Table A-23 Financial Planning Table (Case B-1), (Risk 1 = Tariff Tsh. 900 and RCC Collection Rate 60%)

Year	Unit	1999	2000	2001	2002	2003	2004	2005	2006
1. Costs	million Tsh.	2045	1148	1580	2072	2424	2915	2352	C
1.1 Investment Cost	million Tsh.	1922	495	069	910	868	ത	ì	C
1.1.1 Skip Truck	million Tsh.	786	262	367	472	472	524	0	
1.1.2 Container	million Tsh.	671	224	313	402	405	447	0	Ö
1.1.3 Push Cart	million Tsh.	23	6	10	36	24	26	0	Ō
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	0	0	0
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	0
1.2.1 Labour (Primary)	million Tsh.	0	29	111	145	192	243	299	0
1.2.2 Repair (Primary)	million Tsh.	0	5	9	8		14	17	Ō
1.2.3 Labour (Secondary)	million Tsh.	0		14	19	26	32	40	ō
1.2.4 Fue! (Secondary)	million Tsh.	0	69	95	125	167	209	255	O
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	O
1.2.6 Maintenance Shop	million Tsh.	0	32	35	35	32	32	32	O
1.3 Disposal Fee	million Tsh.	107	218	304	399	527	299	822	0
1.4 Indirect Cost	million Tsh.	16	82	116	152	199	250	307	O
2. Revenues	million Tsh.	242	620	622	938	1206	1465	1750	2727
2.1 RCC from Households	million Tsh.	136	244	367	504	089	879	1102	1
2.1.1 Tariff	Tsh./month/household	006	900	006	006	006	006	006	O
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	0
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	60.0	60.0	60.0	60.0	0.09	0.09	60.0	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	282	648	0
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	0
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	0
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	0	Ö
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	O	0	0	O
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2727
3. Balance		-1803	-527	-801	-1133	-1218	-1450	-601	2727
							1 : 1 i	T	, ;

4	
ate	
on R	
lecti	
ဒိ	
ပ္ထ	
and	
9	
٠ <u>.</u>	
ff Ts	
Tan:	
3	
~	
(Risk	
~	
8-1	
Case	
able (	
ק ה	
annin	
<u>8</u>	
anci	
Ē	
1-24	
ie A	
면	

200	Unit million Teb	1999	2000	1580	2002	2003	4   2	8 1/	2006
	million 15n.	2042	2 1	1580	7/07	7474	2915	7355	
11 1 Skin Truck	million Isn.	276:	495	0690	910	888	766	0 0	
1.1.2 Container	million Tsh.	671	224	313	402	402	447	Ö	
1.1.3 Push Cart	million Tsh.	23	Ø	-	36	24	26	0	
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	o	0	°
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	008 .	1001	1223	0
1.2.1 Labour (Primary)	million Tsh.	0	62	111	145	192	243	299	0
1.2.2 Repair (Primary)	million Tsh.	0	5	9	œ	1,	14	171	0
1.2.3 Labour (Secondary)	million Tsh.	0	11	14	19	92	32	40	0
1.2.4 Fuel (Secondary)	million Tsh.	0	69	92.	125	167	503	255	0
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	280	0
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	32	0
	million Tsh.	107	218	304	668	527	299	822	0
1.4 Indirect Cost	million Tsh.	16	85	116	152	199	250	307	0
	million Tsh.	216	575	711	845	1080	1303	1546	2727
2.1 RCC from Households	million Tsh.	111	199	599	411	554	216	868	0
	Tsh./month/household	1100	0011	1100	1100	1100	1100	1100	0
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	0
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	282	648	0
	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	0
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	Ó	0	0
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	O	0
	million Tsh.	0	0	0	0	0	0	0	2727
		-1828	-573	-869	-1227	-1244	1612	000	2722

Year Unit 1999 2000 2001 200	Unit	1999	2000	2001	2002	2003	2004	2005	2006
1. Costs	million Tsh.	2045	1148	1580	2072	2424	2915	2352	C
1.1 investment Cost	million Tsh.	1922	495	069	910	898	266	3	
1.1.1 Skip Truck	million Tsh.	786	262	367	472	472	524	0	lc
1.1.2 Container	million Tsh.	671	224	313	402	402	447	0	0
1.1.3 Push Cart	million Tsh.	23	6	01	36	24	26	0	0
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	0	0	0
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	0
1.2.1 Labour (Primary)	million Tsh.	0	79	111	145	192	243	299	0
1.2.2 Repair (Primary)	million Tsh.	0	5	ဖ	ω	11	4	17	0
1.2.3 Labour (Secondary)	million Tsh.	0	11	14	19	26	32	40	0
1.2.4 Fuel (Secondary)	million Tsh.	0	69	95	125	167	509	255	O
7.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	O
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	32	
1.3 Disposal Fee	million Tsh.	107	218	304	399	527	299	822	C
1.4 Indirect Cost	million Tsh.	16	85	116	152	199	250	307	C
2. Revenues	million Tsh.	196	539	656	770	979	1173	1383	2727
2.1 RCC from Households	million Tsh.	91	163	245	336	454	586	735	C
2.1.1 Tariff	Tsh./month/household	006	006	006	900	900	006	006	C
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	C
2.1.3 Waste Collection Rate	%	9.7	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	00
2.2 RCC from Others	million Tsh.	105	376	412	434	525	287	648	O
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	0
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	0
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	C
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	C
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	0	C
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	Ö	C
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2727
3. Balance		-1848	609-	-924	-1301	-1445	-1742	696-	2727

ומסי היוס אלבים היוס ו מחוווון ומוווווק ומוווון מביריסומה ו	ı t	Tailli 1911, 1 100 and ACC Collection Rate 60%)	טט מוזם טט	Collection r	(are on%)				
Year	Unit	1999	2000	2001	2002	2003	2004	2005	2006
1. Costs	million Tsh.	1988	1032	1419	1860	2145	2561	1915	O
1.1 Investment Cost	million Tsh.	1922	495	069	910	868	266	0	0
1.1.1 Skip Truck	million Tsh.	786	292	367	472	472	524	ō	Õ
1.1.2 Container	million Tsh.	129	224	313	402	402	447	0	ō
1.1.3 Push Cart	million Tsh.	23	6	0.	36	24	92	0	O
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	0	0	Ö
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	Ó
1.2.1 Labour (Primary)	million Tsh.	0	62	111	145	192	243	299	O
1.2.2 Repair (Primary)	million Tsh.	0	5	9	8	11	14	17	0
1.2.3 Labour (Secondary)	million Tsh.	0	11	4:	19	58	32	04	O
1.2.4 Fuel (Secondary)	million Tsh.	0	69	92	125	167	503	255	0
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	280	O
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	32	O
1.3 Disposal Fee	million Tsh.	58	117	164	215	284	359	442	Ö
1.4 Indirect Cost	million Tsh.	6	20	95	124	163	204	250	0
2. Revenues	million Tsh.	272	675	860	1050	1357	1661	1995	2727
2.1 RCC from Households	million Tsh.	167	298	449	616	831	1074	1347	0
2.1.1 Tariff	Tsh./month/household	1100	1100	1100	1100	1100	1100	1100	O
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	Ō
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	60.0	0'09	0.09	0.09	60.0	60.0	60.0	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	587	648	0
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	0
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	O
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	0	0
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	O	0
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2727
3. Balance		-1716	-357	-559	608-	-788	006-	18	2727

(ate 60%)
C Collection F
900 and RC(
= Tariff Tsh.
2), (Risk 1
(Case B-2
nning Table
inancial Pla
able A-27 F

Year Unit	Unit	1999	2000 2001	2001	2002	2003	2004	2005	2006
1. Costs	million Tsh.	1988	1032	1419	1860	2145	2561	1915	C
1.1 Investment Cost	million Tsh.	1922	495	069	910	868	266	1 -	0
1.1.1 Skip Truck	million Tsh.	786	262	367	472	472	524	0	0
1.1.2 Container	million Tsh.	671	224	313	402	402	447	0	0
1.1.3 Push Cart	million Tsh.	23	6	10	36	24	26	O	0
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	0	0	O
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	Ö
1.2.1 Labour (Primary)	million Tsh.	0	62	111	145	192	243	562	0
1.2.2 Repair (Primary)	milion Tsh.	Ö	5	9	8	11	14	17	0
1.2.3 Labour (Secondary)	million Tsh.	0	11	14	19	92	32	04	Ó
1.2.4 Fuel (Secondary)	million Tsh.	0	69	95	125	167	500	255	0
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	O
1.2.6 Maintenance Shop	million Tsh.	0	32	32	35	32	32	32	O
1.3 Disposal Fee	million Tsh.	58	711	164	215	284	359	442	O
1.4 Indirect Cost	million Tsh.	6	20	95	124	163	204	250	0
2. Revenues	million Tsh.	242	620	279	938	1206	1465	1750	2727
2.1 RCC from Households	million Tsh.	136	244	367	504	089	879	1102	
2.1.1 Tariff	Tsh./month/household	006	006	006	006	006	006	006	Ö
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	ō
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	60.0	60.0	0.09	60.0	60.0	0.09	60.09	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	587	648	ō
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	O
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	0
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	ō	O
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	0	0
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2727
3. Balance		-1747	-411	-640	-925	-939	-1095	-164	2727





Year   Unit	1999 1988 1922 786 671 671 0 0 0	2000 1032 495 262 262 224 9 9 0 0 79 79 79 79 79 111	2001 1419 690 867 313 10 0 0 0 470 111 111 14 16 64 17 18 18 18 18 18 18 18 18 18 18 18 18 18	2002 1860 910 910 402 36 0 0 0 1145 19	2003 2145 2145 898 472 402 24	2004 2561 997	2005	2006
1.1 Investment Cost 1.1.1 Skip Truck 1.1.2 Container 1.1.3 Push Cart 1.1.4 Maintenance Shop 1.2 Operation and Maintenance 1.2.2 Repair (Primary) 1.2.2 Repair (Primary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.2.7 Repair (Secondary) 1.2.7 Repair (Secondary) 1.2.7 Repair (Secondary) 1.2.8 Repair (Secondary) 1.2.9 Repair (Secondary) 1.2.1 Revenues 2.1 Rec from Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.1.4 RCC Collection Rate 2.2.2 RCC from Others 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	1988 786 671 671 0 0	1032 495 262 224 9 0 0 350 79 79 11 11 113	32 32 32 313 313 313 313 313 470 6 6 6 8 14 111 14 14 16 16 16 16 16 16 16 16 16 16 16 16 16	1860 910 472 402 36 36 611 145 8	2145 898 472 402 24	2561	I ←- I	
1.1 Investment Cost 1.1.1 Skip Truck 1.1.2 Container 1.1.3 Push Cart 1.1.3 Push Cart 1.2 Operation and Maintenance 1.2.1 Labour (Primary) 1.2.2 Repair (Primary) 1.2.3 Labour (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.2.5 Repair (Secondary) 2.1.7 Andirect Cost 2.1.8 Waste Collection Rate 2.1.2 Number of Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.2.1 Tariff 2.2.2 RCC from Others 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	1922 786 671 671 0 0 0 0	262 224 224 9 9 350 350 79 79 111 111 154	690 367 313 10 0 0 0 0 111 111 14 12 82 82 82 82 82 82 82 82 82 82 82 82 82	910 472 402 36 36 0 0 1145 145	898 472 402 24	266	7	1
1.1.1 Skip Truck 1.1.2 Container 1.1.3 Push Cart 1.1.3 Push Cart 1.1.4 Maintenance Shop 1.2 Operation and Maintenance 1.2.2 Repair (Primary) 1.2.2 Repair (Primary) 1.2.3 Labour (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.1 Tariff 2.2.2 RCC from Others 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	786 671 671 0 0 0 0	262 224 9 9 350 79 79 79 11 11 154	367 10 0 0 0 470 111 111 14 92 32 32	472 402 36 0 0 0 1145 19	472 402 24		5	Š
1.1.2 Container 1.1.3 Push Cart 1.1.4 Maintenance Shop 1.2 Operation and Maintenance 1.2.2 Repair (Primary) 1.2.2 Repair (Primary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.2.7 Repair (Secondary) 1.2.7 Repair (Secondary) 1.2.8 Repair (Secondary) 1.2.9 Roc from Households 2.1.1 Rariff 2.1.1 Tariff 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.1.2 Amount of Waste Collected 2.2.2 RCC from Others 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate	671 442 0 0 0 0	224 9 9 350 350 79 79 79 111 111	313 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	402 36 36 1145 145 19	402	524	ō	0
1.1.3 Push Cart 1.1.4 Maintenance Shop 1.2 Operation and Maintenance 1.2.1 Labour (Primary) 1.2.2 Repair (Primary) 1.2.3 Labour (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.2.7 RCC from Households 2.1 RCC from Households 2.1.2 Number of Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.1.4 RCC Collection Rate 2.2.2 RCC from Others 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate	442 23	9 350 79 79 111 1154 154	0 0 470 0 111 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	36 611 145 19	24	447	0	0
1.1.4 Maintenance Shop 1.2 Operation and Maintenance 1.2.1 Labour (Primary) 1.2.2 Repair (Primary) 1.2.3 Labour (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.1.4 RCC Collection Rate 2.2.2 RCC from Others 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	000000	32 32 32 32 317	0 470 111 141 92 32 32 32	4    0	-	26	0	0
1.2 Operation and Maintenance 1.2.1 Labour (Primary) 1.2.2 Repair (Primary) 1.2.3 Labour (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost 2.1 RCC from Households 2.1.1 Tariff 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.2 RCC from Others 2.2 RCC from Others 2.2.1 Tariff 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	000000	350 5 5 69 69 113 32	470 111 6 6 14 92 32 32	611 8 8 135	0	0	0	0
1.2.1 Labour (Primary) 1.2.2 Repair (Primary) 1.2.2 Repair (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.2 Number of Households 2.1.2 Number of Households 2.1.2 Number of Households 2.2.3 Waste Collection Rate 2.2.2 RCC from Others 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	00000	79 5 11 11 154 32	111 6 14 14 92 32 32 32	145	800	1001	1223	0
1.2.2 Repair (Primary) 1.2.3 Labour (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.2.1 Tariff 2.2.2 RCC from Others 2.2.2 RCC from Others 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate	0000	5 69 69 154 117	6 14 92 215 32 32	135	192	243	299	0
1.2.3 Labour (Secondary) 1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost 2.1 RCC from Households 2.1.1 Tariff 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.2 RCC from Others 2.2 RCC from Others 2.2.1 Tariff 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	0000	11 69 154 32	14 92 215 32 164	135	11	4	17	0
1.2.4 Fuel (Secondary) 1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.2 Number of Households 2.1.4 RCC Collection Rate 2.1.4 RCC Collection Rate 2.2.2 RCC from Others 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	000	69 154 32 117	92 215 32 164	70.6	92	32	40	0
1.2.5 Repair (Secondary) 1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.2 RCC from Others 2.2.2 RCC from Others 2.2.3 Waste Collected 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC from Others 2.2.3 Waste Collected 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	00	154 32 117	32	C7	167	209	255	0
1.2.6 Maintenance Shop 1.3 Disposal Fee 1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.3 Waste Collection Rate 2.2 RCC from Others 2.2.1 Tariff 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate	O	32	32	282	372	471	580	0
1.3 Disposal Fee  1.4 Indirect Cost Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.2 RCC from Others 2.2 RCC from Others 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate		117	164	32	32	32	32	0
Revenues 2.1 RCC from Households 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.1.4 RCC Collection Rate 2.2.1 Tariff 2.2.2 RCC from Others 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	58			215	284	359	442	0
2.1 RCC from Households 2.1.1 Tariff 2.1.2 Number of Households 2.1.3 Waste Collection Rate 2.1.4 RCC Collection Rate 2.2 RCC from Others 2.2.1 Tariff 2.2.2 Amount of Waste Collected 2.2.3 Waste Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate 2.2.2 RCC Collection Rate	6	20	95	124	163	204	250	0
& ected	216	575	711	845	1080	1303	1546	2727
ected e	111	199	299	411	554	716	868	0
ected	1100	1100	1100	1100	1100	1100	1100	0
ected	277153	294312	314826	336878	360769	386270	414931	0
ected	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
ected	40.0	40.0	40.0	40.0	40.0	40.0	40.0	0.0
ected	105	376	412	434	525	285	648	0
ected	24000	24000	24000	24000	24000	24000	24000	0
	120	129	135	142	153	163	172	0
	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
43	ō	0	0	0	0	0	0	0
2.4 Subsidy from Leasing Fee million Tsh.	0	0	0	0	0	0	0	0
2.5 Scrap Value million Tsh.	0	0	0	0	0	0	0	2727
3. Balance	-1772	-457	-708	-1015	-1065	-1258	698-	2727

Year	Unit	1999	2000	2001	2002	2003	2004	2002	2006
Costs	million Tsh.	1988	1032	1419	1860	2145	2561	1915	0
1.1 Investment Cost	million Tsh.	1922	495	069	910	868	266	ō	
1.1.1 Skip Truck	million Tsh.	786	262	367	472	472	524	0	0
1.1.2 Container	million Tsh.	671	224	313	402	402	447	0	0
1.1.3 Push Cart	million Tsh.	23	6	10	36	24	26	o	0
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	0	0	0
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	0
1.2.1 Labour (Primary)	million Tsh.	0	62	111	145	192	243	562	0
1.2.2 Repair (Primary)	million Tsh.	0	5	9	80	11	4,	17	0
1.2.3 Labour (Secondary)	million Tsh.	0	11	14	9.	26	32	40	0
1.2.4 Fuel (Secondary)	million Tsh.	O	69	95	125	167	503	255	
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	0
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	32	0
1.3 Disposal Fee	million Tsh.	58	117	164	215	284	359	442	
1.4 Indirect Cost	million Tsh.	6	20	95	124	163	204	250	
2. Revenues	million Tsh.	196	539	656	770	626	1173	1383	2727
2.1 RCC from Households	million Tsh.	91	163	245	336	424	586	735	°
2.1.1 Tariff	Tsh./month/household	006	006	006	006	006	006	006	0
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	0
2.1.3 Waste Collection Rate	%	2.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	282	648	0
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	0
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	0
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	ō	
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	0	0
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2727
3. Balance		-1792	-493	-763	10001	3366	000	( C L	

Table A-30 Financial Planning Table (Case B-3), (Base Case	B	Tariff Tsh. 1	1100 and RCC	Collection Rate 60%	late 60%)				
Year	Unit	1999	2000	2001	2002	2003	2004	2005	2006
1. Costs	million Tsh.	532	546	739	1860	2145	2561	1915	O
1.1 Investment Cost	million Tsh.	465	6	10	910	868	266	0	Ō
1.1.1 Skip Truck	million Tsh.	0	0	0	472	472	524	0	O
1.1.2 Container	million Tsh.	0	0	0	402	405	447	0	Ō
1.1.3 Push Cart	million Tsh.	23	6	10	36	24	26	0	0
11.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	0	0	0
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	0
1.2.1 Labour (Primary)	million Tsh.	0	19	111	145	192	243	299	Õ
1.2.2 Repair (Primary)	million Tsh.	0	5	9	8	111	41	121	Ó
1.2.3 Labour (Secondary)	million Tsh.	0	11	14	19	26	32	40	0
1.2.4 Fuel (Secondary)	million Tsh.	0	69	95	125	167	509	255	0
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	280	0
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	32	Ō
1.3 Disposal Fee	million Tsh.	58	117	164	215	284	359	442	Ō
1.4 Indirect Cost	million Tsh.	6	70	95	124	163	204	250	Ō
2. Revenues	million Tsh.	272	675	860	1050	1357	1661	1995	2089
2.1 RCC from Households	million Tsh.	167	298	449	616	831	1074	1347	Ō
2.1.1 Tariff	Tsh./month/household	1100	1100	1100	1100	1100	1100	1100	O
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	O
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	60.0	60.0	0.09	60.0	0.09	60.0	0.09	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	587	648	O
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	Ō
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	O
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	0	Õ
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	0	Ō
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2089
3. Balance		-260	129	121	608-	-788	006-	81	5089

Table A-31 Financial Planning Table (Case B-3), (Risk 1 = Tariff Tsh. 900 and RCC Collection Rate 60%)

Year Unit	Unit	1999	2000	2000   2001   20	2002	2003	2004	2005	2006
1. Costs	million Tsh.	532	546	739	1860	2145	2567	1915	0
1.1 Investment Cost	million Tsh.	465	6	10	910	898	266	ō	O
1.1.1 Skip Truck	million Tsh.	0	0	0	472	472	524	0	0
1.1.2 Container	million Tsh.	0	0	0	402	402	447	0	0
1.1.3 Push Cart	million Tsh.	23	თ	10	36	24	26	o	0
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	ö	0	O
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	0
1.2.1 Labour (Primary)	million Tsh.	O	79	111	145	192	243	599	0
1.2.2 Repair (Primary)	million Tsh.	0	S	9	8	11	14	121	O
1.2.3 Labour (Secondary)	million Tsh.	0		14	19	56	32	40	ō
1.2.4 Fuel (Secondary)	million Tsh.	0	69	95	125	167	509	255	ō
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	0
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	32	0
1.3 Disposal Fee	million Tsh.	58	117	164	215	284	359	442	Ö
1.4 Indirect Cost	million Tsh.	6	70	95	124	163	204	250	O
2. Revenues	million Tsh.	242	620	279	938	1206	1465	1750	2089
2.1 RCC from Households	million Tsh.	136	244	367	504	680	879	1102	0
2.1.1 Tariff	Tsh./month/household	006	006	006	006	006	006	006	Ó
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	0
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	0.09	60.0	60.0	0.09	0.09	0.09	60.0	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	587	648	ō
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	0
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	ō
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	0	0
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	ō	0
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2089
3. Balance		-290	74	40	-925	-939	-1095	-164	2089

Table A-32 Financial Planning Table (Case B-3), (Risk 2	(Case B-3), (Risk 2 = Tariff	Tsh. 1100	and RCC Collection Rate 40%)	ection Rate	40%)				
Year	Unit	1999	2000	2001	2002	2003	2004	2002	2006
1. Costs	million Tsh.	532	546	739	1860	2145	2561	1915	0
1.1 Investment Cost	million Tsh.	465	6	10	910	898	266	0	0
1.1.1 Skip Truck	million Tsh.	0	0	0	472	472	524	0	0
1.1.2 Container	million Tsh.	0	0	0	402	402	447	0	Ō
1.1.3 Push Cart	million Tsh.	23	6	10	36	24	98	0	0
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	o	0	O
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	O
1.2.1 Labour (Primary)	million Tsh.	0	79	111	145	192	243	599	0
1.2.2 Repair (Primary)	million Tsh.	0	5	9	8	11	14	17	0
1.2.3 Labour (Secondary)	million Tsh.	0	11	14	19	56	32	40	0
1.2.4 Fuel (Secondary)	million Tsh.	0	69	92	125	167	509	255	0
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	0
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	35	32	32	0
1.3 Disposal Fee	million Tsh.	58	117	164	215	284	359	442	0
1.4 Indirect Cost	million Tsh.	6	20	95	124	163	204	250	0
2. Revenues	million Tsh.	216	575	711	845	1080	1303	1546	2089
2.1 RCC from Households	million Tsh.	111	199	299	411	554	716	898	0
2.1.1 Tariff	Tsh./month/household	1100	1100	1100	1100	1100	1100	1100	O
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	0
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	587	648	O
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	0
2.2.2 Amount of Waste Collected	d ton/day	120	129	135	142	153	163	172	O
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	ō	0	0
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	0	0
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	5089
3. Balance		-315	29	-28	-1015	-1065	-1258	-369	5089

	Year Unit 1999 2000 2001 20	1999	2000	2001	2002	2003	2004	2002	2006
1. Costs	million Tsh.	532	546	739	1860	2145	2561	1915	C
1.1 Investment Cost	million Tsh.	465	6	10	910	868	266	.   -	C
1.1.1 Skip Truck	million Tsh.	0	0	0	472	472	524	0	0
1.1.2 Container	million Tsh.	0	0	Ó	405	405	447	0	o
1.1.3 Push Cart	million Tsh.	23	6	10	36	24	26	0	C
11.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	0	0	C
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	C
1.2.1 Labour (Primary)	million Tsh.	0	79	111	145	192	243	299	C
1.2.2 Repair (Primary)	million Tsh.	0	5	ဖ	8		14	17	0
1.2.3 Labour (Secondary)	million Tsh.	0	11	4.	19	26	32	40	Ö
1.2.4 Fuel (Secondary)	million Tsh.	0	69	92	125	167	509	255	0
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	C
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	321	Ö
1.3 Disposal Fee	million Tsh.	58	117	164	215	284	359	442	Ċ
1.4 Indirect Cost	million Tsh.	6	70	95	124	163	204	250	O
2. Revenues	million Tsh.	196	539	656	770	979	1173	1383	2089
2.1 RCC from Households	million Tsh.	91	163	245	336	454	586	735	C
2.1.1 Tariff	Tsh./month/household	1006	006	900	006	006	006	006	C
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	C
2.1.3 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.1.4 RCC Collection Rate	%	40.0	40.0	40.0	40.0	40.0	40.0	40.0	0.0
2.2 RCC from Others	million Tsh.	105	376	412	434	525	587	648	Ô
2.2.1 Tariff	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	C
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	0
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.5	41.1	43.0	0.0
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	0	O
2.4 Subsidy from Leasing Fee	million Tsh,	0	0	0	0	ō	0	0	C
2.5 Scrap Value	million Tsh.	0	0	0	0	0	0	O	2089
3. Balance		-336	<i>L</i> -	-83	-1090	-1166	-1388	-532	2089

Project Year	· · · · · · · · · · · · · · · · · · ·	Case A-1, Base	Case)		FIRR =	-7.63%	
	Financial	and the transfer of the second section of the	<del>- Belgardinka arang arang arang</del>	CONTROL STREET BUTTON	The Remark 23 of Lawrence Vic	Net	Cumulative
	Year	Investment	0 & M	Cost	Benefit	Benefit	Net Benefit
1	1999	4,208	2,279	6,487	2,410	-4,077	-4,077
2	2000	968	2,671	3,640	3,021	-619	-4,696
3	2001	1,042	3,280	4,323	3,680	-642	-5,338
4	2002	1,340	3,951	5,291	4,519	-772	-6,110
5	2003	1,577	4,812	6,389	5,370	-1,018	-7,129
6	2004	1,676	5,792	7,468	6,400	-1,068	-8,196
7	2005	0	6,767	6,767	7,612	844	
8	2006	0	0	0	4,653	4,653	-2,700
able A	-35 FIRR (	Case A-2, Base	Case)		FIRR ==	5.56%	
Project	Financial					Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
1	1999	4,208	1,956	6,163	2,410	-3,753	-3,753
2	2000	968	2,261	3,230	3,021	-209	-3,962
3	2001	1,042	2,776	3,818	3,680	-138	-4,100
4	2002	1,340	3,344	4,683	4,519	-165	-4,264
5	2003	1,577	4,068	5,645	5,370	-275	-4,539
6	2004	1,676	4,894	6,570	6,400	-170	-4,710
7	2005	0	5,702	5,702	7,612	1,909	-2,800
8	2006	0	0	Ô	4,653	4,653	1,852
able A-	-36 FIRR (0	Case B-1, Base	Case)		FIRR =	-20.47%	
Project	Financial					Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
j	1999	1,922	123	2,045	272	-1,773	-1,773
2	2000	495	653	1,148	675	-473	-2,246
3	2001	690	890	1,580	860	-720	-2,965
4	2002	910	1,162	2,072	1,050	-1,021	-3,987
5	2003	898	1,526	2,424	1,357	-1,067	-5,054
6	2004	997	1,918	2,915	1,661	-1,254	-6,308
7	2005	0	2,352	2,352	1,995	-356	-6,665
8	2006	0	0	0	2,727	2,727	-3,937
able A-	37 FIRR (0	Case B-2, Base	Case)		FIRR =	-12.61%	TO CHARLES CONTRACTOR STATE OF THE PARTY OF
roject	Financial					Max Danasia	
	Year					: Net Benefit I	Cumulative
		i investment i	0 & M	Cost	Benefit	Net Benefit ⑤=④-③	Cumulative Net Benefit
Year		Investment 1 922	0&M	Cost 1.988	Benefit 272	<b>⑤=④-③</b>	Net Benefit
Year 1	1999	1,922	67	1,988	272	\$= <b>4</b> -3 -1,716	Net Benefit -1,716
Year 1 2	1999 2000	1,922 495	67 537	1,988 1,032	272 675	\$= <b>@</b> - <b>3</b> -1,716 -357	Net Benefit -1,716 -2,073
Year 1 2 3	1999 2000 2001	1,922 495 690	67 537 729	1,988 1,032 1,419	272 675 860	\$=@-3 -1,716 -357 -559	Net Benefit -1,716 -2,073 -2,632
Year 1 2 3 4	1999 2000 2001 2002	1,922 495 690 910	67 537 729 950	1,988 1,032 1,419 1,860	272 675 860 1,050	⑤=④-③ -1,716 -357 -559 -809	Net Benefit -1,716 -2,073 -2,632 -3,441
Year 1 2 3 4 5	1999 2000 2001 2002 2003	1,922 495 690 910 898	67 537 729 950 1,247	1,988 1,032 1,419 1,860 2,145	272 675 860 1,050 1,357	\$=4-3 -1,716 -357 -559 -809 -788	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229
Year 1 2 3 4 5 6	1999 2000 2001 2002 2003 2004	1,922 495 690 910 898 997	67 537 729 950 1,247 1,564	1,988 1,032 1,419 1,860 2,145 2,561	272 675 860 1,050 1,357 1,661	\$=@-@ -1,716 -357 -559 -809 -788 -900	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129
Year  1 2 3 4 5 6 7	1999 2000 2001 2002 2003 2004 2005	1,922 495 690 910 898	67 537 729 950 1,247	1,988 1,032 1,419 1,860 2,145	272 675 860 1,050 1,357 1,661 1,995	\$=@-@ -1,716 -357 -559 -809 -788 -900 81	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049
Year  1 2 3 4 5 6 7 8	1999 2000 2001 2002 2003 2004 2005 2006	1,922 495 690 910 898 997 0	67 537 729 950 1,247 1,564 1,915	1,988 1,032 1,419 1,860 2,145 2,561 1,915	272 675 860 1,050 1,357 1,661 1,995 2,727	\$=@-@-3 -1,716 -357 -559 -809 -788 -900 81 2,727	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049
Year  1 2 3 4 5 6 7 8 able A-	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (0	1,922 495 690 910 898 997	67 537 729 950 1,247 1,564 1,915	1,988 1,032 1,419 1,860 2,145 2,561 1,915	272 675 860 1,050 1,357 1,661 1,995	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63%	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322
Year  1 2 3 4 5 6 7 8 able A-	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C	1,922 495 690 910 898 997 0 0	67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915	272 675 860 1,050 1,357 1,661 1,995 2,727 FIRR =	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63% Net Benefit	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative
Year  1 2 3 4 5 6 7 8 able A-	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C	1,922 495 690 910 898 997 0	67 537 729 950 1,247 1,564 1,915	1,988 1,032 1,419 1,860 2,145 2,561 1,915	272 675 860 1,050 1,357 1,661 1,995 2,727	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63%	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative Net Benefit
Year  1 2 3 4 5 6 7 8 able A-Project Year 1	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C Financial Year 1999	1,922 495 690 910 898 997 0 0 Case B-3, Base	67 537 729 950 1,247 1,564 1,915 0 Case)	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0	272 675 860 1,050 1,357 1,661 1,995 2,727 FIRR ≈ Benefit 272	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63% Net Benefit \$=@-@	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative
Year  1 2 3 4 5 6 7 8 Table A-Project Year 1 2	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C Financial Year 1999 2000	1,922 495 690 910 898 997 0 0 Case B-3, Base	67 537 729 950 1,247 1,564 1,915 0 Case)	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546	272 675 860 1,050 1,357 1,661 1,995 2,727 FIRR = Benefit 272 675	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63% Net Benefit \$=@-@	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative Net Benefit -260 -131
Year  1 2 3 4 5 6 7 8 able A- roject Year 1 2 3	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C Financial Year 1999 2000 2001	1,922 495 690 910 898 997 0 0 Case B-3, Base Investment 465 9	67 537 729 950 1,247 1,564 1,915 0 Case) 0 Case)	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739	272 675 860 1,050 1,357 1,661 1,995 2,727 FIRR = Benefit 272 675 860	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63% Net Benefit \$\(\mathbb{G}\)=@-@ 129 121	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative Net Benefit -260 -131 -10
Year  1 2 3 4 5 6 7 8 able A- roject Year 1 2 3 4	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C Financial Year 1999 2000 2001 2002	1,922 495 690 910 898 997 0 0 Case B-3, Base Investment 465 9 10	67 537 729 950 1,247 1,564 1,915 0 Case) 0 & M 67 537 729 950	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739 1,860	272 675 860 1,050 1,357 1,661 1,995 2,727 FIRR = Benefit 272 675 860 1,050	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63% Net Benefit \$=@-@ -260 129 121 -809	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative Net Benefit -260 -131 -10 -819
Year  1 2 3 4 5 6 7 8 able A- roject Year 1 2 3 4 5	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C Financial Year 1999 2000 2001 2002 2003	1,922 495 690 910 898 997 0 0 Case B-3, Base Investment 465 9 10 910 898	67 537 729 950 1,247 1,564 1,915 0 Case) 0 & M 67 537 729 950 1,247	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739 1,860 2,145	272 675 860 1,050 1,357 1,661 1,995 2,727 FIRR = Benefit 272 675 860 1,050 1,357	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63% Net Benefit \$\$=@-@ 129 121 -809 -788	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative Net Benefit -260 -131 -10 -819 -1,607
Year  1 2 3 4 5 6 7 8 Table A-Project Year 1 2 3 4	1999 2000 2001 2002 2003 2004 2005 2006 38 FIRR (C Financial Year 1999 2000 2001 2002	1,922 495 690 910 898 997 0 0 Case B-3, Base Investment 465 9 10	67 537 729 950 1,247 1,564 1,915 0 Case) 0 & M 67 537 729 950	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739 1,860	272 675 860 1,050 1,357 1,661 1,995 2,727 FIRR = Benefit 272 675 860 1,050	\$=@-@ -1,716 -357 -559 -809 -788 -900 81 2,727 -4.63% Net Benefit \$=@-@ -260 129 121 -809	Net Benefit -1,716 -2,073 -2,632 -3,441 -4,229 -5,129 -5,049 -2,322  Cumulative Net Benefit -260 -131 -10 -819

ì

9

					1	***************************************	l
Table A-	39 FIRR (0	Case A-1, Risk	1)		FIRR =	-14.97%	
Project	Financial				**************************************	Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
1	1999	4,208	2,279	6,487	2,225	-4,262	-4,262
2	2000	968	2,671	3,640	2,784		-5,118
3	2001	1,042	3,280	4,323	3,382	-940	-6,058
4	2002	1,340	3,951	5,291	4,149	-1,142	-7,200
5	2003	1,577	4,812	6,389	4,915	-1,474	-8,674
6	2004	1,676	5,792	7,468	5,842	-1,626	-10,299
7	2005	0	6,767	6,767	6,930	162	-10,137
8	2006	0	0,707	0,707	4,653	4,653	-5,484
CAMBORTON, MIT	***************************************	A STREET, STRE			P. P. S.	THE PERSON NAMED IN COLUMN TWO	
PRODUCE THE PERSON	CONTRACTOR OF STREET	Case A-2, Risk	1)		FIRR =	-2.71%	Compalation
Project	Financial			_		Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
11	1999	4,208	1,956	6,163	2,225	-3,938	-3,938
2	2000	968	2,261	3,230	2,784	-446	-4,384
3	2001	1,042	2,776	3,818	3,382	-436	-4,820
4	2002	1,340	3,344	4,683	4,149	-534	-5,354
5	2003	1,577	4,068	5,645	4,915	-730	-6,084
6	2004	1,676	4,894	6,570	5,842	-728	-6,812
7	2005	0	5,702	5,702	6,930	1,227	-5,585
8	2006	0	0	0	4,653	4,653	-933
Table A	41 FIRR (	Case B-1, Risk	1)		FIRR =	-24.43%	
Project	Financial					Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
1	1999	1,922	123	2,045	242	-1,803	-1,803
2	2000	495	653	1,148	620	-527	-2,330
3	2001	690	890	1,580	779	-801	-3,132
4	2002	910	1,162	2,072	938	-1,133	-4,265
5	2003	898	1,526	2,424	1,206	-1,218	-5,483
6	2004	997	1,918	2,915	1,465	-1,450	-6,933
7	2005	0	2,352	2,352	1,750	-601	-7,534
8	2006	ŏ	0	2,002	2,727	2,727	-4,807
			-		THE PERSON NAMED IN COLUMN		
	No.	Case B-2, Risk	1)	<del></del>	FIRR =	-16.99%	
Project		·		_		Net Benefit	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	<b>⑤=④-③</b>	Net Benefit
11	1999	1,922	67	1,988	242	-1,747	-1,747
2	2000	495	537	1,032	620	-411	-2,158
3	2001	690	729	1,419	779	-640	-2,798
4	2002	910	950	1,860	938	-922	-3,720
5	2003	898	1,247	2,145	1,206	-939	-4,659
6	2004	997	1,564	2,561	1,465	-1,095	-5,754
7	2005	0	1,915	1,915	1,750	-164	-5,919
8	2006	0	0	0	2,727	2,727	-3,191
Table A	43 FIRR (	Case B-3, Risk	1)		FIRR =	-14.23%	
Project	Financial					Net Benefit	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	<b>⑤=④</b> - <b>③</b>	Net Benefit
1001	1999	465	67	532	242	-290	-290
2	2000	9	537	546	620	. 74	-216
3	2001	10	729	739	779	40	-176
4	2002	910	950	1,860	938	1	-1,098
5	2002	898	1,247	2,145	1,206		-2,037
6	2003	997	1,564	2,143	1,465	-1,095	-3,132
		0	1,564	1,915	1,750	L	-3,132
7	2005 2006	0	1,915	1,915	2,089		-3,290
		t UI	ı V	ı V	2,003	L 2,009	, -1,201

	44 FIRK (	Case A-1, Risk	2)	rr water Marie Williams	FIRR =	-19.71%	and the state of the same of t
Project	Financial					Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
)	1999	4,208	2,279	6,487	2,086	-4,401	-4,40
2	2000	968	2,671	3,640	2,606	-1,034	-5,434
3	2001	1,042	3,280	4,323	3,420	-903	-6,33
4	2002	1,340	3,951	5,291	3,872	-1,419	
5	2003	1,577	4,812	6,389	4,573	-1,815	-9,572
6	2004	1,676	5,792	7,468	5,423	-2,044	-11,616
7	2005	0	6,767	6,767	6,418	-349	-11,965
8	2006	Ö	0	0	4,653	4,653	-7,312
Table A	45 FIRR ((	Case A-2, Risk i	2)	<del></del>	FIRR =	-7.97%	
Project	Financial					Net	Cumulative
Year	Year	Investment	0 & M	Cost	Benefit	Benefit	Net Benefit
1	1999	4,208	1,956	6,163	2,086	-4,077	-4,077
2	2000	968	2,261	3,230	2,606	-624	-4,701
3	2001	1,042	2,776	3,818	3,420	-398	-5,099
4	2002	1,340	3,344	4,683	3,872	-811	-5,911
<del></del> 5	2003	1,577	4,068	5,645	4,573	-1,071	-6,982
6	2004	1,676	4,894	6,570	5,423	-1,147	-8,129
7	2005	0	5,702	5,702	6,418	716	-7,413
- 8	2006	ŏ	0	0,,02	4,653	4,653	-2,761
	The second secon	Case B-1, Risk 3	()	-	FIRR =	-27.55%	CONTRACTOR STREET
Project	Financial					Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
1 6 31	1999	1,922	123	2,045	216	-1,828	-1,828
2	2000	495	653	1,148	575	-573	-2,401
3	2001	690	890	1,580	711	-869	-3,270
<del>-</del> 4	2001	910	1,162	2,072	845	-1,227	-3,270 -4,497
5	2002	898	1,526	2,424	1,080	-1,344	-5,841
· 6	2003	997	1,918	2,915	1,303	-1,612	-7,453
$-\frac{6}{7}$	2004	0	2,352	2,352	1,546	-1,612	-8,259
8	2006	0	2,332	2,332	2,727	2,727	-5,532
	2000		VI	V.	ر ۲۰۱۲ -		
	43 FIRE //					<del>1987) - 1987 - 1988 - 1988 - 1988 - 198</del>	0,000
		Case B-2, Risk 2			FIRR =	-20.48%	
Project	Financial		:			-20.48% Net Benefit	Cumulative
	Financial Year	Investment	0&M	Cost	Benefit	-20.48% Net Benefit ⑤=④-③	Cumulative Net Benefit
Project Year 1	Financial Year 1999	Investment 1,922	O & M 67	1,988	Benefit 216	-20.48% Net Benefit ⑤=④-③ -1,772	Cumulative Net Benefit -1,772
Project Year 1 2	Financial Year 1999 2000	Investment 1,922 495	0 & M 67 537	1,988 1,032	Benefit 216 575	-20.48% Net Benefit ⑤=④-③ -1,772 -457	Cumulative Net Benefit -1,772
Project Year 1 2 3	Financial Year 1999 2000 2001	Investment 1,922 495 690	0 & M 67 537 729	1,988 1,032 1,419	Benefit 216 575 711	-20.48% Net Benefit (\$=@-(3) -1,772 -457 -708	Cumulative Net Benefit -1,772 -2,228 -2,937
Project Year 1 2 3 4	Financial Year 1999 2000 2001 2002	Investment 1,922 495 690 910	0 & M 67 537 729 950	1,988 1,032 1,419 1,860	Benefit 216 575 711 845	-20.48% Net Benefit ⑤=④-③ -1,772 -457 -708 -1,015	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952
Project Year 1 2 3	Financial Year 1999 2000 2001 2002 2003	Investment 1,922 495 690 910 898	0 & M 67 537 729 950 1,247	1,988 1,032 1,419 1,860 2,145	8enefit 216 575 711 845 1,080	-20.48%  Net Benefit (\$)=@-(3) -1,772 -457 -708 -1,015 -1,065	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017
Project Year 1 2 3 4	Financial Year 1999 2000 2001 2002 2003 2004	Investment 1,922 495 690 910	0 & M 67 537 729 950	1,988 1,032 1,419 1,860	Benefit 216 575 711 845	-20.48% Net Benefit ⑤=④-③ -1,772 -457 -708 -1,015	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017
Project Year 1 2 3 4 5 6 7	Financial Year 1999 2000 2001 2002 2003 2004 2005	Investment 1,922 495 690 910 898 997 0	0 & M 67 537 729 950 1,247	1,988 1,032 1,419 1,860 2,145	Benefit 216 575 711 845 1,080 1,303 1,546	-20.48%  Net Benefit (\$=@-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643
Project Year 1 2 3 4 5	Financial Year 1999 2000 2001 2002 2003 2004	Investment 1,922 495 690 910 898 997	0 & M 67 537 729 950 1,247 1,564	1,988 1,032 1,419 1,860 2,145 2,561	Benefit 216 575 711 845 1,080 1,303	-20.48%  Net Benefit ⑤=④-③  -1,772  -457  -708  -1,015  -1,065  -1,258	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643
Project Year  1 2 3 4 5 6 7	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006	Investment 1,922 495 690 910 898 997 0	0 & M 67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915	Benefit 216 575 711 845 1,080 1,303 1,546	-20.48%  Net Benefit (\$=@-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643
Project Year  1 2 3 4 5 6 7	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006	Investment 1,922 495 690 910 898 997 0	0 & M 67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915	8enefit 216 575 711 845 1,080 1,303 1,546 2,727	-20.48%  Net Benefit (\$)=@-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369 2,727	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643
Project Year 1 2 3 4 5 6 7 8 Table A-	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2	O&M 67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0	8enefit 216 575 711 845 1,080 1,303 1,546 2,727 FIRR =	-20.48%  Net Benefit (\$)=(4)-(3) -1,772 -457 -708 -1,015 -1,055 -1,258 -369 2,727 -20.56%  Net Benefit (\$)=(4)-(3)	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916 Cumulative Net Benefit
Project Year  1 2 3 4 5 6 7 8 Table A-Project Year 1	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2	0 & M 67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0	Benefit 216 575 711 845 1,080 1,303 1,546 2,727 FIRR = Benefit 216	-20.48%  Net Benefit (\$)=(4)-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369 2,727 -20.56%  Net Benefit (\$)=(4)-(3) -315	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916 Cumulative Net Benefit -315
Project Year  1 2 3 4 5 6 7 8 Fable A- Project Year 1 2	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999 2000	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2 Investment 465	0 & M 67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546	8enefit 216 575 711 845 1,080 1,303 1,546 2,727 FIRR =	-20.48%  Net Benefit (\$)=(4)-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369 2,727 -20.56%  Net Benefit (\$)=(4)-(3) -315 -29	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916  Cumulative Net Benefit -315 -286
Project Year  1 2 3 4 5 6 7 8 Table A-Project Year 1	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2 Investment 465 9 10	0 & M 67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739	Benefit 216 575 711 845 1,080 1,303 1,546 2,727 FIRR = Benefit 216	-20.48%  Net Benefit ⑤=④-③  -1,772  -457  -708  -1,015  -1,065  -1,258  -369  2,727  -20.56%  Net Benefit ⑤=④-③  -315  -29  -28	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916  Cumulative Net Benefit -315 -286 -315
Project Year  1 2 3 4 5 6 7 8 Fable A- Project Year 1 2	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999 2000	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2 Investment 465	0 & M 67 537 729 950 1,247 1,564 1,915 0 ) 0 0 0 0 0 0 0 729 950	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546	Benefit 216 575 711 845 1,080 1,303 1,546 2,727 FIRR = Benefit 216 575	-20.48%  Net Benefit (\$)=(4)-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369 2,727 -20.56%  Net Benefit (\$)=(4)-(3) -315 -29	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916  Cumulative Net Benefit -315 -286 -315
Project Year  1 2 3 4 5 6 7 8  Table A- Project Year 1 2 3	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999 2000 2001	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2 Investment 465 9 10	0 & M 67 537 729 950 1,247 1,564 1,915 0	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739	Benefit 216 575 711 845 1,080 1,303 1,546 2,727 FIRR =  Benefit 216 575 711	-20.48%  Net Benefit ⑤=④-③  -1,772  -457  -708  -1,015  -1,065  -1,258  -369  2,727  -20.56%  Net Benefit ⑤=④-③  -315  -29  -28	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916 Cumulative
Project Year  1 2 3 4 5 6 7 8  Table A- Project Year 1 2 3 4	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999 2000 2001 2002	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2 Investment 465 9 10 910	0 & M 67 537 729 950 1,247 1,564 1,915 0 ) 0 0 0 0 0 0 0 729 950	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739 1,860	Benefit 216 575 711 845 1,080 1,303 1,546 2,727 FIRR =  Benefit 216 575 711 845	-20.48%  Net Benefit \$=@-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369 2,727 -20.56%  Net Benefit \$(\$=@-(3) -315 -29 -28 -1,015	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916  Cumulative Net Benefit -315 -286 -315 -1,329
Project Year  1 2 3 4 5 6 7 8  Table A- Project Year 1 2 3 4 5	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999 2000 2001 2002 2003	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2 Investment 465 9 10 910 898	O&M 67 537 729 950 1,247 1,564 1,915 0 ) O&M 67 537 729 950 1,247	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0 Cost 532 546 739 1,860 2,145	Benefit  216  575  711  845  1,080  1,303  1,546  2,727  FIRR =  Benefit  216  575  711  845  1,080	-20.48%  Net Benefit (\$)=(4)-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369 2,727 -20.56%  Net Benefit (\$)=(4)-(3) -315 -29 -28 -1,015 -1,065	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916  Cumulative Net Benefit -315 -286 -315 -1,329 -2,394
Project Year  1 2 3 4 5 6 7 8 Fable A- Project Year 1 2 3 4 5 6	Financial Year 1999 2000 2001 2002 2003 2004 2005 2006 48 FIRR (C Financial Year 1999 2000 2001 2002 2003 2004	Investment 1,922 495 690 910 898 997 0 0 Case B-3, Risk 2 Investment 465 9 10 910 898 997	O&M 67 537 729 950 1,247 1,564 1,915 0 ) O&M 67 537 729 950 1,247 1,564	1,988 1,032 1,419 1,860 2,145 2,561 1,915 0  Cost 532 546 739 1,860 2,145 2,561	Benefit  216 575 711 845 1,080 1,303 1,546 2,727 FIRR =  Benefit 216 575 711 845 1,080 1,303	-20.48%  Net Benefit (\$)=(4)-(3) -1,772 -457 -708 -1,015 -1,065 -1,258 -369 2,727 -20.56%  Net Benefit (\$)=(4)-(3) -315 -29 -28 -1,015 -1,065 -1,258	Cumulative Net Benefit -1,772 -2,228 -2,937 -3,952 -5,017 -6,275 -6,643 -3,916  Cumulative Net Benefit -315 -286 -315 -1,329 -2,394 -3,652

						the state of the s	ag a
Table A	49 FIRR (	Case A-1, Risk	3)		FIRR =	-24.88%	
Project	Financial					Net	Cumulative
Year	Year	Investment	0 & M	Cost	Benefit	Benefit	Net Benefit
1	1999	4,208	2,279	6,487	1,948	-4,539	-4,539
2	2000	968	2,671	3,640	2,428	-1,212	-5,751
3	2001	1,042	3,280	4,323	2,936	-1,387	-7,138
4	2002	1,340	3,951	5,291	3,595	-1,696	-8,834
5	2003	1,577	4,812	6,389	4,232	-2,157	-10,991
6	2004	1,676	5,792	7,468	5,005	-2,463	-13,454
7	2005	0	6,767	6,767	5,907	-861	-14,314
8	2006	0	0	0	4,653	4,653	-9,662
Table A-	50 FIRR (	Case A-2, Risk :	3)		FIRR ≈	-14.12%	
Project	Financial	A STATE OF THE PROPERTY AND ADDRESS OF THE PARTY AND ADDRESS OF THE PAR				Net	Cumulative
Year	Year	Investment	O & M	Cost	Benefit	Benefit	Net Benefit
1	1999	4,208	1,956	6,163	1,948	-4,216	THE RESERVE ASSESSMENT OF THE PARTY OF THE P
2	2000	968	2,261	3,230	2,428		<del></del>
3	2001	1,042	2,776	3,818	2,936	-883	<del> </del>
4	2002	1,340	3,344	4,683	3,595	-1,089	+i
5	2003	1,577	4,068	5,645	4,232	-1,413	<del></del>
6	2004	1,676	4,894	6,570	5,005	-1,565	<del></del>
7	2005	0	5,702	5,702	5,907	204	-9,763
8	2006	ol o	0	0,.02	4,653	4,653	-5,110
Table A	C1 CIDD //	Case B-1, Risk 3	· · · · · · · · · · · · · · · · · · ·		***	Tell-Lille & Walleton	
THE PARKET	THE RESIDENCE OF THE PERSON OF	case b-1, Kisk 3	)		FIRR =	-29.92%	
Project	Financial	Investment	0011		0 .64	Net	Cumulative
Year	Year 1999		0&M	Cost	Benefit 300	Benefit	Net Benefit
1 2		1,922	123	2,045	196	-1,848	-1,848
3	2000	495	653	1,148	539	-609	-2,457
	2001	690	890	1,580	656	-924	-3,381
<u>4</u> 5	2002 2003	910	1,162	2,072	770	-1,301	-4,682
6	2003	898	1,526	2,424	979	-1,445	-6,127
		997	1,918	2,915	1,173	-1,742	-7,870
7 8	2005 2006	0	2,352	2,352 0	1,383 2,727	-969	-8,839
	**************************************			VI		2,727	-6,111
		Case B-2, Risk 3	)		FIRR =	-23.15%	
	Financial	- <u> </u>	· · · · · · · · · · · · · · · · · · ·			Net Benefit	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	<b>⑤=④-③</b>	Net Benefit
!	1999	1,922	67	1,988	196	-1,792	-1,792
2	2000	495	537	1,032	539	-493	-2,285
3	2001	690	729	1,419	656	-763	-3,047
4	2002	910	950	1,860	770	-1,090	-4,137
5	2003	898	1,247	2,145	979	-1,166	-5,303
6	2004	997	1,564	2,561	1,173	-1,388	-6,691
7	2005	0	1,915	1,915	1,383	-532	-7,223
8	2006	0	0	0	2,727	2,727	-4,496
Table A-	53 FIRR (C	ase B-3, Risk 3	)		FIRR =	-24.90%	-
Project	Financia!				Color (1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	Net Benefit	Cumulative
Year	Year	Investment	0 & M	Cost	Benefit	<b>⑤≃④</b> -③	Net Benefit
1	1999	465	67	532	196	-336	-336
2	2000	9	537	546	539	-7	-343
3	2001	10	729	739	656	-83	-425
4	2002	910	950	1,860	770	-1,090	-1,515
5	2003	898	1,247	2,145	979	-1,166	-2,681
6	2004	997	1,564	2,561	1,173	-1,388	-4,069
7							
	Z005 I	(7)	1.9151	1.915	1 3831	-5321	.4 601
8	2005 2006	0	1,915	1,915	1,383 2,089	-532 2,089	-4,601 -2,512

Figure A-7 Transition of Net Cumulative Benefit (Case A-1)

()

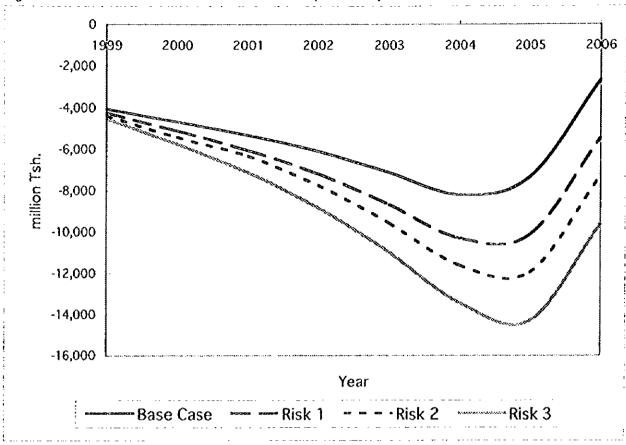


Table A-8 Transition of Net Comulative Benefit (Case A-2) 2,000 0 2004 2005 2001 2002 2003 2000 -2,000 million Tsh. -4,000 -6,000 -8,000 -10,000 -12,000 Year

Base Case

Table A-9 Transition of Net Cumulative Benefit (Case 8-1)

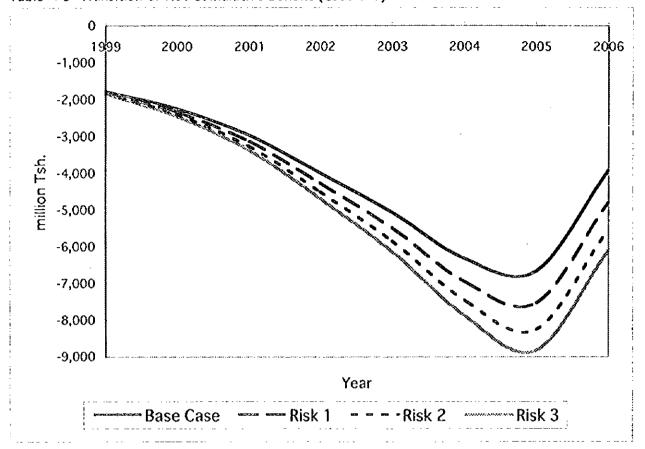


Table A-10 Transition of Net Cumulative Benefit (Case B-2)

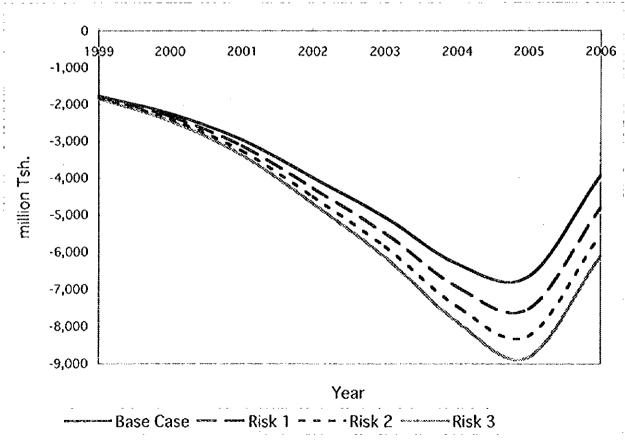
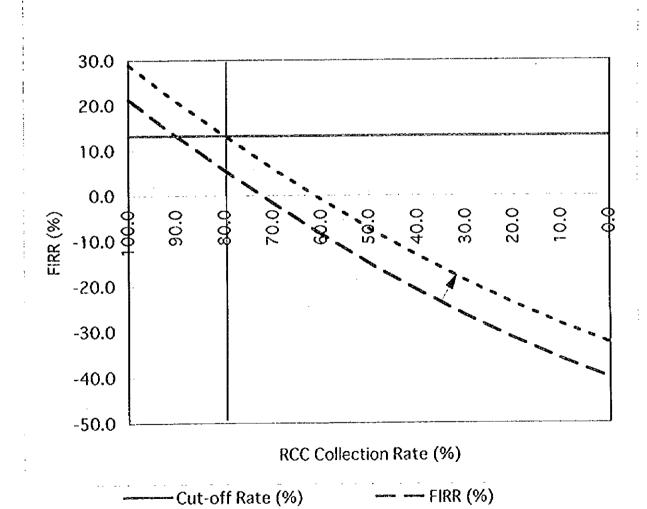


Table A-54 Break-even Point Analysis for Area A

RCC Collection (%)	Cut-off Rate (%)	FIRR (%)	Subsidized FIRR (%)
100.0	13.2	21.28	28.92
90.0	13.2	13.22	20.86
80.0	13.2	5.56	13.20
70.0	13.2	-1.71	5.93
60.0	13.2	-8.57	-0.93
50.0	13.2	-15.01	-7.37
40.0	13.2	-21.00	-13.36
30.0	13.2	-26.51	-18.87
20.0	13.2	-31.54	-23.90
10.0	13.2	-36.10	-28.46
0.0	13.2	-40.22	-32.58

Figure A-11 Break-even Point Analysis for Area A

9

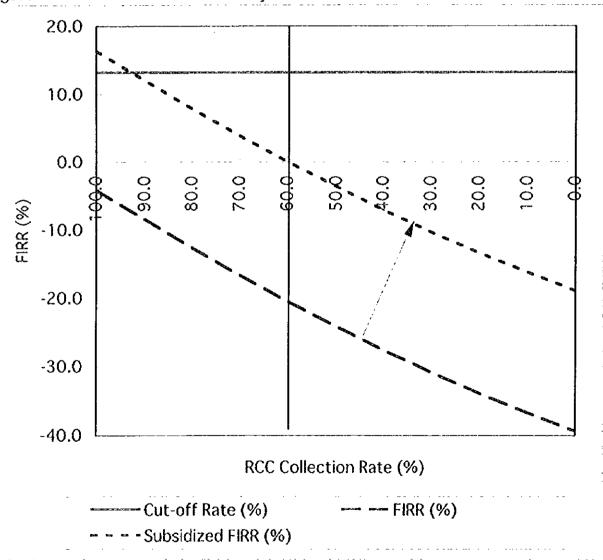


- Subsidized FIRR (%)

Table A-55 Break-even Point Analysis for Area B

RCC Collection (%)	Cut-off Rate (%)	FIRR (%)	Subsidized FIRR (%)
100.0	13.2	-4.17	16.30
90.0	13.2	-8.48	11.99
80.0	13.2	-12.64	7.83
70.0	13.2	-16.65	3.82
60.0	13.2	-20.47	0.00
50.0	13.2	-24.11	-3.64
40.0	13.2	-27.55	-7.08
30.0	13.2	-30.79	-10.32
20.0	13.2	-33.83	-13.36
10.0	13.2	-36.68	-16.21
0.0	13.2	-39.35	-18.88

Figure A-12 Break-even Point Analysis for Area B



	Year	Unit		2000	2001	1999 2000 2001 2002 2003 20	2003	2004	2005	2006
1. Costs		million Tsh.	6163	3230	3818	4683	5645	6570	5702	0
1.1 inve	1.1 Investment Cost	million Tsh.	4208	896	1042	1340	1577	1676	0	0
	1.1.1 Tipper Truck	million Tsh.	4208	896	1042	1042	1527	1676	0	0
1.1.2	1.1.2 Compactor Truck	million Tsh.	0	0	0	297	20	0	0	0
1.2 Oper	.2 Operation and Maintenance	million Tsh.	1185	1502	1849	2224	2702	3259	3863	0
1.2.1	1.2.1 Labour	million Tsh.	278	352	434	521	621	751	891	0
1.2.2 Fuel	Fuei	million Tsh.	244	310	382	459	552	299	290	0
1.2.3	1.2.3 Repair	million Tsh.	663	840	1033	1244	1529	1841	2182	0
1.3 Disp	.3 Disposal Fee	million Tsh.	326	414	509	613	752	906	1074	0
1.4 Indirect Cost	ect Cost	million Tsh.	151	192	236	284	345	417	494	0
1.5 Tax	-	million Tsh.	293	154	182	223	569	313	272	0
2. Revenues	Se	million Tsh.	2410	3140	3829	4888	5825	8369	8670	4653
2.1 RCC	2.1 RCC from Households	million Tsh.	1295	1778	2235	2957	3643	4463	5832	0
2.1.1 Tariff	Tariff	Tsh./month/household	1400	1500	7500	1,600	1,000	1600	1710	0
2.1.2	2.1.2 Number of Households	numbers	290208	313459	340336	371596	408173	451220	501697	0
2.1.3	2.1.3 Waste Collection Rate	%	33.2	39.4	45.6	51.8	58.1	64.4	70.8	0.0
2.1.4	2.1.4 RCC Collection Rate	%	80.0	80.0	80.0	80.0	80.0	80.0	30.0	0.0
2.2 RCC	2 RCC from Others	million Tsh.	1115	1361	1595	1932	2183	2494	2838	0
2.2.1 Tariff	Tariff	Tsh./ton	36000	36000	36000	36000	36000	36000	36000	0
2.2.2	2.2.2 Amount of Waste Collected	ton/day	312	343	370	420	443	483	528	0
2.2.3	2.2.3 Waste Collection Rate	%	27.2	30.2	32.8	35.0	37.5	39.3	40.9	0.0
2.2.4	2.2.4 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Scrap Value	p Value	million Tsh.	0	0	0	0	0	0	0	4653
3. Balance			-3753	06-	1.1	202	181	387	2968	4653

()

\$ 1 \$23

	Unit	1999	2000	2001	2002	Year Unit 1999 2000 2001 2002 2003 2	2004	2005	2006
Costs	million Tsh.	2045	1148	1580	2072	2424	2915	2352	C
1.1 Investment Cost	million Tsh.	1922	495	069	910	868	266	C	C
1.1.1 Skip Truck	million Tsh.	786	292	367	472	472	524	C	
1.1.2 Container	million Tsh.	671	224	313	402	402	447	C	
1.1.3 Push Cart	million Tsh.	23	6	10	36	24	26	C	P
1.1.4 Maintenance Shop	million Tsh.	442	0	0	0	0	c	) C	
1.2 Operation and Maintenance	million Tsh.	0	350	470	611	800	1001	1223	C
1.2.1 Labour (Primary)	million Tsh.	0	79	111	145	192	243	299	0
1.2.2 Repair (Primary)	million Tsh.	0	5	9	83	-	14	17	C
1.2.3 Labour (Secondary)	million Tsh.	0	-	14	0.	92	32	40	o C
1.2.4 Fuel (Secondary)	million Tsh.	0	69	92	125	167	209	255	C
1.2.5 Repair (Secondary)	million Tsh.	0	154	215	282	372	471	580	C
1.2.6 Maintenance Shop	million Tsh.	0	32	32	32	32	32	2000	C
.3 Disposal Fee	million Tsh.	107	218	304	399	527	667	000	) (
.4 Indirect Cost	million Tsh.	16	85	116	152	199	250	307	
Revenues	million Tsh.	408	919	1228	1555	2037	2539	3122	2727
2.1 RCC from Households	million Tsh.	303	545	816	1123	1512	1952	2474	0
C.I.I larit	Tsh./month/household	2000	2000	2000	2000	2000	2000	2020	O
2.1.2 Number of Households	numbers	277153	294312	314826	336878	360769	386270	414931	O
2.1.5 Waste Collection Rate	%	7.6	12.8	18.0	23.1	29.1	35.1	41.0	0.0
2.3.50 f. Collection Rate	%	0.09	0.09	60.0	60.0	60.0	60.0	60.0	0.0
•	million Tsh.	105	376	412	434	525	282	648	0
2.2.2.4 Jarit	Tsh./ton	24000	24000	24000	24000	24000	24000	24000	O
2.2.2 Amount of Waste Collected	ton/day	120	129	135	142	153	163	172	O
2.2.3 Waste Collection Rate	%	10.0	33.3	34.8	34.9	39.2	41.1	43.0	C
2.2.2 RCC Collection Rate	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0
2.3 Subsidy from Disposal Fee	million Tsh.	0	0	0	0	0	0	0	C
2.4 Subsidy from Leasing Fee	million Tsh.	0	0	0	0	0	0	0	C
Z.5 Scrap Value	million Tsh.	0	0	0	0	0	0	0	2727
3. Balance		-1636	-229	-352	517	200	-		

•						£100	10.000
Table A-	·58 Cash F	low for Grant-Aid	d Subsidized C	ase (Area A)	guerra i mali milioni moltini di sentino di	FIRR =	13.20%
Project	Financial				!	Net Benefit	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	<b>⑤=④-③</b>	Net Benefit
		Cost ①	Cost@	<b>3</b> = <b>1</b> + <b>2</b>	4		
11	1999	4,208	1,956	6,163	2,410	-3,753	-3,753
2	2000	968	2,261	3,230	3,140	-90	-3,844
3	2001	1,042	2,776	3,818	3,829	11	-3,832
4	2002	1,340	3,344	4,683	4,888	205	-3,627
5	2003	1,577	4,068	5,645	5,825	181	-3,447
6	2004	1,676	4,894	6,570	6,958	387	-3,059
7	2005	0	5,702	5,702	8,670	2,968	-91
8	2006	0	0	0	4,653	4,653	4,561
T	otal	10,811	25,001	35,812	40,373	4,561	4,561

Table A-	59 Cash F	low for Grant-Aid	d Subsidized C	ase (Area B)		FIRR =	0.00%
Project	Financial					Net Benefit	Cumulative
Year	Year	Investment	0 & M	Cost	Benefit	<b>⑤=4</b> - <b>3</b>	Net Benefit
		Cost ①	Cost@	<b>③=①+②</b>	4		
1	1999	1,922	123	2,045	408	-1,636	-1,636
2	2000	495	653	1,148	919	-229	-1,865
3	2001	690	890	1,580	1,228	-352	-2,218
4	2002	910	1,162	2,072	1,555	-517	-2,734
5	2003	898	1,526	2,424	2,037	-387	-3,121
6	2004	997	1,918	2,915	2,539	-376	-3,497
7	2005	0	2,352	2,352	3,122	770	-2,727
8	2006	O	0	0	2,727	2,727	0
To	otal	5,911	8,624	14,535	14,535	0	0

Table A-60 Estimation of Standard Conversion Factor

(Unit: USD Million)

ltem	1991	1992	1993	1994	1995	Average
1. Total imports	1216.9	1476.7	1465.4	1504.9	1739.4	7403.3
2. Total Exports	335.3	495.5	439.9	519.4	682.9	2473
3. Customs Duty	134.7	165.1	94.4	119.5	163.5	9876.3
4. Total Export Tax	0	0	0	0	0	0
5. Total Export Subsidy	0	0	0	0	0	0
6. 1+2	1552.2	1972.2	1905.3	2024.3	2422.3	9876.3
7. 1+2+3-4+5	1686.9	2137.3	1999.7	2143.8	2585.8	10553.5
8. SCF = 6/7	0.9201	0.9228	0.9528	0.9443	0.9368	0.9358

Source: Economic Bulletin for the Quarter Ended 31st December, 1995,

Vol. XXIV No. 4, The Bank of Tanzania, 1996 Note: SCF means Standard Conversion Factor

Figure A-13 Transition of Estimated Standard Conversion Factor

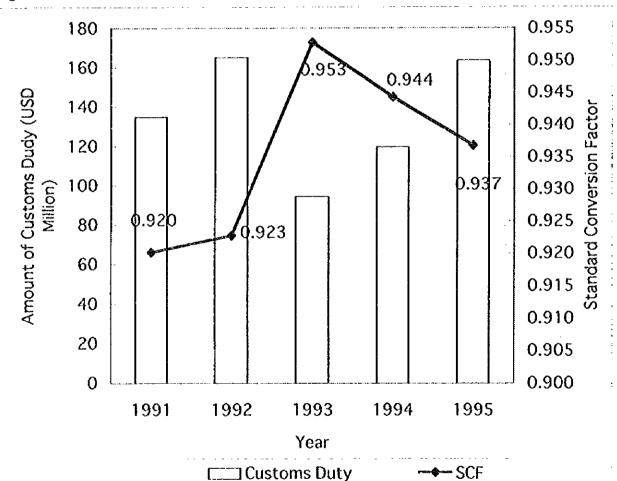


Table A-61 Estimation of Consumption Conversion Factor

(Unit: USD Million)

Item	1991	1992	1993	1994	1995	Average
1. Total Imports of Consumption Good	535.4	679.3	600.8	586.9	817.5	3220.0
2. Total Exports of Consumption Good	251.5	361.7	316.7	405.1	491.7	1826.7
3. Customs Duty	74.1	104.0	73.6	80.1	106.3	5046.7
4. Total Export Tax	0	0	0	0	0	0
5. Total Export Subsidy	0	0	0	0	0	0
6. 1+2	786.91	1041	917.54	992.04	1309.2	5046.7
7. 1+2+3-4+5	861	1145	991.17	1072.1	1415.5	5484.8
8. CCF = 6/7	0.9140	0.9092	0.9257	0.9253	0.9249	0.9201

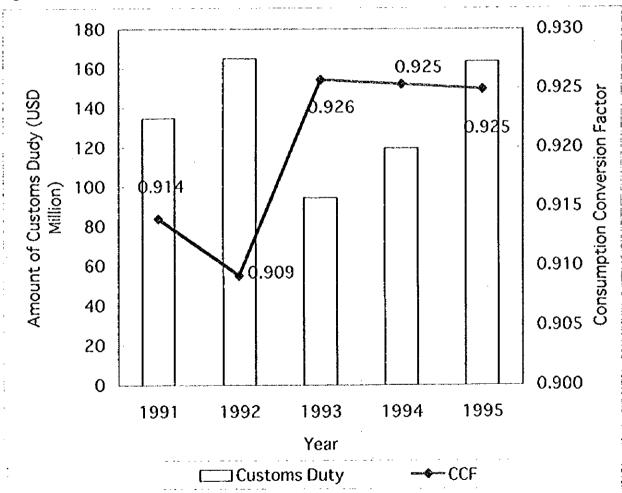
Source: Economic Bulletin for the Quarter Ended 31st December, 1995,

Vol. XXIV No. 4, The Bank of Tanzania, 1996

)

Note: CCF means Consumption Conversion Factor

Figure A-14 Transition of Estimated Consumption Conversion Factor



_	
4	
Ø	
7	
3	,
Sost	
ပ	
9	
č	
enance	
Ę	
<u>ā</u>	
2 .×	
ration &	
.≅	
ğ	
a	
Ō	
and	
S S	
2	
Ě	
SS	
چّ	
=	
9	
5	
Ş	
္က	
sion Factors for	
. <u>ō</u>	
ers	
Ž	
Ö	
8	
Ł	
ø	i

1 Traded Good		Traded Good	Non-traded	Skilled	Unskilled	Transferred	2	No.
Cost Items	Share(%)	& Services	Good & Service	Labour	Labour	Values	Conversion Factor for	1 X 22
		1.000	0.936	0.920	0.611	0	Each Cost Item	A.J. actor-d
Investment Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	טיני.	0.873
(1) Buildozer for Disposal	6.3	75.0	8.0	5.0	5.0	10.0	100.0	
		0.750	0.047	0.046	0.031	0.000	0.873	0.055
(2) Tipper for Disposal	4.7	75.0	5.0	5.0	5.0	10.0	100.0	
	٦.٠	0.750	0.047	0.046	0.031	0.000	0.873	0.041
(3) Excavator for Disposal	6.0	75.0	5.0	5.0	5.0	10.0	100.0	
	חיי	0.750	0.047	0.046	0.031	0.000	0.873	0.008
(4) Pick-up for Disposal	0.5	75.0	2.0	5.0	5.0	10.0	100.0	
	ח.ד.	0.750	0.047	0.046	0.031	0.000	0.873	0.002
(5) Tipper for Collection	85.5	75.0	5.0	5.0	5.0	10.0	100.0	
	n.r.	0.750	0.047	0.046	0.031	0.000	0.873	0.747
(6) Skip Truck for Collection	0.0	75.0	5.0	5.0	5.0	10.0	100.0	
	r.	0.750	0.047	0.046	0.031	0.000	0.873	0.000
(7) Compactor Truck for Collection	2.4	75.0	5.0	5.0	5.0	10.0	100.0	
-	n.r.	0.750	0.047	0.046	0.031	0.000	0.873	0.021
(8) Container for Collection	0.0	75.0	5.0	5.0	5.0	10.0	100.0	(menoral)
	n.r.	0.750	0.047	0.046	0.031	0.000	0.873	0.000
Operation & Maintenance Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	7.7.	0.675
(1) Labour	67.3	0.0	0.0	20.0	70.0	10.0	100.0	
-	n.r.	0.000	0.000	0.184	0.428	0.000	0.612	0.412
(2) Fuel	5.5	80.0	5.0	0.0	5.0	10.0	100.0	
	n.r.	0.800	0.047	0.000	0.031	0.000	0.877	0.048
(3) Repair	15.3	80.0	5.0	0.0	5.0	10.0	100.0	
	c.	0.800	0.047	0.000	0.031	0.000	0.877	0.134
(4) Indirect Expenses	11.9	5.0	30.0	5.0	50.0	10.0	100.0	
	n.r.	0.050	0.281	0.046	0.306	0.000	0.682	0.081

Table A-63 Conversion Factors for Investment and Operation & Maintenance Cost (Area B)	s for Inve	stment and	Operation &	Maintenand	e Cost (Are	3a B)		
	-	Traded Good	Non-traded	Skilled	Unskilled	Transferred	2	
Cost Items	Share(%)	& Services	Good & Service	Labour	Labour	Values	Conversion Factor for	1 X 2
		1.000	0.936	0.920	0.611	0	Each Cost Item	
Investment Cost	100.0	n.r.	n.r.	n.r.	n.r.	นะ	n.r.	0.873
(1) Bulldozer for Disposal	6.3	75.0	5.0	5.0	5.0	10.0	100.0	
	n.r.	0.750	0.047	0.046	0.031	0.000	0.873	0.055
(2) Tipper for Disposal	4.7	75.0	5.0	5.0	5.0	10.0	100.0	
	n.r.	0.750	0.047	0.046	0.031	0.000	0.873	0.041
(3) Excavator for Disposal	6.0	75.0	5.0	5.0	5.0	10.0	100.0	
	7.7	0.750	0.047	0.046	0.031	0.000	0.873	0.008
(4) Pick-up for Disposal	0.2	75.0	5.0	5.0	5.0	10.0	100.0	
	n.r.	0.750	0.047	0.046	0.031	000'0	0.873	0.002
(5) Tipper for Collection	0.0	75.0	5.0	5.0	5.0	10.0	100.0	
-	r.	0.750	0.047	0.046	0.031	0.000	0.873	0.000
(6) Skip Truck for Collection	53.3	75.0	5.0	5.0	5.0	0.0	100.0	
	n.r.	0.750	0.047	0.046	0.031	000.0	0.873	0.465
(7) Compactor Truck for Collection	0.0	75.0	5.0	5.0	5.0	10.0	100.0	
	n.r.	0.750	0.047	0.046	0.031	0.000	0.873	0.000
(8) Container for Collection	34.6	75.0	5.0	5.0	5.0	10.0	100.0	
	n.r.	0.750	0.047	0.046	0.031	0.000	0.873	0.302
Operation & Maintenance Cost	100.0	n.r.	n.r.	n.r.	n.r.	n.r.	ນ.ຕ.	0.690
(1) Labour	65.3	0.0	0.0	20.0	70.0	10.0	100.0	
	n.r.	0.000	0.000	0.184	0.428	000.0	0.612	0.399
(2) Fuel	7.5	80.0	5.0	0.0	5.0	10.0	100.0	
	r.	0.800	0.047	0.000	0.031	0.000	0.877	0.066
(3) Repair	20.3	80.0	5.0	0.0	5.0	10.0	100.0	
		0.800	0.047	0.000	0.031	0.000	0.877	0.178
(4) Indirect Expenses	6.9	5.0	30.0	5.0	50.0	0.01	100.0	
	n.r.	0.050	0.281	0.046	0.306	0.000	0.682	0.047

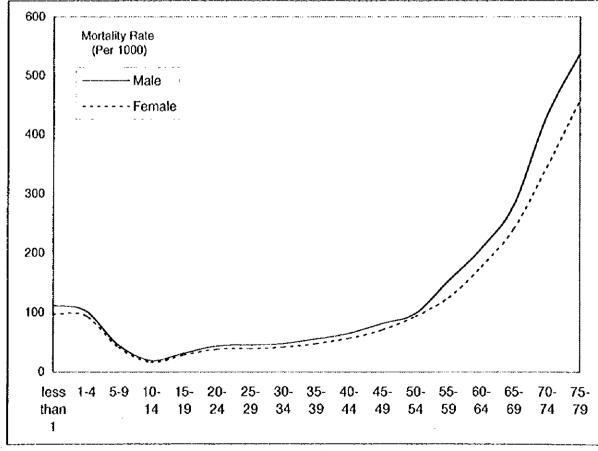
Table A	·64 EIRR (	Case A-1)			EIRR =	18.91%	]
Project	Financial	Lasc A-1)	THE RESERVE OF THE PARTY OF THE		CIVIX -	Net	Cumulative
Year	Year	Investment	084	Cont	Donofit		1 8
1 car	1999	CONTRACTOR OF THE PARTY OF THE	0&M	Cost	Benefit	Benefit	Net Benefit
2	2000	3,673 845	1,538	5,212	2,217	-2,995	
3	·	<u> </u>	1,803	2,649		<del></del>	-2,864
	2001	910	2,214	3,124	3,386	<b>+</b> · · · · · · · · · · · · · · · · · · ·	
4	2002	1,169	2,667	3,837	4,157		-2,282
5	2003	1,376	3,248	4,624	4,941	316	
6	2004	1,463	3,909	5,372	5,888		
8	2005	0	4,568	4,568	7,003		
	2006	0	0	0	4,280	CANADA CONTRACTOR DE CONTRACTO	5,265
Project	65 EIRR ( Financial	Case A-Z)			EIRR =	and a substitution of the state of the land of the state	Currellativa
Year	Year	Investment	0&M	Coat	Bono6t	Net	Cumulative
1 1	1999	-	THE THE PARTY CHARGE WITH THE PARTY.	Cost	Benefit	Benefit	Net Benefit
		3,673	1,320	4,994	2,217	-2,776	
2	2000	845	1,526	2,372	2,779	407	-2,369
3	2001	910	1,874	2,784	3,386	602	-1,766
4	2002	1,169	2,257	3,426	4,157	731	-1,036
5	2003	1,376	2,746	4,122	4,941	818	-218
6	2004	1,463	3,304	4,767	5,888	1,121	904
7	2005	0	3,849	3,849	7,003	3,154	4,057
8	2006	0	0	0,	4,280	4,280	8,337
Table A-	66 EIRR (	Case B-1)			EIRR =	-8.38%	
Project	Financial					Net	Cumulative
Year	Year	Investment	0&M	Cost	Benefit	Benefit	Net Benefit
1	1999	1,677	85	1,762	250	-1,512	-1,512
2	2000	432	451	883	621	-262	-1,774
3	2001	602	614	1,216	792	-425	-2,199
4	2002	794	801	1,596	966	-629	-2,828
5	2003	784	1,053	1,837	1,248	-589	-3,417
6	2004	870	1,324	2,194	1,528	-666	-4,083
7	2005	0	1,623	1,623	1,836	213	-3,870
8	2006	0	0	0	2,509	2,509	-1,361
Table A-	67 EIRR (0	Case B-2)			EIRR =	-1.56%	
Project	Financial					Net Benefit	Cumulative
Year	Year	Investment	0 & M	Cost	<b>Benefit</b>	<b>⑤=④-③</b>	Net Benefit
1	1999	1,677	46	1,724	250	-1,473	-1,473
2	2000	432	371	802	621	-182	-1,655
3	2001	602	503	1,105	792	-314	-1,969
4	2002	794	655	1,450	966	-483	-2,452
5	2003	784	860	1,644	1,248	-396	-2,848
6	2004	870	1,079	1,949	1,528	-422	-3,270
7	2005	0	1,321	1,321	1,836	514	-2,755
8	2006	Ō	0	0	2,509	2,509	-246
Table A-	68 EIRR (C	Case B-3)			EIRR =	41.26%	Mar of Indiagnosis and Associated Associated Associated Associated Associated Associated Associated Associated
Project	Financial					Net Benefit	Cumulative
Year	Year	Investment	0 & M	Cost	Benefit	<b>⑤=④-③</b>	Net Benefit
]	1999	406	46	452	250	-202	-202
2	2000	8	371	378	621	242	40
3	2001	9	503	512	792	280	320
4	2002	794	655	1,450	966	-483	-163
5	2003	784	860	1,644	1,248	-396	-559
6	2004	870	1,079	1,949	1,528	-422	-981
7	2005	0	1,321	1,321	1,836	514	-466
8	2006	ŏ	- 1,521	0	1,922	1,922	1,456
				· · · · · · · · · · · · · · · · · · ·	1,766	13066	1,-100

Table A-69 Mortality Rate In Dar es Salaam

(Unit: per 1,000 persons)

Age	Male Mortality Rate	Female Mortality Rate
less than 1	112.00	97.00
1-4	102.00	94.00
5-9	45.00	41.00
10-14	19.00	16.00
15-19	31.00	28.00
20-24	43.00	38.00
25-29	45.00	39.00
30-34	47.00	41.00
35-39	55.00	47.00
40-44	64.00	56.00
45-49	81.00	70.00
50-54	98.00	93.00
55-59	153.00	124.00
60-64	207.00	176.00
65-69	280.00	240.00
70-74	431.00	344.00
75-79	535.00	455.00

Figure A-15 Mortality Rate in Dar es Salaam



Sources: Wanawake Na Wanaume, Tanzania, the Ministry of Healeth, 1993

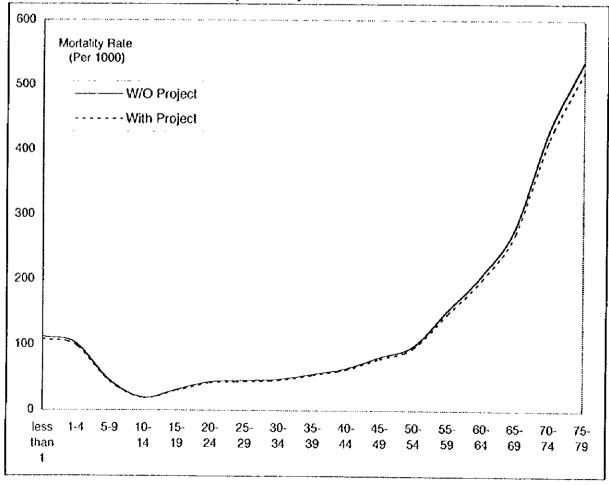
Table A-70 Impact on Mortality Rate by Master Plan

Unit: per 1,00	U persons
----------------	-----------

發

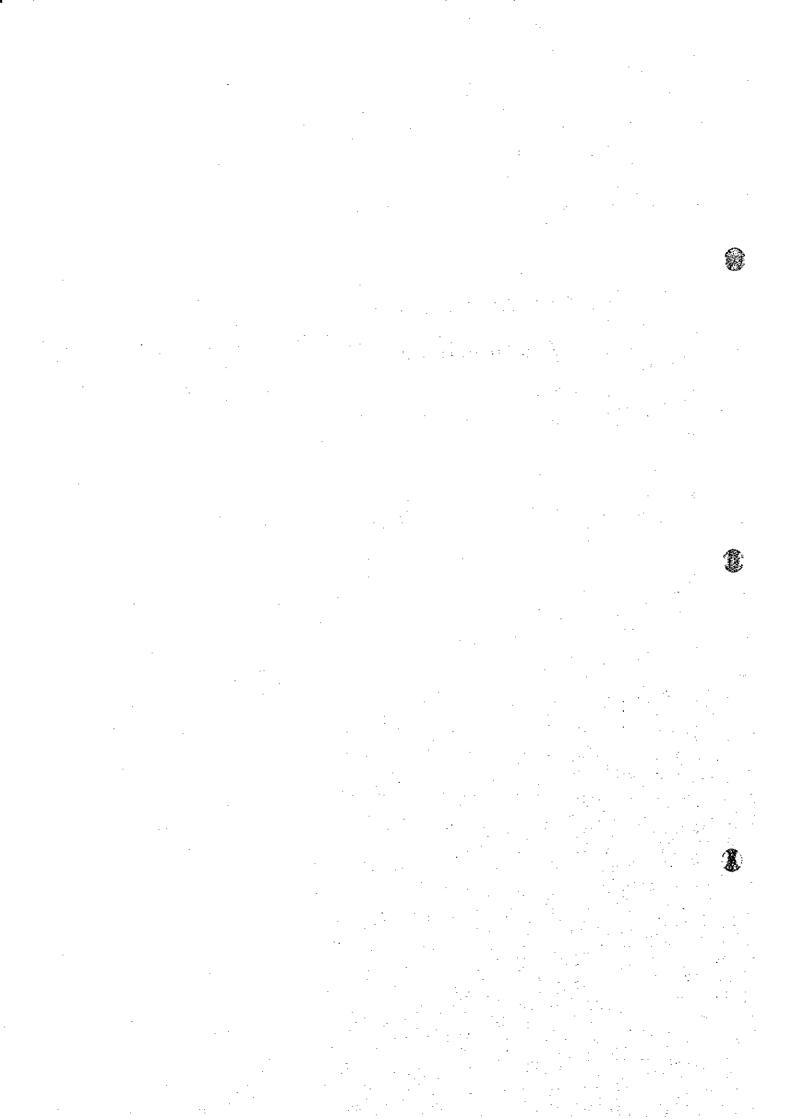
Age		Male			Female	
ngo	W/O Project	Impact	With Project	W/O Project	Impact	With Project
less than 1	112.00	3.39	108.61	97.00	2.93	94.07
1-4	102.00	3.08	98.92	94.00	2.84	91.16
5-9	45.00	1.36	43.64	41.00	1.24	39.76
10-14	19.00	0.57	18.43	16.00	0.48	15.52
15-19	31.00	0.94	30.06	28.00	0.85	27.15
20-24	43.00	1.30	41.70	38.00	1.15	36.85
25-29	45.00	1.36	43.64	39.00	1.18	37.82
30-34	47.00	1.42	45.58	41.00	1.24	39.76
35-39	55.00	1.66	53.34	47.00	1.42	45.58
40-44	64.00	1.93	62.07	56.00	1.69	54.31
45-49	81.00	2.45	78.55	70.00	2.12	67.88
50-54	98.00	2.96	95.04	93.00	2.81	90.19
55-59	153.00	4.62	148.38	124.00	3.75	120.25
60-64	207.00	6.26	200.74	176.00	5.32	170.68
65-69	280.00	8.46	271.54	240.00	7.25	232.75
70-74	431.00	13.03	417.97	344.00	10.40	333.60
75-79	535.00	16.17	518.83	455.00	13.75	441.25

Figure A-16 Impact on Mortality Rate by Master Plan



## Annex 17

## Evaluation of "Clean DSM" Pilot Project Events



### 17 Evaluation of "Clean DSM" Pilot Project Events

#### 17.1 Culture Show Evaluation

Four culture shows were held at different venues around the city as specified in Table 17-1.

Table 17-1: Culture Show Performance Details

Date	Show	Venue	Number of People Attending
Feb 4	1	Kariakoo market	2000
Feb 14	2	Mnazi Mmoja ground	2000
Feb 22	3	Vingunguti A Primary School	2000
Feb 28	4	Uhuru Mchanganyiko Primary School Ground	1200
Total			7200

At each culture show, ten people from the audience were randomly selected and interviewed. The interview questions and results are presented below.

#### 17.1.1 Interview Questions and Results

## Q.1 How did you find today's Cultural Show prepared by the City Commission?

Venue	Kariakoo	Mnazi Mmoja	Vingunguti	Uhuru	Total	%
1. very good	8	10	6	7	31	78
2. good	1	0	4	3	8	20
3. average	1	0	0	0	1	2
4. poor	0	0	Ō	0	0	0
Total	10	10	10	10	40	

#### Q.2 Why do you say this?

Venue	Karlakoo	Mnazi Mmoja	Vingunguti	Միսւս	Total	%
1, it was entertaining	4	10	2	4	20	50
2. it was interesting	8	10	Ó	2	20	50
3. learning about waste		10	10	9	31	78
4. other reasons	0	0	0	0	0	0

#### Q.3 Which part of the Cultural Show did you like the most?

Venue	Kariakoo	Mnazi Mmoja	Vingunguti	Uhuru	Total	%
1. dancing	1	6	1	2	10	25
2. singing	6	6	1	1	14	35
3. drama	10	10	8	9	37	93

Note: Some interviewees indicated more than one option for this question.

#### 0.4 Have you learned anything at all from the Cultural Show?

Venue	Kariakoo	Mnazi Mmoja	Vingunguti	Uhuru	Total	%
1. bad effects of rubbish	5	10	3	3	21	53
ways of disposing of rubbish	6	10	5	4	25	63
3. there is a by-law concerning rubbish	5	10	0	6	21	53
every person has a responsibility to keep the city clean	8	10	6	2	26	65
5. I didn't learn anything	0	0	0	0	0	0
6. other reasons	1	0	0	3	4	10

Note: Other reasons are summarised below, with the number of people stating each reason being given in brackets.

- 1. to look after our health (1).
- 2. to care for the environment (1).
- 3. to obey the law (1).
- 4. to maintain individual and environmental cleanliness (1).

#### Q.5 What will you do about waste as a result of today's Cultural Show?

Venue	Kariakoo	Mnazi Mmoja	Vingunguti	Uhuru	Total	%
I will have a special place for disposing of waste	8	10	2	1	21	53
I will explain to others what     have learned	9	10	4	3	26	65
I will pay the refuse collection charge	6	1	0	. 0	7	18
4. I will get a rubbish bin.	6	10	5	4	25	63
5. I will clean all the waste in my neighbourhood	4	10	1	3	18	45
6. I will dig a pit for disposing of waste	8	7	3	5	23	58
7. I will not do anything	0	0	0	0	Ö	0
8. Something else	0	Ō	0	0	0	Ô

#### 17.1.2 Other Comments

At the Vingunguti A performance, 3 of the 10 people interviewed stated that they thought JICA had done a good job in trying to improve the Vingunguti dump, especially in paving the road. However, they requested that drains be installed along the road leading into the landfill.

#### 17.2 Cinema Show Evaluation

Ten cinema shows were held at different venues around the city as specified in Table 17-2. The film "Pendezesha Jiji lako" was shown for the first time at the fourth show.

Table 17-2: Cinema Show Performance Details

Date	Show	Venue	Number of People Attending	Interviews Conducted (Y/N)
Feb 7	1	Vingunguti A Primary School	6000	N
Feb 13	2	Buguruni Police Station Ground	2000	Y
Feb 15	3	Vingunguti B Primary School	1500	N
Feb 18	4	Mission Quarter, Kariakoo	1500	Υ
Feb 20	5	Kidongo Chekundu	150	N
Feb 21	6	Buguruni Moto Primary School	1200	Y
Feb 25	7	Tandale Primary School	5000	Υ
Feb 26	8	Tandika market	2700	Υ
Feb 27	9	Ilala Garden	2500	Y
Mar 1	10	Ilala Boma Primary School	2000	Y
		TOTAL	24550	

At seven of the cinema shows, ten people from the audience were randomly selected and interviewed. The interview questions and results are summarised below.

#### 17.2.1 Interview Questions and Results

#### Q.1 How did you find today's Cinema show prepared by the City Commission?

Venue	2	4	6	7	8	9	10	Total	%
1. very good	10	3	2	10	3	4	4	36	52
2. good	0	5	8	0	6	4	6	29	41
3. average	0	1	0	0	1	2	0	4	6
4. poor	O	1	0	0	0	0	0	1	1
Total	10	10	10	10	10	10	10	70	100

#### Q.2 Why do you say this?

Venue	2	4	6	7	8	9	10	Total	%
it was     entertaining	10	1	10	10	1	6	7	45	64
2. it was interesting	9	1	0	10	1	4	3	28	40
3. learning about rubbish	1	8	0	10	9	8	7	43	61
4. other reasons	0	2	0	0	0	0	0	2	3

Note: Other reasons are summarised below. The numbers in brackets indicates the number of people giving this reason.

- 1. It is motivating (1).
- 2. The person who rated the cinema show as poor explained that this was because the DCC says a lot but does not implement nor enforce what they say (1).

#### Q.3 Have you learned anything at all from the Cinema show?

Venue	2	4	6	7	8	9	10	Total	%
1. bad effects of rubbish	10	3	8	10	2	9	0	42	60
2. ways of disposing of waste	9	6	4	10	3	6	3	41	59
3. there is a by-law concerning waste	1	3	2	9	1	7	0	23	33
every person has a responsibility to keep the city clean	5	2	5	8	4	1	7	32	46
5. I didn't learn anything	0	0	1	0	0	0	1	2	3
6. something else	0	0	0	0	0	0	0	0	0

#### Q.4 What will you do about waste as a result of the Cinema show?

Venue	2	4	6	7	8	9	10	Total	%
I will have a special place for disposing of waste	10	4	5	10	4	6	0	39	56
2. I will explain to others what I have learned	5	4	2	6	3	1	3	24	34
3. I will pay the refuse collection charge	4	1	2	8	0	3	0	18	26
4. I will get a rubbish bin	9	4	7	8	1	6	4	39	56
5. I will clean all the rubbish in my neighbourhood	5	2	4	7	2	5	1	26	37
6. I will did a pit for rubbish disposal	10	2	9	6	1	8	3	39	56
7. I will not do anything	0	0	0	0	0	0	2	2	3
8. something else	0	2	4	0	0	6	0	12	17

Note: Other reasons are summarised below. The numbers in brackets indicates the number of people giving this reason.

- 1. I will boil drinking water (5).
- 2. I will not dispose of waste illegally (2).
- 3. I will obey the DCC by-laws which have been implemented (1).
- 4. I will prevent children from playing in areas where there is waste (1).
- 5. I will use the waste containers provided (1).
- 6. I will avoid buying food from street kiosks (1).
- 7. I will take steps with people who dump waste illegally (1).
- 8. I will make sure that the City Commission enforces the law it has passed (1).

#### 17.2.2 Other Comments

- 1. Several people commented that many people do not keep local rules concerning cleanliness.
- 2. Many people commented on the failure of DCC to implement and enforce the by-laws stating that the by-laws are there for a purpose. If they are not kept, stern measures should be taken against whoever breaks them. Otherwise the illegal dumping of rubbish will never cease. It was suggested that street chairmen could be involved in this process.
- Another suggestion was that the number of collection vehicles should be increased in order to increase the amount of waste collected for disposal. This should go hand in







hand with a greater commitment and seriousness from all residents throughout the city concerning waste and cleanliness.

- 4. One person in the Kariakoo area stated that more drums should be put in the streets. People are ready to make a contribution to buy these drums <u>only</u> if DCC regularly collects waste.
- Several people commented that education and awareness raising on SWM should not end with the current campaign. It should continue until peoples' behaviour has changed.
- 6. The content of the film show should cover all points concerning cleanliness such as cleaning toilets, boiling drinking water, etc.
- 7. DCC/JICA should plan other means of educating people with the problems caused by waste if it is disposed in inappropriate places. Large posters (billboards) showing problems which waste can cause and how people can be prosecuted if they throw waste randomly could be displayed at road intersections, schools, football grounds, etc.

#### 17.3 Contents of Primary School Syllabus on SWM

This section is included here as some comparison was made with the book and content of the trial lesson.

SWM issues come under hygiene, health and sanitation which are taught as part of the Domestic Science Primary School syllabus. Std 1-2 and Std 3-7 are taught this subject for 2 and 4 periods per week respectively. The main contents of this syllabus relating to SWM have been summarised below:

- Std 1: Students are taught about cleanliness of the classroom, school grounds and toilets. They are taught how to collect waste properly and are shown approved places for disposing it within the school grounds. In some city schools, students should be taken around the school buildings to collect paper and other rubbish and put it in a rubbish bin. Students should become accustomed to dispose of rubbish including fruit peel, food remains and sweet wrappings in approved places within the school grounds (container, drum, pit).
- Std 2: Students are taught about cleanliness of the places where we stay. It is demonstrated to students how to collect waste properly and they are shown approved places for disposing of it in their school grounds. They are taught about collecting classroom waste and disposing of it properly. They also learn about sweeping and cleaning around the home and disposing of this waste properly.
- Std 3: Students are taught about daily cleanliness of all the places where they live and stay (home, school, etc.). This includes collection and disposal of waste in suitable places by burning or burial. They learn about diseases such as cholera, malaria, eye diseases, etc. including their symptoms, means of infection and prevention.
- Std 4: Students are taught about flies, mosquitoes, rats and bacteria. Students learn that flies breed in toilets, illegal dump sites and kitchens; mosquitoes like to breed in water including in puddles, tins and pots. They also learn about bacteria and importance of burying rubbish, tins, etc.

Std 5: Students learn about the importance of a clean house and means of cleaning each day. Places for disposing of waste are discussed in more detail. In villages, people should dig a refuse pit or build a place for burning rubbish. Rubbish which does not rot should be buried separately. In cities, people should clean their rubbish bins regularly.

Std 6: Students learn about preventing and eliminating flies and mosquitoes. They are shown pictures of the life cycles of flies and mosquitoes. They carry out an inspection of school grounds looking at rubbish pits and covering all places having dirty water where mosquitoes and flies can breed.

Std 7: No specific reference to SWM matters was found.

#### 17.4 Book Evaluation Summary

#### 17.4.1 Teachers Evaluation

An evaluation questionnaire was distributed to 30 primary school teachers along with several copies of the draft version of the book for them and their students. The results of this questionnaire are presented below:

Number of evaluation forms distributed to teachers: 30

Number of completed evaluation forms received: 18

#### 1. What did you think of the book OVERALL?

Option	Number of Respondents	%
a. very good	6	33
b. good	10	56
c. average	2	11
d. poor	0	0

#### 2. What did you like BEST about the book?

Option	Number of Respondents	%
a. words	10	56
b. pictures	7	39
c. games	2	11
d. stories	1	6
e. all parts	1	6
f. other	0	0

Note: on one form, more than one option was ticked for this question

#### 3. What did you like LEAST about the book?

Option	Number of Respondents	%
a. words	3	17
b. pictures	7	39
c. games	2	11
d. stories	1	6
e. other	0	0
f, not applicable	. 5	28

Note: One teacher commented that a long time is required to explain to the students the meaning of the pictures (1).







#### 4. Did you give the book to your Std 4-5 students to read and use?

YES 12 NO 6

#### If YES answer parts 4.1, 4.2 and 4.3 below:

#### 4.1 What did they think of the book?

Option	Number of Respondents	%
a. very good	4	33
b. good	6	50
c. average	2	17
d. poor	0	0

#### 4.2 What did they like BEST about the book?

Option	Number of Respondents	%
a. words	2	17
b. pictures	8	67
c. games	4	33
d. stories	3	25
e. all parts	0	0
f. other	0	0

Note: On some forms, more than one option was ticked for this question

#### 4.3 What did they like LEAST about the book?

Option	Number of Respondents	%
a. words	3	25
b. pictures	1	8
c. games	1	. 8
d. stories	2	17
e. other	2	17
f. not applicable	3	25

Note: Other reasons are summarised below. The numbers in brackets indicates the number of people giving this reason.

- 1. In some places, the explanations are very short without many examples to help students understand the ideas presented (1).
- 2. It took a long time for the students to understand the large picture of good and bad things about waste (1).

# 5. In this question, circle YES or NO for each option. We want to compare the CONTENT of the book with the Ministry of Education syllabus and existing teaching material on hygiene, sanitation and waste management for primary school students.

Questions	YES	NO	No answer
a. does the book cover the syllabus content?	13 (72%)	2	3
b. does the book extend the syllabus content?	9 (50%)	6	3
c. is the book useful for teaching?	16 (89%)	0	2
d. is the book suitable for Std 4-5 students' use?	14 (78%)	2	2

## 6. Which parts of the book are not suitable? (you may indicate more than one answer)

Option	Number of Respondents	%
a. some of the ideas are too difficult for Std 4-5 students	7	39
b. the words are too difficult for Std 4-5 students	4	22
c. the pictures are difficult to understand	4	22
d. the games are not explained clearly	4	22
e. the stories about Yohana and Neema are poor	3 ;	17
f. there are too many words	2	11
g. the words are too small	3	17
h, the pictures are poor	2	11
i. the book is very different from most Tanzanian primary school books	11	61
j. other	0	0

#### 7. Please state any suggestions you have for changes to the book:

#### 8. Any other Comments:

(The responses to Q.7 and Q.8 have been categorised into groups as shown below):

Ma	in Points	No. of Respondents
1.	parts of book (ideas, words, pictures) too difficult for Std 4/5	6
2.	more explanation/simplification is needed	6
3.	topics are not well arranged/don't flow	5
4.	extension of teaching to wider society needed	4
5.	topics are short and explained briefly	3

Ott	ner Points	No. of Respondents
1.	include a table of contents	1
2.	list and define vocabulary	1
3.	chapter for each topic	1
4.	pictures should be big and numbered	i
5.	suitable for Std 1-4 students only	. 1
6.	book has so many explanations that students get broad understanding	1
7.	include guidelines for teachers	1
8.	the stories may be long and exciting	1
9.	include more exercises	1
10.	more suitable for Std 6	1
11.	use of word duniani not appropriate in some places	1
12.	crossword clues should be clear and correct	1
13.	crossword makes children think this is a swahili lesson (not health lesson)	1
14.	the crutches in the cartoon (Neema's injury) is not realistic	. 1
15.	teachers in these subjects should get a seminar every 3 months	1
16.	front cover should show a boy and girl primary school student	- 1

#### 17.4.2 Student Evaluation

Two schools were visited so that the book could be evaluated directly with Std 5 pupils. These schools were Kumbukumbu and Mwananyamala B primary schools. 6-7 copies of the book were given to Std 5 pupils at each school for trial and evaluation. One week later, the school were revisited and the book was discussed with pupils. At both schools, the pupils had looked through the book in groups. It should be noted that:

1. Kumbukumbu school was fourth last year in Std 7 leaving examinations in DSM. The students interviewed seemed very intelligent and were well prepared, having







completed most of the exercises and games in the book. Conversely, the pupils at Mwananyamala B did not seem to be as intelligent as those at Kumbukumbu. However, one reason for this may be that they were not very well prepared for the evaluation as many of the students had not looked at all the book prior to the evaluation.

2. The book was discussed with a total of 35 and 30 Std 5 pupils at Kumbukumbu and Mwananyamala B primary schools respectively.

#### 17.4.2.1Kumbukumbu Primary School

At Kumbukumbu, the following questions were asked and answers taken from some members of the class.

#### 1. What did they think of the book?

All students said it was good or very good with most students favouring the good answer. Reasons given for their assessment were that the book talks about the importance of a) SWM; b) environmental protection; c) preventing diseases; d) making cleanliness; e) not throwing rubbish away.

#### 2. What did they like BEST about the book?

Most students liked the words or pictures. One student liked the questions and said that the explanations are suitable for Std 5 pupils.

#### 3. What did they like LEAST about the book?

Most students said there was nothing in particular which they didn't like.

#### 4. General Comments

- some of the questions are simple; others are difficult.
- the pictures are very good. However, the compost making picture and average bag of waste picture are difficult to understand as is the detective picture.
- several pupils stated that there are too few questions and more are needed.
- one pupil commented that we should ask some Std 4 students for their opinions in order to see if the book is suitable for Std 4 students.

#### 5. Students' Questions

- will this book be provided to Std 5 primary school pupils only?
- will this book have the same questions or will the questions be split so that there will be two sets of questions for Std 4 (easier questions) and Std 5 (more difficult questions)?

#### 17.4.2.2Mwananyamala B

At Mwananyamala B, the following questions were asked and answers taken from some members of the class. However, the class did not seem well prepared. Hence, the strategy was changed and answers to the questions were obtained by circulating around the students asking questions and checking what they did and did not understand.

#### 1. What did they think of the book?

All students said it was very good.

#### 2. What did they like BEST about the book?

Most students liked the words.

#### 3. What did they like least about the book?

Most students said there was nothing in particular which they didn't like.

#### 4. General Comments

- The detective picture is least understood. An example of how to use it should be included with the explanation.
- These students did not seem to be familiar with join the dots, mixed up words and
  crossword games. When these games were explained to them, they understood
  quickly. The main problem here seemed to be lack of preparation rather than the
  games being new or too difficult.

#### 17.5 Trial Lesson Evaluations

#### 17.5.1 "Mama Safi" lesson (Std. 2)

#### 17.5.1.1Method

- 1. For questions 1-3, students were instructed to raise their hands to answer "YES" or "NO". 5-7 students were then selected to give reasons for their answers.
- 2. For question 4, students raised their hands to answer the question. 5-7 students were selected and their answers recorded.

#### 17.5.1.2Results

Primary School	IIala Boma	Vingun- guti 8	Kawe A	Mpa- kani	Muun- gano	Azi- mio	Total	%
Number of pupils	90	82	87	70	65	99	493	
Q.1 Do you understand that waste is dangerous?	63	72	87	63	62	97	444	90
Q 2 Do you know what happens to us if our surroundings are dirty?	72	78	70	56	. 55	97	428	87
Q.3 Do you know why we put waste into the rubbish bin or pit?	72	80	74	56	59	98	439	89

Note: 1. Q.2 Reasons:

a) it causes disease;

b) it allows harmful insects to breed;

c) our eyes will become painful because of the dirty place;

d) we will become sick;

e) we will suffer from stomach ache.

2. Q.3 Reasons:

a) to avoid the occurrence of disease;

b) to store waste;

c) destruction of harmful breeding insects;

d) to keep our surroundings clean; e) to avoid bad smell;

f) we are afraid to get sick.







#### Q.4 What are you going to do by yourself about waste and cleanliness?

- 1. to wash clothes;
- 2. to sweep;
- 3. to mop the floor;
- 4. to wash my body;
- 5. to wash dishes;
- 6. to wash hands:
- 7. to dig refuse pit.

#### 17.5.2 Dialogue lesson (Std. 5)

#### 17.5.2.1Method

- 1. For questions 1-3, students were instructed to raise their hands to answer "YES" or "NO". 5-7 students were then selected to give reasons for their answers.
- 2. For question 4, students wrote down their answers and handed them in.

#### 17.5.2.2Results

Primary School	liala Boma	Ving- unguti B	Kawe A	Mpa- kani	Muun- gano	Azi- mio	Total	%
Number of pupils	62	52	75	52	63	90	394	
Q.1 Do you understand that waste is dangerous?	50	51	60	49	60	88	358	91
Q 2 Do you know what happens to us if our surroundings are dirty?	43	47	64	51	62	88	355	90
Q.3 Do you know how waste is dangerous to us?	59	47	60	52	63	86	367	93

Note: Q.2 and Q.3 Reasons (same for both questions):

- a) eruption of diseases such as malaria, diarrhoea and cholera;
- b) production of cockroaches, mosquitoes, rats, flies and other harmful insects and bacteria;
- c) people are very likely to get injured.

#### Q.4 What action can you take about waste and cleanliness?

1.	to clean generally	55%
2.	use rubbish bin	19%
3.	use rubbish pit	16%
4.	wash clothes, dishes	6%
5.	mopping	3%
	hurning waste	1%

#### 17.5.3 Group Work Lessons: Std 2 and 5

#### 17.5.3.1Method

- 1. For question 1, students were instructed to raise their hands according to which option a,b,c or d they chose.
- 2. For Q 2-3, each group of Std 2 pupils (they had been working in groups for most of the lesson) wrote down their answers to these questions and handed them in.
- 3. For Q 2-3, Std 5 pupils individually wrote their answers down and handed them in.

4. In both cases, these answers were collated and put into different categories as shown in the table.

#### 17.5.3.2Results

#### 1. How did you find this lesson?

Class		Std 2		Std 5				
School	Kawe A	Mpa- kani	Azimio	Ilala Boma	Vingun- guti B	Muun- gano	Total	%
number of pupils	94	68	96	68	62	63	451	
a. very good	69	58	80	68	61	63	399	88
b. good	3	10	16	0	1	0	30	7
c. average	5	0	Ō	0	0	0	5	1
d. poor	17	0	0	0	0	0	17	4

Note: In the first Std 2 lesson at Kawe A, the snakes and ladders game was used. However, the class was much bigger than expected and there was not enough copies of the game to go around. It also took too long to teach everyone how to play. This is the main reason for 17 pupils stating that the lesson was poor. Following this lesson, the snakes and ladders game was simplified and used Std 5 only.

#### 2. What did you learn about waste and cleanliness?

Class	Std 2		Std 5 (total students = 192)					
School	Kawe A	Mpa- kani	Azi- mio	ilaia Borna	Vingun- guti B	Muun- gano	Total	%
to clean and beautify the city including our surroundings	6	7	12	15	10	22	47	24
<ul> <li>b. good ways of waste storage and disposal (pit, bucket, container, burning)</li> </ul>	8	0	11	33	34	35	102	53
<ul> <li>bad effects of rubbish; diseases caused by waste; bad behaviour concerning waste</li> </ul>	3	11	4	19	4	7	30	16
d. benefits and usefulness of rubbish	0	0	0	3	1	1	5	3
e. illegible answer or no answer	N/A	N/A	N/A	6	15	8	29	15

#### 3. What are you going to do about waste and the problems it causes?

Class	Std 2		Std 5 (total students = 192)				-	
School	Kawe A	Mpa∙ kani	Azi- mio	llala Boma	Vingun- guti B	Muun- gano	Total	%
a. to put waste in a bucket, pit, drum or other good place or burn waste	14	10	16	45	33	53	131	68
b. to make the city clean and beautify the environment	12	1	3	4	8	5	17	9
<ul> <li>c. to avoid the bad effects of rubbish and bad behaviour</li> </ul>	0	3	3	17	18	3	38	20
d. illegible answer or no answer	N/A	N/A	N/A	8	9	9	26	13

#### 17.6 Primary School Teachers' Seminar

#### 17.6.1 Evaluation Questionnaire Summary

#### Q.1 What did you think of the seminar? (choose one answer)

Option	Number of Participants	%
a. very good	31	84
b. good	6	16
c. average	0	0
d. poor	0	. 0

#### Q.2 Which part of the seminar did you like the most? (choose one answer)

Option	Number of Participants	%
a. evaluation of the book	5	14
b. Study team's presentation	19	51
c. Participants' presentation	13	35

#### Q.3 What did you learn from the seminar? (multiple answer)

Option	Number of Participants	%
a. increased knowledge	23	62
b. problems caused by waste	13	35
c. different ways of teaching	27	73
d. nothing	0	0
e. other	0	0

## Q.4 Will you use anything from the seminar in your teaching? (multiple answer)

Option	Number of Participants	%
a, things learned about waste	15	40
b. book	20	54
c. pictures	6	16
d. puppet	2	5
e. dialogue	5	14
f. games	6	16
g. photos	4	11
h. nothing	0	0
i. other	2	5

Note: Other reasons are summarised below, with the number of people stating each reason being given in brackets.

- 1. The seminar helped and gave us light on how to take care of waste in general (1).
- 2. The seminar will help us to make follow-up in our schools (1).

#### 17.6.2 Other Comments

A large number of general comments were made by the participants:

- 20 participants (54%) suggested that more seminars should be introduced to teachers and the general public.
- 8 participants (22%) stated that by conducting seminars more often it can motivate people to improve their habits concerning cleanliness.
- 7 participants (19%) suggested that the seminar should be conducted monthly and that the allocated time should be increased from half a day.
- 7 participants (19%) stated that we should take their comments on the book given during the seminar into account when producing the final version of the book.
- 4 participants (11%) suggested that teaching materials such as drawing paper and pens be provided to participants to enable them to prepare teaching aids.
- 4 participants (11%) suggested that this topic be introduced into the primary school syllabus.

(September)

- 3 participants (8%) suggested the JICA Study team to visit and teach at all primary schools in DSM.
- 2 participants (5%) suggested that the JICA Study team introduce this project to all primary schools in DSM.
- 2 participants (5%) advised producing more copies of the book.