost	Benefit	N.P.V	
1	2002	181,240	0	181,240	0	-181,240	0.8929	161,829	0	-161,829
2	2003	181,240	0	181,240	0	-181,240	0.7972	144,485	0	-144,485
3	2004	181,240	0	181,240	0	-181,240	0.7118	129,007	0	-129,007
4	2005	181,240	1,114,520	1,295,760	1,322,400	26,640	0.6355	823,455	840,385	16,930
5	2006	181,240	1,114,520	1,295,760	1,322,400	26,640	0.5674	735,214	750,330	15,116
6	2007	0	1,114,520	1,114,520	1,322,400	207,880	0.5066	564,616	669,928	105,312
7	2008	0	1,114,520	1,114,520	1,322,400	207,880	0.4523	504,097	598,122	94,025
8	2009	0	1,114,520	1,114,520	1,322,400	207,880	0.4039	450,155	534,117	83,962
9	2010	0	1,114,520	1,114,520	1,322,400	207,880	0.3606	401,896	476,857	74,961
10	2011	0	1,114,520	1,114,520	1,322,400	207,880	0.3220	358,875	425,813	66,938
11	2012	0	1,114,520	1,114,520	1,322,400	207,880	0.2875	320,425	380,190	59,765
12	2013	0	1,114,520	1,114,520	1,322,400	207,880	0.2567	286,097	339,460	53,363
13	2014	0	1,114,520	1,114,520	1,322,400	207,880	0.2292	255,448	303,094	47,646
14	2015	0	1,114,520	1,114,520	1,322,400	207,880	0.2046	228,031	270,563	42,532
15	2016	0	1,114,520	1,114,520	1,322,400	207,880	0.1827	203,623	241,602	37,979
16	2017	0	1,114,520	1,114,520	1,322,400	207,880	0.1631	181,778	215,683	33,905
17	2018	0	1,114,520	1,114,520	1,322,400	207,880	0.1456	162,274	192,541	30,267
18	2019	0	1,114,520	1,114,520	1,322,400	207,880	0.1300	144,888	171,912	27,024
19	2020	0	1,114,520	1,114,520	1,322,400	207,880	0.1161	129,396	153,531	24,135
20	2021		1,114,520	1,114,520	1,322,400	207,880	0.1037	115,576	137,133	21,557
21	2022		1,114,520	1,114,520	1,322,400	207,880	0.0926	103,205	122,454	19,249
22	2023		1,114,520	1,114,520	1,322,400	207,880	0.0826	92,059	109,230	17,171
23	2024		1,114,520	1,114,520	1,322,400	207,880	0.0738	82,252	97,593	15,341
24	2025		1,114,520	1,114,520	1,322,400	207,880	0.0659	73,447	87,146	13,699
25	2026		1,114,520	1,114,520	1,322,400	207,880	0.0588	65,534	77,757	12,223
26	2027		1,114,520	1,114,520	1,322,400	207,880	0.0525	58,512	69,426	10,914
27	2028		1,114,520	1,114,520	1,322,400	207,880	0.0469	52,271	62,021	9,750
28	2029		1,114,520	1,114,520	1,322,400	207,880	0.0419	46,698	55,409	8,711
29	2030		1,114,520	1,114,520	1,322,400	207,880	0.0374	41,683	49,458	7,775
30	2031		1,114,520	1,114,520	1,322,400	207,880	0.0334	37,225	44,168	6,943
31	2032		1,114,520	1,114,520	1,322,400	207,880	0.0298	33,213	39,408	6,195
32	2033		1,114,520	1,114,520	1,322,400	207,880	0.0266	29,646	35,176	5,530
33	2034		1,114,520	1,114,520	1,322,400	207,880	0.0238	26,526	31,473	4,947
34	2035		1,114,520	1,114,520	1,322,400	207,880	0.0212	23,628	28,035	4,407
35	2036		1,114,520	1,114,520	1,322,400	207,880	0.0189	21,064	24,993	3,929
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									
		906,200	35,664,640	36,570,840	42,316,800	5,745,960		7,088,128	7,635,008	546,880

N.P.V=	546,880
B/C=	1.08
FIRR=	22.0%

Table L-22-3 Rural water supply (Financial Analysis) (K7-48 Tangsorkh)

(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	33,534	0	33,534	0	-33,534	0.8929	29,943	0	-29,943
2	2003	33,533	0	33,533	0	-33,533	0.7972	26,733	0	-26,733
3	2004	33,533	0	33,533	0	-33,533	0.7118	23,869	0	-23,869
4	2005	0	70,400	70,400	13,640	-56,760	0.6355	44,739	8,668	-36,071
5	2006	0	70,400	70,400	13,640	-56,760	0.5674	39,945	7,739	-32,206
6	2007	0	70,400	70,400	13,640	-56,760	0.5066	35,665	6,910	-28,755
7	2008	0	70,400	70,400	13,640	-56,760	0.4523	31,842	6,169	-25,673
8	2009	0	70,400	70,400	13,640	-56,760	0.4039	28,435	5,509	-22,926
9	2010	0	70,400	70,400	13,640	-56,760	0.3606	25,386	4,919	-20,467
10	2011	0	70,400	70,400	13,640	-56,760	0.3220	22,669	4,392	-18,277
11	2012	0	70,400	70,400	13,640	-56,760	0.2875	20,240	3,922	-16,318
12	2013	0	70,400	70,400	13,640	-56,760	0.2567	18,072	3,501	-14,571
13	2014	0	70,400	70,400	13,640	-56,760	0.2292	16,136	3,126	-13,010
14	2015	0	70,400	70,400	13,640	-56,760	0.2046	14,404	2,791	-11,613
15	2016	0	70,400	70,400	13,640	-56,760	0.1827	12,862	2,492	-10,370
16	2017	0	70,400	70,400	13,640	-56,760	0.1631	11,482	2,225	-9,257
17	2018	0	70,400	70,400	13,640	-56,760	0.1456	10,250	1,986	-8,264
18	2019	0	70,400	70,400	13,640	-56,760	0.1300	9,152	1,773	-7,379
19	2020	0	70,400	70,400	13,640	-56,760	0.1161	8,173	1,584	-6,589
20	2021		70,400	70,400	13,640	-56,760	0.1037	7,300	1,414	-5,886
21	2022		70,400	70,400	13,640	-56,760	0.0926	6,519	1,263	-5,256
22	2023		70,400	70,400	13,640	-56,760	0.0826	5,815	1,127	-4,688
23	2024		70,400	70,400	13,640	-56,760	0.0738	5,196	1,007	-4,189
24	2025		70,400	70,400	13,640	-56,760	0.0659	4,639	899	-3,740
25	2026		70,400	70,400	13,640	-56,760	0.0588	4,140	802	-3,338
26	2027		70,400	70,400	13,640	-56,760	0.0525	3,696	716	-2,980
27	2028		70,400	70,400	13,640	-56,760	0.0469	3,302	640	-2,662
28	2029		70,400	70,400	13,640	-56,760	0.0419	2,950	572	-2,378
29	2030		70,400	70,400	13,640	-56,760	0.0374	2,633	510	-2,123
30	2031		70,400	70,400	13,640	-56,760	0.0334	2,351	456	-1,895
31	2032		70,400	70,400	13,640	-56,760	0.0298	2,098	406	-1,692
32	2033		70,400	70,400	13,640	-56,760	0.0266	1,873	363	-1,510
33	2034		70,400	70,400	13,640	-56,760	0.0238	1,676	325	-1,351
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									
		100,600	2,112,000	2,212,600	409,200	-1,803,400		484,185	78,206	-405,979

N.P.V=	-405,979
B/C=	0.16
FIRR=	#DIV/0!

Table L-22-4 Rural road improvement (Financial Analysis) (K7-48 Tangsorkh)

(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	322,734	0	322,734	0	-322,734	0.8929	288,169	0	-288,169
2	2003	322,733	0	322,733	0	-322,733	0.7972	257,283	0	-257,283
3	2004	322,733	0	322,733	0	-322,733	0.7118	229,721	0	-229,721
4	2005	0	48,800	48,800	101,330	52,530	0.6355	31,012	64,395	33,383
5	2006	0	48,800	48,800	101,330	52,530	0.5674	27,689	57,495	29,806
6	2007	0	48,800	48,800	101,330	52,530	0.5066	24,722	51,334	26,612
7	2008	0	48,800	48,800	101,330	52,530	0.4523	22,072	45,832	23,760
8	2009	0	48,800	48,800	101,330	52,530	0.4039	19,710	40,927	21,217
9	2010	0	48,800	48,800	101,330	52,530	0.3606	17,597	36,540	18,943
10	2011	0	48,800	48,800	101,330	52,530	0.3220	15,714	32,628	16,914
11	2012	0	48,800	48,800	101,330	52,530	0.2875	14,030	29,132	15,102
12	2013	0	48,800	48,800	101,330	52,530	0.2567	12,527	26,011	13,484
13	2014	0	48,800	48,800	101,330	52,530	0.2292	11,185	23,225	12,040
14	2015	0	48,800	48,800	101,330	52,530	0.2046	9,984	20,732	10,748
15	2016	0	48,800	48,800	101,330	52,530	0.1827	8,916	18,513	9,597
16	2017	0	48,800	48,800	101,330	52,530	0.1631	7,959	16,527	8,568
17	2018	0	48,800	48,800	101,330	52,530	0.1456	7,105	14,754	7,649
18	2019	0	48,800	48,800	101,330	52,530	0.1300	6,344	13,173	6,829
19	2020	0	48,800	48,800	101,330	52,530	0.1161	5,666	11,764	6,098
20	2021		48,800	48,800	101,330	52,530	0.1037	5,061	10,508	5,447
21	2022		48,800	48,800	101,330	52,530	0.0926	4,519	9,383	4,864
22	2023		48,800	48,800	101,330	52,530	0.0826	4,031	8,370	4,339
23	2024		48,800	48,800	101,330	52,530	0.0738	3,601	7,478	3,877
24	2025		48,800	48,800	101,330	52,530	0.0659	3,216	6,678	3,462
25	2026		48,800	48,800	101,330	52,530	0.0588	2,869	5,958	3,089
26	2027		48,800	48,800	101,330	52,530	0.0525	2,562	5,320	2,758
27	2028		48,800	48,800	101,330	52,530	0.0469	2,289	4,752	2,463
28	2029		48,800	48,800	101,330	52,530	0.0419	2,045	4,246	2,201
29	2030		48,800	48,800	101,330	52,530	0.0374	1,825	3,790	1,965
30	2031		48,800	48,800	101,330	52,530	0.0334	1,630	3,384	1,754
31	2032		48,800	48,800	101,330	52,530	0.0298	1,454	3,020	1,566
32	2033		48,800	48,800	101,330	52,530	0.0266	1,298	2,695	1,397
33	2034		48,800	48,800	101,330	52,530	0.0238	1,161	2,412	1,251
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									
		968,200	1,464,000	2,432,200	3,039,900	607,700		1,054,966	580,976	-473,990

N.P.V=	-473,990
B/C=	0.55
FIRR=	3.2%

Table L-22-5 Establishment of cooperative (Financial Analysis) (K7-48 Tangsorkh)

(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	4,548	0	4,548	0	-4,548	0.8929	4,061	0	-4,061
2	2003	4,556	0	4,556	0	-4,556	0.7972	3,632	0	-3,632
3	2004	4,556	0	4,556	0	-4,556	0.7118	3,243	0	-3,243
4	2005	4,556	570	5,126	0	-5,126	0.6355	3,258	0	-3,258
5	2006	4,556	570	5,126	0	-5,126	0.5674	2,908	0	-2,908
6	2007	4,556	570	5,126	0	-5,126	0.5066	2,597	0	-2,597
7	2008	4,556	570	5,126	0	-5,126	0.4523	2,318	0	-2,318
8	2009	4,556	570	5,126	0	-5,126	0.4039	2,070	0	-2,070
9	2010	4,556	570	5,126	0	-5,126	0.3606	1,848	0	-1,848
10	2011	4,556	570	5,126	0	-5,126	0.3220	1,651	0	-1,651
11	2012	4,556	570	5,126	0	-5,126	0.2875	1,474	0	-1,474
12	2013	4,556	570	5,126	0	-5,126	0.2567	1,316	0	-1,316
13	2014	4,556	570	5,126	0	-5,126	0.2292	1,175	0	-1,175
14	2015	4,556	570	5,126	0	-5,126	0.2046	1,049	0	-1,049
15	2016	4,556	570	5,126	0	-5,126	0.1827	937	0	-937
16	2017	4,556	570	5,126	0	-5,126	0.1631	836	0	-836
17	2018	4,556	570	5,126	0	-5,126	0.1456	746	0	-746
18	2019	4,556	570	5,126	0	-5,126	0.1300	666	0	-666
19	2020	0	570	570	0	-570	0.1161	66	0	-66
20	2021		570	570	0	-570	0.1037	59	0	-59
21	2022		570	570	0	-570	0.0926	53	0	-53
22	2023		570	570	0	-570	0.0826	47	0	-47
23	2024		570	570	0	-570	0.0738	42	0	-42
24	2025		570	570	0	-570	0.0659	38	0	-38
25	2026		570	570	0	-570	0.0588	34	0	-34
26	2027		570	570	0	-570	0.0525	30	0	-30
27	2028		570	570	0	-570	0.0469	27	0	-27
28	2029		570	570	0	-570	0.0419	24	0	-24
29	2030		570	570	0	-570	0.0374	21	0	-21
30	2031		570	570	0	-570	0.0334	19	0	-19
31	2032		570	570	0	-570	0.0298	17	0	-17
32	2033		570	570	0	-570	0.0266	15	0	-15
33	2034		570	570	0	-570	0.0238	14	0	-14
34	2035		570	570	0	-570	0.0212	12	0	-12
35	2036		570	570	0	-570	0.0189	11	0	-11
36	2037		570	570	0	-570	0.0169	10	0	-10
37	2038		570	570	0	-570	0.0151	9	0	-9
38	2039		570	570	0	-570	0.0135	8	0	-8
39	2040		570	570	0	-570	0.0120	7	0	-7
40	2041		570	570	0	-570	0.0107	6	0	-6
41	2042		570	570	0	-570	0.0096	5	0	-5
42	2043		570	570	0	-570	0.0086	5	0	-5
43	2044		570	570	0	-570	0.0076	4	0	-4
44	2045		570	570	0	-570	0.0068	4	0	-4
45	2046		570	570	0	-570	0.0061	3	0	-3
46	2047		570	570	0	-570	0.0054	3	0	-3
47	2048		570	570	0	-570	0.0049	3	0	-3
48	2049		570	570	0	-570	0.0043	2	0	-2
		82,000	25,650	107,650	0	-107,650		36,383	0	-36,383

N.P.V=	-36,383
B/C=	0.00
FIRR=	#DIV/0!

Table L-22-6 Financial Evaluation of the Proposed Projects (Grand Total) (K7-48 Tangsorkh)

(1,000Rls.)

Year	Total cost	Total benefit	Net Benefit	I = 12%			
				Discount Rate	Cost	Benefit	N.P.V
1	959,866	0	-959,866	0.8929	857,064	0	-857,064
2	959,876	0	-959,876	0.7972	765,213	0	-765,213
3	959,876	0	-959,876	0.7118	683,240	0	-683,240
4	1,909,500	2,275,157	365,657	0.6355	1,213,487	1,445,862	232,375
5	1,909,500	2,275,157	365,657	0.5674	1,083,450	1,290,924	207,474
6	1,728,260	2,275,157	546,897	0.5066	875,537	1,152,595	277,058
7	1,728,260	2,275,157	546,897	0.4523	781,692	1,029,054	247,362
8	1,728,260	2,275,157	546,897	0.4039	698,044	918,936	220,892
9	1,310,447	2,275,157	964,710	0.3606	472,547	820,422	347,875
10	1,310,447	2,275,157	964,710	0.3220	421,964	732,601	310,637
11	1,310,447	2,275,157	964,710	0.2875	376,754	654,108	277,354
12	1,310,447	2,275,157	964,710	0.2567	336,392	584,033	247,641
13	1,310,447	2,275,157	964,710	0.2292	300,354	521,466	221,112
14	1,310,447	2,275,157	964,710	0.2046	268,117	465,497	197,380
15	1,310,447	2,275,157	964,710	0.1827	239,419	415,671	176,252
16	1,310,447	2,275,157	964,710	0.1631	213,734	371,078	157,344
17	1,310,447	2,275,157	964,710	0.1456	190,801	331,263	140,462
18	1,310,447	2,275,157	964,710	0.1300	170,358	295,770	125,412
19	1,305,890	2,275,157	969,267	0.1161	151,614	264,146	112,532
20	1,305,890	2,275,157	969,267	0.1037	135,421	235,934	100,513
21	1,305,890	2,275,157	969,267	0.0926	120,925	210,680	89,755
22	1,305,890	2,275,157	969,267	0.0826	107,867	187,928	80,061
23	1,305,890	2,275,157	969,267	0.0738	96,375	167,907	71,532
24	1,305,890	2,275,157	969,267	0.0659	86,058	149,933	63,875
25	1,305,890	2,275,157	969,267	0.0588	76,786	133,779	56,993
26	1,305,890	2,275,157	969,267	0.0525	68,559	119,446	50,887
27	1,305,890	2,275,157	969,267	0.0469	61,246	106,705	45,459
28	1,305,890	2,275,157	969,267	0.0419	54,717	95,329	40,612
29	1,305,890	2,275,157	969,267	0.0374	48,840	85,091	36,251
30	1,305,890	2,275,157	969,267	0.0334	43,617	75,990	32,373
31	1,305,890	2,275,157	969,267	0.0298	38,916	67,800	28,884
32	1,305,890	2,275,157	969,267	0.0266	34,737	60,519	25,782
33	1,305,890	2,275,157	969,267	0.0238	31,080	54,149	23,069
34	1,305,890	2,275,157	969,267	0.0212	27,685	48,233	20,548
35	1,305,890	2,275,157	969,267	0.0189	24,681	43,000	18,319
36	1,305,890	2,275,157	969,267	0.0169	22,070	38,450	16,380
37	1,305,890	2,275,157	969,267	0.0151	19,719	34,355	14,636
38	1,305,890	2,275,157	969,267	0.0135	17,630	30,715	13,085
39	1,305,890	2,275,157	969,267	0.0120	15,671	27,302	11,631
40	1,305,890	2,275,157	969,267	0.0107	13,973	24,344	10,371
41	1,305,890	2,275,157	969,267	0.0096	12,537	21,842	9,305
42	1,305,890	2,275,157	969,267	0.0086	11,231	19,566	8,335
43	1,305,890	2,275,157	969,267	0.0076	9,925	17,291	7,366
44	1,305,890	2,275,157	969,267	0.0068	8,880	15,471	6,591
45	1,305,890	2,275,157	969,267	0.0061	7,966	13,878	5,912
46	1,305,890	2,275,157	969,267	0.0054	7,052	12,286	5,234
47	1,305,890	2,275,157	969,267	0.0049	6,399	11,148	4,749
48	1,305,890	2,275,157	969,267	0.0043	5,615	9,783	4,168
	64,164,568	102,382,065	38,217,497		11,315,959	13,412,280	2,096,321

N.P.V=	2,096,321
B/C=	1.19
EIRR=	19.2%

Table L-22-7 Construction of check dam (Economic Analysis) (K7-48 Tangsorkh)

(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	392,750	0	392,750	0	-392,750	0.8929	350,686	0	-350,686
2	2003	392,750	0	392,750	0	-392,750	0.7972	313,100	0	-313,100
3	2004	392,750	0	392,750	0	-392,750	0.7118	279,559	0	-279,559
4	2005	392,750	67,300	460,050	642,238	182,188	0.6355	292,362	408,142	115,780
5	2006	392,750	67,300	460,050	642,238	182,188	0.5674	261,032	364,406	103,374
6	2007	392,750	67,300	460,050	642,238	182,188	0.5066	233,061	325,358	92,297
7	2008	392,750	67,300	460,050	642,238	182,188	0.4523	208,081	290,484	82,400
8	2009	392,750	67,300	460,050	642,238	182,188	0.4039	185,814	259,400	73,586
9	2010	0	67,300	67,300	642,238	574,938	0.3606	24,268	231,591	207,323
10	2011	0	67,300	67,300	642,238	574,938	0.3220	21,671	206,801	185,130
11	2012	0	67,300	67,300	642,238	574,938	0.2875	19,349	184,643	165,294
12	2013	0	67,300	67,300	642,238	574,938	0.2567	17,276	164,862	147,586
13	2014	0	67,300	67,300	642,238	574,938	0.2292	15,425	147,201	131,776
14	2015	0	67,300	67,300	642,238	574,938	0.2046	13,770	131,402	117,632
15	2016	0	67,300	67,300	642,238	574,938	0.1827	12,296	117,337	105,041
16	2017	0	67,300	67,300	642,238	574,938	0.1631	10,977	104,749	93,772
17	2018	0	67,300	67,300	642,238	574,938	0.1456	9,799	93,510	83,711
18	2019	0	67,300	67,300	642,238	574,938	0.1300	8,749	83,491	74,742
19	2020	0	67,300	67,300	642,238	574,938	0.1161	7,814	74,564	66,750
20	2021		67,300	67,300	642,238	574,938	0.1037	6,979	66,600	59,621
21	2022		67,300	67,300	642,238	574,938	0.0926	6,232	59,471	53,239
22	2023		67,300	67,300	642,238	574,938	0.0826	5,559	53,049	47,490
23	2024		67,300	67,300	642,238	574,938	0.0738	4,967	47,397	42,430
24	2025		67,300	67,300	642,238	574,938	0.0659	4,435	42,323	37,888
25	2026		67,300	67,300	642,238	574,938	0.0588	3,957	37,764	33,807
26	2027		67,300	67,300	642,238	574,938	0.0525	3,533	33,717	30,184
27	2028		67,300	67,300	642,238	574,938	0.0469	3,156	30,121	26,965
28	2029		67,300	67,300	642,238	574,938	0.0419	2,820	26,910	24,090
29	2030		67,300	67,300	642,238	574,938	0.0374	2,517	24,020	21,503
30	2031		67,300	67,300	642,238	574,938	0.0334	2,248	21,451	19,203
31	2032		67,300	67,300	642,238	574,938	0.0298	2,006	19,139	17,133
32	2033		67,300	67,300	642,238	574,938	0.0266	1,790	17,084	15,294
33	2034		67,300	67,300	642,238	574,938	0.0238	1,602	15,285	13,683
34	2035		67,300	67,300	642,238	574,938	0.0212	1,427	13,615	12,188
35	2036		67,300	67,300	642,238	574,938	0.0189	1,272	12,138	10,866
36	2037		67,300	67,300	642,238	574,938	0.0169	1,137	10,854	9,717
37	2038		67,300	67,300	642,238	574,938	0.0151	1,016	9,698	8,682
38	2039		67,300	67,300	642,238	574,938	0.0135	909	8,670	7,761
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		3,142,000	2,355,500	5,497,500	22,478,330	16,980,830		2,342,651	3,737,247	1,394,596

N.P.V=	1,394,596
B/C=	1.60
EIRR=	22.3%

Table L-22-8 Soil erosion protection (Economic Analysis) (K7-48 Tangsorkh)

(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	7,094	0	7,094	0	-7,094	0.8929	6,334	0	-6,334
2	2003	7,098	0	7,098	0	-7,098	0.7972	5,659	0	-5,659
3	2004	7,098	0	7,098	0	-7,098	0.7118	5,052	0	-5,052
4	2005	7,098	2,630	9,728	10,250	522	0.6355	6,182	6,514	332
5	2006	7,098	2,630	9,728	10,250	522	0.5674	5,520	5,816	296
6	2007	7,098	2,630	9,728	10,250	522	0.5066	4,928	5,193	265
7	2008	7,098	2,630	9,728	10,250	522	0.4523	4,400	4,636	236
8	2009	7,098	2,630	9,728	10,250	522	0.4039	3,929	4,140	211
9	2010	0	2,630	2,630	10,250	7,620	0.3606	948	3,696	2,748
10	2011	0	2,630	2,630	10,250	7,620	0.3220	847	3,301	2,454
11	2012	0	2,630	2,630	10,250	7,620	0.2875	756	2,947	2,191
12	2013	0	2,630	2,630	10,250	7,620	0.2567	675	2,631	1,956
13	2014	0	2,630	2,630	10,250	7,620	0.2292	603	2,349	1,746
14	2015	0	2,630	2,630	10,250	7,620	0.2046	538	2,097	1,559
15	2016	0	2,630	2,630	10,250	7,620	0.1827	481	1,873	1,392
16	2017	0	2,630	2,630	10,250	7,620	0.1631	429	1,672	1,243
17	2018	0	2,630	2,630	10,250	7,620	0.1456	383	1,492	1,109
18	2019	0	2,630	2,630	10,250	7,620	0.1300	342	1,333	991
19	2020	0	2,630	2,630	10,250	7,620	0.1161	305	1,190	885
20	2021		2,630	2,630	10,250	7,620	0.1037	273	1,063	790
21	2022		2,630	2,630	10,250	7,620	0.0926	244	949	705
22	2023		2,630	2,630	10,250	7,620	0.0826	217	847	630
23	2024		2,630	2,630	10,250	7,620	0.0738	194	756	562
24	2025		2,630	2,630	10,250	7,620	0.0659	173	675	502
25	2026		2,630	2,630	10,250	7,620	0.0588	155	603	448
26	2027		2,630	2,630	10,250	7,620	0.0525	138	538	400
27	2028		2,630	2,630	10,250	7,620	0.0469	123	481	358
28	2029		2,630	2,630	10,250	7,620	0.0419	110	429	319
29	2030		2,630	2,630	10,250	7,620	0.0374	98	383	285
30	2031		2,630	2,630	10,250	7,620	0.0334	88	342	254
31	2032		2,630	2,630	10,250	7,620	0.0298	78	305	227
32	2033		2,630	2,630	10,250	7,620	0.0266	70	273	203
33	2034		2,630	2,630	10,250	7,620	0.0238	63	244	181
34	2035		2,630	2,630	10,250	7,620	0.0212	56	217	161
35	2036		2,630	2,630	10,250	7,620	0.0189	50	194	144
36	2037		2,630	2,630	10,250	7,620	0.0169	44	173	129
37	2038		2,630	2,630	10,250	7,620	0.0151	40	155	115
38	2039		2,630	2,630	10,250	7,620	0.0135	36	138	102
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		56,780	92,050	148,830	358,750	209,920		50,561	59,645	9,084

N.P.V=	9,084
B/C=	1.18
EIRR=	15.7%

Table L-22-9 Rangeland vegetation improvement (Economic Analysis) (K7-48 Tangsorkh)

(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	780	0	780	0	-780	0.8929	696	0	-696
2	2003	780	0	780	0	-780	0.7972	622	0	-622
3	2004	780	0	780	0	-780	0.7118	555	0	-555
4	2005	780	6,900	7,680	88,700	81,020	0.6355	4,881	56,369	51,488
5	2006	780	6,900	7,680	88,700	81,020	0.5674	4,358	50,328	45,970
6	2007	780	6,900	7,680	88,700	81,020	0.5066	3,891	44,935	41,044
7	2008	780	6,900	7,680	88,700	81,020	0.4523	3,474	40,119	36,645
8	2009	780	6,900	7,680	88,700	81,020	0.4039	3,102	35,826	32,724
9	2010	780	6,900	7,680	88,700	81,020	0.3606	2,769	31,985	29,216
10	2011	780	6,900	7,680	88,700	81,020	0.3220	2,473	28,561	26,088
11	2012	0	6,900	6,900	88,700	81,800	0.2875	1,984	25,501	23,517
12	2013	0	6,900	6,900	88,700	81,800	0.2567	1,771	22,769	20,998
13	2014	0	6,900	6,900	88,700	81,800	0.2292	1,581	20,330	18,749
14	2015	0	6,900	6,900	88,700	81,800	0.2046	1,412	18,148	16,736
15	2016	0	6,900	6,900	88,700	81,800	0.1827	1,261	16,205	14,944
16	2017	0	6,900	6,900	88,700	81,800	0.1631	1,125	14,467	13,342
17	2018	0	6,900	6,900	88,700	81,800	0.1456	1,005	12,915	11,910
18	2019	0	6,900	6,900	88,700	81,800	0.1300	897	11,531	10,634
19	2020	0	6,900	6,900	88,700	81,800	0.1161	801	10,298	9,497
20	2021		6,900	6,900	88,700	81,800	0.1037	716	9,198	8,482
21	2022		6,900	6,900	88,700	81,800	0.0926	639	8,214	7,575
22	2023		6,900	6,900	88,700	81,800	0.0826	570	7,327	6,757
23	2024		6,900	6,900	88,700	81,800	0.0738	509	6,546	6,037
24	2025		6,900	6,900	88,700	81,800	0.0659	455	5,845	5,390
25	2026		6,900	6,900	88,700	81,800	0.0588	406	5,216	4,810
26	2027		6,900	6,900	88,700	81,800	0.0525	362	4,657	4,295
27	2028		6,900	6,900	88,700	81,800	0.0469	324	4,160	3,836
28	2029		6,900	6,900	88,700	81,800	0.0419	289	3,717	3,428
29	2030		6,900	6,900	88,700	81,800	0.0374	258	3,317	3,059
30	2031		6,900	6,900	88,700	81,800	0.0334	230	2,963	2,733
31	2032		6,900	6,900	88,700	81,800	0.0298	206	2,643	2,437
32	2033		6,900	6,900	88,700	81,800	0.0266	184	2,359	2,175
33	2034		6,900	6,900	88,700	81,800	0.0238	164	2,111	1,947
34	2035		6,900	6,900	88,700	81,800	0.0212	146	1,880	1,734
35	2036		6,900	6,900	88,700	81,800	0.0189	130	1,676	1,546
36	2037		6,900	6,900	88,700	81,800	0.0169	117	1,499	1,382
37	2038		6,900	6,900	88,700	81,800	0.0151	104	1,339	1,235
38	2039		6,900	6,900	88,700	81,800	0.0135	93	1,197	1,104
39	2040		6,900	6,900	88,700	81,800	0.0120	83	1,064	981
40	2041		6,900	6,900	88,700	81,800	0.0107	74	949	875
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		7,800	255,300	263,100	3,281,900	3,018,800		44,717	518,164	473,447

N.P.V=	473,447
B/C=	11.59
EIRR=	371.6%

Table L-22-10[Forestland vegetation recovery (Economic Analysis) (K7-48 Tangsorkh)

(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	0.8929	0	0	0	0
2	2003	0	0	0	0	0.7972	0	0	0	0
3	2004	0	0	0	0	0.7118	0	0	0	0
4	2005	0	2,600	2,600	56,400	0.6355	1,652	35,842	34,190	
5	2006	0	2,600	2,600	56,400	0.5674	1,475	32,001	30,526	
6	2007	0	2,600	2,600	56,400	0.5066	1,317	28,572	27,255	
7	2008	0	2,600	2,600	56,400	0.4523	1,176	25,510	24,334	
8	2009	0	2,600	2,600	56,400	0.4039	1,050	22,780	21,730	
9	2010	0	2,600	2,600	56,400	0.3606	938	20,338	19,400	
10	2011	0	2,600	2,600	56,400	0.3220	837	18,161	17,324	
11	2012	0	2,600	2,600	56,400	0.2875	748	16,215	15,467	
12	2013	0	2,600	2,600	56,400	0.2567	667	14,478	13,811	
13	2014	0	2,600	2,600	56,400	0.2292	596	12,927	12,331	
14	2015	0	2,600	2,600	56,400	0.2046	532	11,539	11,007	
15	2016	0	2,600	2,600	56,400	0.1827	475	10,304	9,829	
16	2017	0	2,600	2,600	56,400	0.1631	424	9,199	8,775	
17	2018	0	2,600	2,600	56,400	0.1456	379	8,212	7,833	
18	2019	0	2,600	2,600	56,400	0.1300	338	7,332	6,994	
19	2020	0	2,600	2,600	56,400	0.1161	302	6,548	6,246	
20	2021		2,600	2,600	56,400	0.1037	270	5,849	5,579	
21	2022		2,600	2,600	56,400	0.0926	241	5,223	4,982	
22	2023		2,600	2,600	56,400	0.0826	215	4,659	4,444	
23	2024		2,600	2,600	56,400	0.0738	192	4,162	3,970	
24	2025		2,600	2,600	56,400	0.0659	171	3,717	3,546	
25	2026		2,600	2,600	56,400	0.0588	153	3,316	3,163	
26	2027		2,600	2,600	56,400	0.0525	137	2,961	2,824	
27	2028		2,600	2,600	56,400	0.0469	122	2,645	2,523	
28	2029		2,600	2,600	56,400	0.0419	109	2,363	2,254	
29	2030		2,600	2,600	56,400	0.0374	97	2,109	2,012	
30	2031		2,600	2,600	56,400	0.0334	87	1,884	1,797	
31	2032		2,600	2,600	56,400	0.0298	77	1,681	1,604	
32	2033		2,600	2,600	56,400	0.0266	69	1,500	1,431	
33	2034		2,600	2,600	56,400	0.0238	62	1,342	1,280	
34	2035		2,600	2,600	56,400	0.0212	55	1,196	1,141	
35	2036		2,600	2,600	56,400	0.0189	49	1,066	1,017	
36	2037		2,600	2,600	56,400	0.0169	44	953	909	
37	2038									
38	2039									
39	2040									
40	2041									
41	2042									
42	2043									
43	2044									
44	2045									
45	2046									
46	2047									
47	2048									
48	2049									
		0	85,800	85,800	1,861,200	1,775,400		15,056	326,584	311,528

N.P.V= 311,528

B/C= 21.69

EIRR= #DIV/0!

Table L-22-11 Collecting and grading center of apples and vegetables (Economic Analysis) (K7-48 Tangsorkh)

(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	138,960	0	138,960	0	-138,960	0.8929	124,077	0	-124,077
2	2003	138,960	0	138,960	0	-138,960	0.7972	110,779	0	-110,779
3	2004	138,960	0	138,960	0	-138,960	0.7118	98,912	0	-98,912
4	2005	138,960	984,360	1,123,320	1,243,050	119,730	0.6355	713,870	789,958	76,088
5	2006	138,960	984,360	1,123,320	1,243,050	119,730	0.5674	637,372	705,307	67,935
6	2007	0	984,360	984,360	1,243,050	258,690	0.5066	498,677	629,729	131,052
7	2008	0	984,360	984,360	1,243,050	258,690	0.4523	445,226	562,232	117,006
8	2009	0	984,360	984,360	1,243,050	258,690	0.4039	397,583	502,068	104,485
9	2010	0	984,360	984,360	1,243,050	258,690	0.3606	354,960	448,244	93,284
10	2011	0	984,360	984,360	1,243,050	258,690	0.3220	316,964	400,262	83,298
11	2012	0	984,360	984,360	1,243,050	258,690	0.2875	283,004	357,377	74,373
12	2013	0	984,360	984,360	1,243,050	258,690	0.2567	252,685	319,091	66,406
13	2014	0	984,360	984,360	1,243,050	258,690	0.2292	225,615	284,907	59,292
14	2015	0	984,360	984,360	1,243,050	258,690	0.2046	201,400	254,328	52,928
15	2016	0	984,360	984,360	1,243,050	258,690	0.1827	179,843	227,105	47,262
16	2017	0	984,360	984,360	1,243,050	258,690	0.1631	160,549	202,741	42,192
17	2018	0	984,360	984,360	1,243,050	258,690	0.1456	143,323	180,988	37,665
18	2019	0	984,360	984,360	1,243,050	258,690	0.1300	127,967	161,597	33,630
19	2020	0	984,360	984,360	1,243,050	258,690	0.1161	114,284	144,318	30,034
20	2021		984,360	984,360	1,243,050	258,690	0.1037	102,078	128,904	26,826
21	2022		984,360	984,360	1,243,050	258,690	0.0926	91,152	115,106	23,954
22	2023		984,360	984,360	1,243,050	258,690	0.0826	81,308	102,676	21,368
23	2024		984,360	984,360	1,243,050	258,690	0.0738	72,646	91,737	19,091
24	2025		984,360	984,360	1,243,050	258,690	0.0659	64,869	81,917	17,048
25	2026		984,360	984,360	1,243,050	258,690	0.0588	57,880	73,091	15,211
26	2027		984,360	984,360	1,243,050	258,690	0.0525	51,679	65,260	13,581
27	2028		984,360	984,360	1,243,050	258,690	0.0469	46,166	58,299	12,133
28	2029		984,360	984,360	1,243,050	258,690	0.0419	41,245	52,084	10,839
29	2030		984,360	984,360	1,243,050	258,690	0.0374	36,815	46,490	9,675
30	2031		984,360	984,360	1,243,050	258,690	0.0334	32,878	41,518	8,640
31	2032		984,360	984,360	1,243,050	258,690	0.0298	29,334	37,043	7,709
32	2033		984,360	984,360	1,243,050	258,690	0.0266	26,184	33,065	6,881
33	2034		984,360	984,360	1,243,050	258,690	0.0238	23,428	29,585	6,157
34	2035		984,360	984,360	1,243,050	258,690	0.0212	20,868	26,353	5,485
35	2036		984,360	984,360	1,243,050	258,690	0.0189	18,604	23,494	4,890
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									
		694,800	31,499,520	32,194,320	39,777,600	7,583,280		6,184,224	7,176,874	992,650

N.P.V=	992,650
B/C=	1.16
EIRR=	34.2%

Table L-22-12 Rural water supply (Economic Analysis) (K7-48 Tangsorkh)

(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	31,534	0	31,534	0	-31,534	0.8929	28,157	0	-28,157
2	2003	31,533	0	31,533	0	-31,533	0.7972	25,138	0	-25,138
3	2004	31,533	0	31,533	0	-31,533	0.7118	22,445	0	-22,445
4	2005	0	66,200	66,200	12,820	-53,380	0.6355	42,070	8,147	-33,923
5	2006	0	66,200	66,200	12,820	-53,380	0.5674	37,562	7,274	-30,288
6	2007	0	66,200	66,200	12,820	-53,380	0.5066	33,537	6,495	-27,042
7	2008	0	66,200	66,200	12,820	-53,380	0.4523	29,942	5,798	-24,144
8	2009	0	66,200	66,200	12,820	-53,380	0.4039	26,738	5,178	-21,560
9	2010	0	66,200	66,200	12,820	-53,380	0.3606	23,872	4,623	-19,249
10	2011	0	66,200	66,200	12,820	-53,380	0.3220	21,316	4,128	-17,188
11	2012	0	66,200	66,200	12,820	-53,380	0.2875	19,033	3,686	-15,347
12	2013	0	66,200	66,200	12,820	-53,380	0.2567	16,994	3,291	-13,703
13	2014	0	66,200	66,200	12,820	-53,380	0.2292	15,173	2,938	-12,235
14	2015	0	66,200	66,200	12,820	-53,380	0.2046	13,545	2,623	-10,922
15	2016	0	66,200	66,200	12,820	-53,380	0.1827	12,095	2,342	-9,753
16	2017	0	66,200	66,200	12,820	-53,380	0.1631	10,797	2,091	-8,706
17	2018	0	66,200	66,200	12,820	-53,380	0.1456	9,639	1,867	-7,772
18	2019	0	66,200	66,200	12,820	-53,380	0.1300	8,606	1,667	-6,939
19	2020	0	66,200	66,200	12,820	-53,380	0.1161	7,686	1,488	-6,198
20	2021		66,200	66,200	12,820	-53,380	0.1037	6,865	1,329	-5,536
21	2022		66,200	66,200	12,820	-53,380	0.0926	6,130	1,187	-4,943
22	2023		66,200	66,200	12,820	-53,380	0.0826	5,468	1,059	-4,409
23	2024		66,200	66,200	12,820	-53,380	0.0738	4,886	946	-3,940
24	2025		66,200	66,200	12,820	-53,380	0.0659	4,363	845	-3,518
25	2026		66,200	66,200	12,820	-53,380	0.0588	3,893	754	-3,139
26	2027		66,200	66,200	12,820	-53,380	0.0525	3,476	673	-2,803
27	2028		66,200	66,200	12,820	-53,380	0.0469	3,105	601	-2,504
28	2029		66,200	66,200	12,820	-53,380	0.0419	2,774	537	-2,237
29	2030		66,200	66,200	12,820	-53,380	0.0374	2,476	479	-1,997
30	2031		66,200	66,200	12,820	-53,380	0.0334	2,211	428	-1,783
31	2032		66,200	66,200	12,820	-53,380	0.0298	1,973	382	-1,591
32	2033		66,200	66,200	12,820	-53,380	0.0266	1,761	341	-1,420
33	2034		66,200	66,200	12,820	-53,380	0.0238	1,576	305	-1,271
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									
		94,600	1,986,000	2,080,600	384,600	-1,696,000		455,302	73,502	-381,800

N.P.V= -381,800

B/C= 0.16

EIRR= #DIV/0!

Table L-22-13 Rural road improvement (Economic Analysis) (K7-48 Tangsorkh)

(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	303,366	0	303,366	0	-303,366	0.8929	270,876	0	-270,876
2	2003	303,367	0	303,367	0	-303,367	0.7972	241,844	0	-241,844
3	2004	303,367	0	303,367	0	-303,367	0.7118	215,937	0	-215,937
4	2005	0	45,900	45,900	95,250	49,350	0.6355	29,169	60,531	31,362
5	2006	0	45,900	45,900	95,250	49,350	0.5674	26,044	54,045	28,001
6	2007	0	45,900	45,900	95,250	49,350	0.5066	23,253	48,254	25,001
7	2008	0	45,900	45,900	95,250	49,350	0.4523	20,761	43,082	22,321
8	2009	0	45,900	45,900	95,250	49,350	0.4039	18,539	38,471	19,932
9	2010	0	45,900	45,900	95,250	49,350	0.3606	16,552	34,347	17,795
10	2011	0	45,900	45,900	95,250	49,350	0.3220	14,780	30,671	15,891
11	2012	0	45,900	45,900	95,250	49,350	0.2875	13,196	27,384	14,188
12	2013	0	45,900	45,900	95,250	49,350	0.2567	11,783	24,451	12,668
13	2014	0	45,900	45,900	95,250	49,350	0.2292	10,520	21,831	11,311
14	2015	0	45,900	45,900	95,250	49,350	0.2046	9,391	19,488	10,097
15	2016	0	45,900	45,900	95,250	49,350	0.1827	8,386	17,402	9,016
16	2017	0	45,900	45,900	95,250	49,350	0.1631	7,486	15,535	8,049
17	2018	0	45,900	45,900	95,250	49,350	0.1456	6,683	13,868	7,185
18	2019	0	45,900	45,900	95,250	49,350	0.1300	5,967	12,383	6,416
19	2020	0	45,900	45,900	95,250	49,350	0.1161	5,329	11,059	5,730
20	2021		45,900	45,900	95,250	49,350	0.1037	4,760	9,877	5,117
21	2022		45,900	45,900	95,250	49,350	0.0926	4,250	8,820	4,570
22	2023		45,900	45,900	95,250	49,350	0.0826	3,791	7,868	4,077
23	2024		45,900	45,900	95,250	49,350	0.0738	3,387	7,029	3,642
24	2025		45,900	45,900	95,250	49,350	0.0659	3,025	6,277	3,252
25	2026		45,900	45,900	95,250	49,350	0.0588	2,699	5,601	2,902
26	2027		45,900	45,900	95,250	49,350	0.0525	2,410	5,001	2,591
27	2028		45,900	45,900	95,250	49,350	0.0469	2,153	4,467	2,314
28	2029		45,900	45,900	95,250	49,350	0.0419	1,923	3,991	2,068
29	2030		45,900	45,900	95,250	49,350	0.0374	1,717	3,562	1,845
30	2031		45,900	45,900	95,250	49,350	0.0334	1,533	3,181	1,648
31	2032		45,900	45,900	95,250	49,350	0.0298	1,368	2,838	1,470
32	2033		45,900	45,900	95,250	49,350	0.0266	1,221	2,534	1,313
33	2034		45,900	45,900	95,250	49,350	0.0238	1,092	2,267	1,175
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									
		910,100	1,377,000	2,287,100	2,857,500	570,400		991,825	546,115	-445,710

N.P.V=	-445,710
B/C=	0.55
EIRR=	3.2%

Table L-22-14 Establishment of cooperative (Economic Analysis) (K7-48 Tangsorkh)

(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	4,287	0	4,287	0	-4,287	0.8929	3,828	0	-3,828
2	2003	4,289	0	4,289	0	-4,289	0.7972	3,419	0	-3,419
3	2004	4,289	0	4,289	0	-4,289	0.7118	3,053	0	-3,053
4	2005	4,289	530	4,819	0	-4,819	0.6355	3,062	0	-3,062
5	2006	4,289	530	4,819	0	-4,819	0.5674	2,734	0	-2,734
6	2007	4,289	530	4,819	0	-4,819	0.5066	2,441	0	-2,441
7	2008	4,289	530	4,819	0	-4,819	0.4523	2,180	0	-2,180
8	2009	4,289	530	4,819	0	-4,819	0.4039	1,946	0	-1,946
9	2010	4,289	530	4,819	0	-4,819	0.3606	1,738	0	-1,738
10	2011	4,289	530	4,819	0	-4,819	0.3220	1,552	0	-1,552
11	2012	4,289	530	4,819	0	-4,819	0.2875	1,385	0	-1,385
12	2013	4,289	530	4,819	0	-4,819	0.2567	1,237	0	-1,237
13	2014	4,289	530	4,819	0	-4,819	0.2292	1,105	0	-1,105
14	2015	4,289	530	4,819	0	-4,819	0.2046	986	0	-986
15	2016	4,289	530	4,819	0	-4,819	0.1827	880	0	-880
16	2017	4,289	530	4,819	0	-4,819	0.1631	786	0	-786
17	2018	4,289	530	4,819	0	-4,819	0.1456	702	0	-702
18	2019	4,289	530	4,819	0	-4,819	0.1300	626	0	-626
19	2020	0	530	530	0	-530	0.1161	62	0	-62
20	2021		530	530	0	-530	0.1037	55	0	-55
21	2022		530	530	0	-530	0.0926	49	0	-49
22	2023		530	530	0	-530	0.0826	44	0	-44
23	2024		530	530	0	-530	0.0738	39	0	-39
24	2025		530	530	0	-530	0.0659	35	0	-35
25	2026		530	530	0	-530	0.0588	31	0	-31
26	2027		530	530	0	-530	0.0525	28	0	-28
27	2028		530	530	0	-530	0.0469	25	0	-25
28	2029		530	530	0	-530	0.0419	22	0	-22
29	2030		530	530	0	-530	0.0374	20	0	-20
30	2031		530	530	0	-530	0.0334	18	0	-18
31	2032		530	530	0	-530	0.0298	16	0	-16
32	2033		530	530	0	-530	0.0266	14	0	-14
33	2034		530	530	0	-530	0.0238	13	0	-13
34	2035		530	530	0	-530	0.0212	11	0	-11
35	2036		530	530	0	-530	0.0189	10	0	-10
36	2037		530	530	0	-530	0.0169	9	0	-9
37	2038		530	530	0	-530	0.0151	8	0	-8
38	2039		530	530	0	-530	0.0135	7	0	-7
39	2040		530	530	0	-530	0.0120	6	0	-6
40	2041		530	530	0	-530	0.0107	6	0	-6
41	2042		530	530	0	-530	0.0096	5	0	-5
42	2043		530	530	0	-530	0.0086	5	0	-5
43	2044		530	530	0	-530	0.0076	4	0	-4
44	2045		530	530	0	-530	0.0068	4	0	-4
45	2046		530	530	0	-530	0.0061	3	0	-3
46	2047		530	530	0	-530	0.0054	3	0	-3
47	2048		530	530	0	-530	0.0049	3	0	-3
48	2049		530	530	0	-530	0.0043	2	0	-2
		77,200	23,850	101,050	0	-101,050		34,217	0	-34,217

N.P.V=	-34,217
B/C=	0.00
EIRR=	#DIV/0!

Table L-22-15 Economic Evaluation of the Proposed Projects (Grand Total) (K7-48 Tangsorkh)

(1,000Rls.)

Year	Total cost	Total benefit	Net Benefit	I = 12%			
				Discount Rate	Cost	Benefit	N.P.V
1	878,771	0	-878,771	0.8929	784,655	0	-784,655
2	878,778	0	-878,778	0.7972	700,562	0	-700,562
3	878,778	0	-878,778	0.7118	625,514	0	-625,514
4	1,720,298	2,631,096	910,798	0.6355	1,093,249	1,672,062	578,813
5	1,720,298	2,631,096	910,798	0.5674	976,097	1,492,884	516,787
6	1,581,338	2,631,096	1,049,758	0.5066	801,106	1,332,913	531,807
7	1,581,338	2,631,096	1,049,758	0.4523	715,239	1,190,045	474,806
8	1,581,338	2,631,096	1,049,758	0.4039	638,702	1,062,700	423,998
9	1,181,490	2,631,096	1,449,606	0.3606	426,045	948,773	522,728
10	1,181,490	2,631,096	1,449,606	0.3220	380,440	847,213	466,773
11	1,180,710	2,631,096	1,450,386	0.2875	339,454	756,440	416,986
12	1,180,710	2,631,096	1,450,386	0.2567	303,088	675,402	372,314
13	1,180,710	2,631,096	1,450,386	0.2292	270,619	603,047	332,428
14	1,180,710	2,631,096	1,450,386	0.2046	241,573	538,322	296,749
15	1,180,710	2,631,096	1,450,386	0.1827	215,716	480,701	264,985
16	1,180,710	2,631,096	1,450,386	0.1631	192,574	429,132	236,558
17	1,180,710	2,631,096	1,450,386	0.1456	171,911	383,088	211,177
18	1,180,710	2,631,096	1,450,386	0.1300	153,492	342,042	188,550
19	1,176,420	2,631,096	1,454,676	0.1161	136,582	305,470	168,888
20	1,176,420	2,631,096	1,454,676	0.1037	121,995	272,845	150,850
21	1,176,420	2,631,096	1,454,676	0.0926	108,936	243,639	134,703
22	1,176,420	2,631,096	1,454,676	0.0826	97,172	217,329	120,157
23	1,176,420	2,631,096	1,454,676	0.0738	86,820	194,175	107,355
24	1,176,420	2,631,096	1,454,676	0.0659	77,526	173,389	95,863
25	1,176,420	2,631,096	1,454,676	0.0588	69,173	154,708	85,535
26	1,176,420	2,631,096	1,454,676	0.0525	61,762	138,133	76,371
27	1,176,420	2,631,096	1,454,676	0.0469	55,174	123,398	68,224
28	1,176,420	2,631,096	1,454,676	0.0419	49,292	110,243	60,951
29	1,176,420	2,631,096	1,454,676	0.0374	43,998	98,403	54,405
30	1,176,420	2,631,096	1,454,676	0.0334	39,292	87,879	48,587
31	1,176,420	2,631,096	1,454,676	0.0298	35,057	78,407	43,350
32	1,176,420	2,631,096	1,454,676	0.0266	31,293	69,987	38,694
33	1,176,420	2,631,096	1,454,676	0.0238	27,999	62,620	34,621
34	1,176,420	2,631,096	1,454,676	0.0212	24,940	55,779	30,839
35	1,176,420	2,631,096	1,454,676	0.0189	22,234	49,728	27,494
36	1,176,420	2,631,096	1,454,676	0.0169	19,881	44,466	24,585
37	1,176,420	2,631,096	1,454,676	0.0151	17,764	39,730	21,966
38	1,176,420	2,631,096	1,454,676	0.0135	15,882	35,520	19,638
39	1,176,420	2,631,096	1,454,676	0.0120	14,117	31,573	17,456
40	1,176,420	2,631,096	1,454,676	0.0107	12,588	28,153	15,565
41	1,176,420	2,631,096	1,454,676	0.0096	11,294	25,259	13,965
42	1,176,420	2,631,096	1,454,676	0.0086	10,117	22,627	12,510
43	1,176,420	2,631,096	1,454,676	0.0076	8,941	19,996	11,055
44	1,176,420	2,631,096	1,454,676	0.0068	8,000	17,891	9,891
45	1,176,420	2,631,096	1,454,676	0.0061	7,176	16,050	8,874
46	1,176,420	2,631,096	1,454,676	0.0054	6,353	14,208	7,855
47	1,176,420	2,631,096	1,454,676	0.0049	5,764	12,892	7,128
48	1,176,420	2,631,096	1,454,676	0.0043	5,059	11,314	6,255
	57,922,197	118,399,320	60,477,123		10,262,217	15,510,575	5,248,358

N.P.V=	5,248,358
B/C=	1.51
EIRR=	31.0%