

TABLE G-11(1)

CONSTRUCTION COST OF MUSAVEREMA (I-2-1) PROJECT

(5-1)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(A) DAM									
1. Site preparation and Temporary works	L. S.	---							
			(Z\$)	(Z\$)	(Z\$)				
			---	---	---	56.0	46.0	102.0	[(2)+(3)+(4)+(5)]X5%
2. Foundation Treatment									
- Clearing and grubbing	ha.	5.0	2,630	1,120	3,750	13.2	5.6	18.8	
- Stripping	cu. m	24,400	0.9	0.6	1.5	22.0	14.6	36.6	
- Excavation (soft, waste)	cu. m	15,000	2.9	1.6	4.5	43.5	24.0	67.5	Excavated soil to be washed to spoil area
- Excavation (soft, re-use)	cu. m	31,000	0.9	0.6	1.5	27.9	18.6	46.5	Excavated soil to be applied to Embankment of shell
- Drilling and Grouting works	m	770	41.5	41.5	83.0	32.0	31.9	63.9	
- Miscellaneous works (5%)	L. S.	---	---	---	---	6.4	5.3	11.7	
Sub Total						145.0	100.0	245.0	
3. Dam Embankment									
- Embankment of Core	cu. m	50,000	4.0	2.5	6.5	200.0	125.0	325.0	
- Embankment of Shell	cu. m	125,600	3.0	2.0	5.0	375.0	250.0	625.0	
- Vertical filter drain	cu. m	5,500	6.0	14.0	20.0	33.0	77.0	110.0	Materials to be collected in the river, transported within 3Km
- Horizontal filter drain	cu. m	---	5.0	5.0	10.0	---	---	---	
- Toe drain (Rockfill)	cu. m	2,000	13.8	9.2	23.0	27.6	18.4	46.0	
- Riprap (Dry stone pitching)	cu. m	5,000	11.0	16.5	27.5	55.0	82.5	137.5	
- Sodding	sq. m	16,800	0	4.0	4.0	0.0	67.2	67.2	
- Miscellaneous works (5%)	L. S.	---	---	---	---	34.4	30.9	65.3	
Sub Total						725.0	651.0	1,376.0	
4. Spillway									
- Clearing and grubbing	ha	2.4	2,630	1,120	3,750	6.3	2.7	9.0	
- Stripping	cu. m	11,900	0.9	0.6	1.5	10.7	7.1	17.8	
- Excavation (Soft, re-use)	cu. m	14,000	0.9	0.6	1.5	12.6	8.4	21.0	Materials to be applied to Embankment of shell.
- Excavation (hard)	cu. m	3,800	23.8	10.2	34.0	90.4	38.8	129.2	
- Mass and Plain Concrete	cu. m	360	97.0	97.0	194.0	34.9	34.9	69.8	
- Stone Masonry	cu. m	1,100	42.5	42.5	85.0	46.8	46.8	93.6	
- Riprap (dry)	cu. m	470	11.0	16.5	27.5	5.2	7.8	13.0	
- Miscellaneous works (5%)	L. S.	---	---	---	---	10.1	7.5	17.6	
Sub Total						217.0	154.0	371.0	

TABLE G-11(1)

CONSTRUCTION COST OF MUSAVEREMA (I-2-1) PROJECT

(5-2)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C (Z\$)	L/C (Z\$)	Total (Z\$)	F/C	L/C	Total	
5. Intake Facilities									
- Excavation (soft)	cu. m	60	2.9	1.6	4.5	0.2	0.1	0.3	
- Excavation (hard)	cu. m	—	23.8	10.2	34.0	—	—	—	
- Fill and back fill	cu. m	10	3.0	2.0	5.0	0.1	0.0	0.1	
- Reinforced Concrete	cu. m	53	187.0	153.0	340.0	9.9	8.1	18.0	
- Asbestos pipe ϕ = 60mm 250mm dia.	L.S.	—	—	—	—	0.6	1.3	1.9	
- Flap gate 250mm dia.	Kg	850	—	—	—	1.3	0.9	2.2	
- Butterfly gate 150mm dia.	L.S.	—	—	—	—	5.4	0.3	5.7	
- Screen	Kg	150	—	—	—	0.2	0.2	0.4	
- Guard and Maintenance House	sq. m	20	157.5	157.5	315.0	3.2	3.1	6.3	
- Miscellaneous works (5%)	L.S.	—	—	—	—	1.4	1.0	2.4	
Sub Total						22.0	15.0	37.0	
(A) Dam						1,165.0	966.0	2,131.0	F/C 55%, L/C 45%
(B) WATER CONVEYANCE FACILITIES									
1. Site preparation and Temporary works									
	L.S.	—	—	—	—	—	9.0	9.0	18.0 Gravity system [(2)+(3)]X5%
2. Canal Work									
- Clearing and grubbing	ha	2.8	2,630	1,120	3,750	7.4	3.1	10.5	
- Stripping	cu. m	11,200	0.9	0.6	1.5	10.0	6.7	16.7	soil to be applied to fill
- Excavation (soft, re-use)	cu. m	3,960	0.9	0.6	1.5	3.6	2.3	5.9	
- Excavation (hard)	cu. m	210	23.8	10.2	34.0	5.0	2.1	7.1	
- Fill (canal and road)	cu. m	7,410	2.5	1.5	4.0	18.5	11.1	29.6	
- Concrete lining	m	5,600	9.0	10.0	19.0	50.4	56.0	106.4	
- R. C. pipe ϕ 600mm	m	73	35.0	28.0	63.0	2.5	2.1	4.6	
- Sand bed, Gravel bed	cu. m	370	9.5	9.0	18.5	3.5	3.3	6.8	
- Concrete for related structure	cu. m	28	187.0	153.0	340.0	5.2	4.3	9.5	
- Gravel pavement	sq. m	22,400	1.5	1.5	3.0	33.6	33.6	67.2	
- Fencing works	m	11,200	1.0	2.5	3.5	11.2	28.0	39.2	
- Miscellaneous works (5%)	L.S.	—	—	—	—	7.1	8.4	15.5	
Sub Total						158.0	161.0	319.0	

TABLE G-11(1)

CONSTRUCTION COST OF MUSAVEREMA (I-2-1) PROJECT

(5-3)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
3. Night Storage Reservoir			(Z\$)	(Z\$)	(Z\$)				
- Clearing and grubbing	ha	0.04	2,630	1,120	3,750	0.1	9.0	0.1	
- Stripping	cu.m	740	0.9	0.6	1.5	0.7	0.4	1.1	
- Excavation (soft waste)	cu.m	700	2.9	1.6	4.5	2.0	1.1	3.1	Excavated soil to be wasted to spoil area
- Excavation (soft re-use)	cu.m	2,610	0.9	0.6	1.5	2.3	1.6	3.9	Excavated soil to be notified to fill of dike
- Fill	cu.m	2,610	3.0	2.0	5.0	7.8	5.2	13.0	
- Concrete flume 40x35	m	140	18.5	12.5	31.0	2.6	1.7	4.3	
- R. C. pipe φ600mm	m	26	35.0	28.0	63.0	0.9	0.7	1.6	
- Sodding	sq.m	1,770	0	4.0	4.0	---	7.1	7.1	
- Miscellaneous works (5%)	L.S.	---	---	---	---	0.6	1.2	1.8	
Sub Total						17.0	19.0	36.0	
(B) Water Conveyance Facilities									
Total						184.0	189.0	373.0	F/C 54%, L/C 46%
Total Cost of Construction falling under jurisdiction of MEWRD						1,349.0	1,155.0	2,504.0	F/C 55%, L/C 45%

TABLE G-11(1)

CONSTRUCTION COST OF MUSAVEREMA (I-2-1) PROJECT

(5-4)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(C) Field Consolidation Works			(Z\$)	(Z\$)	(Z\$)				on force account by AGRITEX
1. Site preparation and Temporary Works	L.S.					22.7	22.5	45.2	[(2)+(3)+(4)+(5)+(6)]×5%
2. Land Grading Works									
— Clearing and grubbing	ha	43	2,250	1,500	3,750	96.8	64.5	161.3	
— Land levelling works	ha	36	322	215	537	11.6	7.7	19.3	
— Deep ploughing works	ha	36	53	35	88	1.9	1.3	3.2	
— Miscellaneous works (5%)	L.S.					5.5	3.7	9.2	
Sub Total						115.8	77.2	193.0	
3. Distribution Canal									
— Concrete canal									
Type A 700×500	m	0	28	28	56	0	0	0	
B 600×450	m	0	25	25	50	0	0	0	
C 500×400	m	850	22	22	44	18.7	18.7	37.4	
D 500×350	m	950	21	20	41	20.0	19.0	39.0	
E 400×350	m	550	19	18	37	10.5	9.9	20.4	
F 350×300	m	3,400	16	15	31	54.4	51.0	105.4	
— Drop structure (all types)	NO.	71	83	83	166	5.9	5.9	11.8	
— Box (off-take) (all types)	NO.	28	102	102	204	2.8	2.9	5.7	
— Road Crossings (7m long)	NO.	14	375	375	750	5.2	5.3	10.5	
— Miscellaneous works (5%)	L.S.					5.9	5.6	11.5	
Sub Total						123.4	118.3	241.7	
4. Drainage Canal									
— Drainage canal	m	7,700	5	6	11	38.5	46.2	84.7	
— Road Crossings (7m long)	NO.	32	375	375	750	12.0	12.0	24.0	
— Erosion control weir	NO.	460	48	48	96	22.1	22.1	44.2	
— Miscellaneous works (5%)	L.S.					3.6	4.0	7.6	
Sub Total						76.2	84.3	160.5	

TABLE G-11(1)

CONSTRUCTION COST OF MUSAVEREMA (I-2-1) PROJECT

(5-5)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
5. Farm Road			(Z\$)	(Z\$)	(Z\$)				
- Trunk road	m	4,100	10.5	12.5	23.0	43.0	51.3	94.3	gravel pavement
- Access road	m	1,500	10.5	12.5	23.0	15.7	18.8	34.5	gravel pavement
- Lateral road	m	2,500	8.0	10.0	18.0	20.0	25.0	45.0	gravel pavement
- Branch road	m	---	2.2	3.3	5.5	---	---	---	
- Miscellaneous works (5%)	L.S.	---	---	---	---	3.9	4.8	8.7	no pavement
Sub Total						82.6	99.9	182.5	
6. Farming Facilities									
- Farmstore	sq.m	100	125	125	250	12.5	12.5	25.0	
- Office	sq.m	50	187	188	375	9.4	9.4	18.8	
- Multi-purpose hall	sq.m	100	187	188	375	18.7	18.8	37.5	
- Living quarter	sq.m	100	156	156	312	15.6	15.6	31.2	
- Blair Latrines	NO.	8	125	187	312	1.0	1.5	2.5	
- Fencing	m	3,000	1.0	2.5	3.5	3.0	7.5	10.5	
- Gate	NO.	5	198	240	438	1.0	1.2	2.2	
- Miscellaneous works (5%)	L.S.	---	---	---	---	3.1	3.3	6.4	
Sub Total						64.3	69.8	134.1	
(C) Field Consolidation works									
Total						485.0	472.0	957.0	F/C 51%, L/C 49%

TABLE G-11(2)

CONSTRUCTION COST OF CHINYAMATUMWA (II-1-6) PROJECT

(5-1)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(A) DAM			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary works	L. S.	—	—	—	—	46.0	37.0	83.0	[(2)+(3)+(4)+(5)] X 5%
2. Foundation Treatment									
— Clearing and grubbing	ha.	2.1	2,630	1,120	3,750	5.5	2.4	7.9	
— Stripping	cu. m	10,700	0.9	0.6	1.5	9.6	6.4	16.0	
— Excavation (soft, waste)	cu. m	7,200	2.9	1.6	4.5	20.9	11.5	32.4	Excavated soil to be wasted to spoil area
— Excavation (soft, re-use)	cu. m	16,700	0.9	0.6	1.5	15.0	10.0	25.0	Excavated soil to be applied to Embankment of shell
— Drilling and Grouting works	m	1,480	41.5	41.5	83.0	61.4	61.4	122.8	
— Miscellaneous works (5%)	L. S.	—	—	—	—	5.6	4.3	9.9	
Sub Total						118.0	96.0	214.0	
3. Dam Embankment									
— Embankment of Core	cu. m	37,200	4.0	2.5	6.5	148.8	93.0	241.8	
— Embankment of Shell	cu. m	122,400	3.0	2.0	5.0	367.2	244.8	612.0	
— Vertical filter drain	cu. m	4,300	6.0	14.0	20.0	25.8	60.2	86.0	Materials to be collected in the river, transported within 3K.m
— Horizontal filter drain	cu. m	—	5.0	5.0	10.0	—	—	—	
— Toe drain (Rockfill)	cu. m	800	13.8	9.2	23.0	11.0	7.4	18.4	
— Riprap (Dry stone pitching)	cu. m	1,400	11.0	16.5	27.5	15.4	23.1	38.5	
— Sodding	sq. m	8,300	0	4.0	4.0	0.0	33.2	33.2	
— Miscellaneous works (5%)	L. S.	—	—	—	—	28.8	23.3	52.1	
Sub Total						597.0	485.0	1,082.0	
4. Spillway									
— Clearing and grubbing	ha	1.6	2,630	1,120	3,750	4.2	1.8	6.0	
— Stripping	cu. m	8,000	0.9	0.6	1.5	7.2	4.8	12.0	
— Excavation (Soft, re-use)	cu. m	42,600	0.9	0.6	1.5	38.3	25.6	63.9	Materials to be applied to Embankment of shell.
— Excavation (hard)	cu. m	100	23.8	10.2	34.0	2.4	1.0	3.4	
— Mass and Plain Concrete	cu. m	310	97.0	97.0	194.0	30.0	30.0	60.0	
— Stone Masonry	cu. m	1,350	42.5	42.5	85.0	57.4	57.4	114.8	
— Riprap (dry)	cu. m	420	11.0	16.5	27.0	4.6	6.9	11.5	
— Miscellaneous works (5%)	L. S.	—	—	—	—	6.9	6.5	13.4	
Sub Total						151.0	134.0	285.0	

TABLE G-11(2)

CONSTRUCTION COST OF CHINYAMATUMWA (II-1-6) PROJECT

(5-2)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
5. Intake Facilities			(Z\$)	(Z\$)	(Z\$)				
- Excavation (soft)	cu.m	120	2.9	1.6	4.5	0.3	0.2	0.5	
- Excavation (hard)	cu.m	---	23.8	10.2	34.0	---	---	---	
- Fill and back fill	cu.m	60	3.0	2.0	5.0	0.2	0.1	0.3	
- Reinforced Concrete	cu.m	69	187.0	153.0	340.0	12.9	10.6	23.5	
- Asbestos pipe ϕ = 75m 300mm dia.	L.S.	---	---	---	---	1.0	2.2	3.2	
- Sluice gate 300mm dia.	L.S.	---	---	---	---	3.3	0.2	3.5	
- Submerged disk gate 200mm dia.	L.S.	---	---	---	---	32.8	1.6	34.4	
- Flap Gate	L.S.	---	---	---	---	1.5	1.0	2.5	with screen, 1000 Kg
- Miscellaneous works (5%)	L.S.	---	---	---	---	2.0	0.1	2.1	
Sub Total						54.0	16.0	70.0	
(A) Dam									
Total						966.0	768.0	1,734.0	F/C 56%, L/C 44%
(B) WATER CONVEYANCE FACILITIES									
1. Site preparation and Temporary works	L.S.								
2. Pump and pipeline system									
2-1 Supply of Equipment									
- Pumps and accessories (3sets)	L.S.	---	---	---	---	69.2	3.5	72.7	
- Pump starter and accessories	L.S.	---	---	---	---	7.7	0.4	8.1	
- Valves	L.S.	---	---	---	---	12.3	0.6	12.9	
- Pipes in pump house	L.S.	---	---	---	---	18.4	0.9	19.3	
- Generator for Pumps	L.S.	---	---	---	---	101.4	5.1	106.5	
- Generator for control and starter	L.S.	---	---	---	---	17.5	0.9	18.4	
- Fuel tank and piping materials	L.S.	---	---	---	---	10.8	0.5	11.3	
- Electric cubicle and wiring materials	L.S.	---	---	---	---	153.6	7.7	161.3	
- Crane and accessories (2sets)	L.S.	---	---	---	---	30.6	1.5	32.1	
- Steps and cat walks in house	L.S.	---	---	---	---	15.3	0.8	16.1	
- Pipe and accessories ϕ 300mm 870m	L.S.	---	---	---	---	267.2	14.1	281.3	
Sub Total						704.0	36.0	740.0	

TABLE G-11(2)

CONSTRUCTION COST OF CHINYAMATUMWA (II-1-6) PROJECT

(5-3)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
2-2 Installation on Site			(Z\$)	(Z\$)	(Z\$)				
- Construction of Pump House	sq.m	260	187.5	187.5	375.0	48.8	48.7	97.5	
- Equipment in pump house	L.S.	---	---	---	---	2.0	19.0	21.0	
- Trench excavation (soft, re-use)	cu.m	2,500	0.9	0.6	1.5	2.3	1.5	3.8	F/C 10%, L/C 90%
- Backfill of Trench	cu.m	2,160	0.5	1.5	2.0	1.1	3.2	4.3	Excavated soil to be wasted to Backfill
- Sand bed	cu.m	280	9.5	9.0	18.5	2.7	2.5	5.2	
- Pipe laying in trench	m	870	0.5	3.5	4.0	0.4	3.0	3.4	F/C 10%, L/C 90%
- Concrete for related structure	cu.m	---	187.0	153.0	340.0	---	---	---	
- Miscellaneous works (5%)	L.S.	---	---	---	---	2.7	4.1	6.8	
Sub Total (2-2)						60.0	82.0	142.0	
3. Night Storage Reservoir									
- Clearing and grubbing	ha	0.04	2,630	1,120	3,750	0.1	0	0.1	
- Stripping	cu.m	740	0.9	0.6	1.5	0.7	0.4	1.1	
- Excavation (soft - waste)	cu.m	---	2.9	1.6	4.5	---	---	---	Excavated soil to be wasted to Backfill
- Excavation (soft - re-use)	cu.m	2,620	0.9	0.6	1.5	2.4	1.5	3.9	Excavated soil to be applied to fill of dike
- Fill	cu.m	2,820	3.0	2.0	5.0	8.5	5.6	14.1	
- Steel pipe & valve φ300mm	m	137	178.0	77.0	255.0	24.4	10.5	34.9	
- R.C. pipe φ600mm	m	11	35.0	28.0	63.0	0.4	0.3	0.7	
- Sodding	sq.m	1,920	0	4.0	4.0	---	7.7	7.7	
- Miscellaneous works (5%)	L.S.	---	---	---	---	1.5	1.0	2.5	
Sub Total						38.0	27.0	65.0	
(B) Water Conveyance Facilities									
Total						842.0	152.0	994.0	F/C 85%, L/C 15%
Total Cost of Construction falling under jurisdiction of MEWRD						1,826.0	917.0	2,743.0	F/C 66%, L/C 34%

TABLE G-11 (2)

CONSTRUCTION COST OF CHINYAMATUMWA (II - 1.6) PROJECT

(5-4)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(C) Field Consolidation Works			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary Works	L. S.	---	---	---	---	18.9	19.7	38.6	on force account by AGRITEX [(2)+(3)+(4)+(5)+(6)]X5%
2. Land Grading Works									
- Clearing and grubbing	ha	4	2,250	1,500	3,750	9.0	6.0	15.0	
- Land levelling works	ha	35	322	215	537	11.3	7.5	18.8	
- Deep ploughing works	ha	35	53	35	88	1.9	1.2	3.1	
- Miscellaneous works (5%)	L. S.	---	---	---	---	1.1	0.7	1.8	
Sub Total						23.3	15.4	38.7	
3. Distribution Canal									
- Concrete canal									
Type A 700X500	m	---	28	28	56	---	---	---	
B 600X450	m	---	25	25	50	---	---	---	
C 500X400	m	1,200	22	22	44	26.4	26.4	52.8	
D 500X350	m	---	21	20	41	---	---	---	
E 400X350	m	1,200	19	18	37	22.8	21.6	44.4	
F 350X300	m	3,000	16	15	31	48.0	45.0	93.0	
- Drop structure (all types)	NO.	256	83	83	166	21.3	21.2	42.5	
- Box (off-take) (all types)	NO.	28	102	102	204	2.8	2.9	5.7	
- Road Crossings (7m long)	NO.	17	375	375	750	6.4	6.4	12.8	
- Miscellaneous works (5%)	L. S.	---	---	---	---	6.4	6.2	12.6	
Sub Total						134.1	129.7	263.8	
4. Drainage Canal									
- Drainage canal	m	6,200	5	6	11	31.0	37.2	68.2	
- Road Crossings (7m long)	NO.	27	375	375	750	10.2	10.1	20.3	
- Erosion control weir	NO.	370	48	48	96	17.7	17.8	35.5	
- Miscellaneous works (5%)	L. S.	---	---	---	---	2.9	3.3	6.2	
Sub Total						61.8	68.4	130.2	

TABLE G-11(2)

CONSTRUCTION COST OF CHINTAMATUMWA (II-1-6) PROJECT

(5-5)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
5. Farm Road			(Z\$)	(Z\$)	(Z\$)				
- Trunk road	m	5,700	10.5	12.5	23.0	59.8	71.3	131.1	gravel pavement
- Access road	m	---	10.5	12.5	23.0	---	---	0	gravel pavement
- Lateral road	m	3,300	8.0	10.0	18.0	26.4	33.0	59.4	gravel pavement
- Branch road	m	---	2.2	3.3	5.5	---	---	0	
- Miscellaneous works (5%)	L.S.	---	---	---	---	4.3	5.2	9.5	no pavement
Sub Total						90.5	109.5	200.0	
6. Farming Facilities									
- Farm store	sq. m	100	125	125	250	12.5	12.5	25.0	
- Office	sq. m	50	187	188	375	9.4	9.4	18.8	
- Multi-purpose hall	sq. m	100	187	188	375	18.7	18.8	37.5	
- Living quarter	sq. m	100	156	156	312	15.6	15.6	31.2	
- Blair Latrines	NO.	7	125	187	312	0.9	1.3	2.2	
- Fencing	m	4,500	1.0	2.5	3.5	4.5	11.3	15.8	
- Gate	NO.	8	198	240	438	1.6	1.9	3.5	
- Miscellaneous works (5%)	L.S.	---	---	---	---	3.2	3.5	6.7	
Sub Total						66.4	74.3	140.7	
(C) Field Consolidation works									
Total						395.0	417.0	812.0	F/C 49%, L/C 51%

TABLE G-11(3)

CONSTRUCTION COST OF MASHOKO (II - 2 - 1) PROJECT

(5-1)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(A) DAM			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary works	L.S.	---	---	---	---	51.0	43.0	94.0	((2)+(3)+(4)+(5))X5%
2. Foundation Treatment									
- Clearing and grubbing	ha.	3.0	2,630	1,120	3,750	7.9	3.4	11.3	
- Stripping	cu.m	12,000	0.9	0.6	1.5	10.8	7.2	18.0	
- Excavation (soft, waste)	cu.m	11,000	2.9	1.6	4.5	31.9	17.6	49.5	Excavated soil to be wasted to spoil area
- Excavation (soft, re-use)	cu.m	25,000	0.9	0.6	1.5	22.5	15.0	37.5	Excavated soil to be applied to Embankment of shell
- Drilling and Grouting works	m	1,035	41.5	41.5	83.0	43.0	42.9	85.9	
- Miscellaneous works (5%)	L.S.	---	---	---	---	5.9	3.9	9.8	
Sub Total						122.0	90.0	212.0	
3. Dam Embankment									
- Embankment of Core	cu.m	35,000	4.0	2.5	6.5	140.0	87.5	227.5	
- Embankment of Shell	cu.m	115,000	3.0	2.0	5.0	345.0	230.0	575.0	
- Vertical filter drain	cu.m	5,500	6.0	14.0	20.0	33.0	77.0	110.0	(Materials to be collected in the river)
- Horizontal filter drain	cu.m	1,000	5.0	5.0	10.0	5.0	5.0	10.0	(transported within 3Km)
- Toe drain (Rockfill)	cu.m	2,500	13.8	9.2	23.0	34.5	23.0	57.5	
- Riprap (Dry stone pitching)	cu.m	3,000	11.0	16.5	27.5	33.0	49.5	82.5	
- Sodding	sq.m	11,900	0	4.0	4.0	0.0	47.6	47.6	
- Miscellaneous works (5%)	L.S.	---	---	---	---	29.5	25.4	54.9	
Sub Total						620.0	545.0	1,165.0	
4. Spillway									
- Clearing and grubbing	ha	2.0	2,630	1,120	3,750	5.3	2.2	7.5	
- Stripping	cu.m	7,500	0.9	0.6	1.5	6.8	4.5	11.3	
- Excavation (Soft, re-use)	cu.m	31,200	0.9	0.6	1.5	28.1	18.7	46.8	Excavated soil to be applied to Embankment of shell
- Excavation (hard)	cu.m	1,500	23.8	10.2	34.0	35.7	15.3	51.0	
- Mass and Plain Concrete	cu.m	610	97.0	97.0	194.0	59.2	59.2	118.4	
- Stone Masonry	cu.m	2,220	42.5	42.5	85.0	94.4	94.4	188.8	
- Riprap (dry)	cu.m	900	11.0	16.5	27.5	9.9	14.9	24.8	
- Miscellaneous works (5%)	L.S.	---	---	---	---	11.6	10.8	22.4	
Sub Total						251.0	220.0	471.0	

TABLE G-11 (3)

CONSTRUCTION COST OF MASHOKO (II - 2 - 1) PROJECT

(5-2)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
5. Intake Facilities									
— Excavation (soft)	cu. m	70	2.9	1.6	4.5	0.2	0.1	0.3	
— Excavation (hard)	cu. m	20	23.8	10.2	34.0	0.5	0.2	0.7	
— Fill and back fill	cu. m	40	3.0	2.0	5.0	0.1	0.1	0.2	
— Reinforced Concrete	cu. m	50	187.0	153.0	340.0	9.4	7.7	17.1	
— Asbestos pipe $\ell=70m$ 200mm dia.	L.S.	—	—	—	—	0.5	1.0	1.5	
— Flap gate 200mm dia.	Kg	850	—	—	—	1.3	0.9	2.2	
— Butterfly gate 100mm dia.	L.S.	—	—	—	—	3.8	0.2	4.0	
— Screen 1.60mX1.22m 1 NO.	Kg	150	—	—	—	0.2	0.2	0.4	
— Guard and Maintenance House	sq. m	20	157.5	157.5	315.0	3.2	3.1	6.3	
— Miscellaneous works (5%)	L.S.	—	—	—	—	0.8	0.5	1.3	
Sub Total						20.0	14.0	34.0	
(A) Dam						1,064.0	912.0	1,976.0	F/C 54%, L/C 46%
(B) WATER CONVEYANCE FACILITIES									
1. Site preparation and Temporary works									
2. Canal Work									
— Clearing and grubbing	ha	0.4	2,630	1,120	3,750	1.1	0.4	1.5	
— Stripping	cu. m	1,600	0.9	0.6	1.5	1.4	1.0	2.4	
— Excavation (soft, re-use)	cu. m	320	0.9	0.6	1.5	0.3	0.2	0.5	soil to be applied to fill
— Excavation (hard)	cu. m	20	23.8	10.2	34.0	0.5	0.2	0.7	
— Fill (canal and road)	cu. m	3,154	2.5	1.5	4.0	7.9	4.7	12.6	
— Concrete lining	m	800	5.0	6.0	11.0	4.0	4.8	8.8	
— R. C. pipe $\phi 600mm$	m	—	35.0	28.0	63.0	—	—	—	
— Sand bed, Gravel bed	cu. m	40	9.5	9.0	18.5	0.4	0.3	0.7	
— Concrete for related structure	cu. m	9	187.0	153.0	340.0	1.7	1.3	3.0	
— Gravel pavement	sq. m	3,200	1.5	1.5	3.0	4.8	4.8	9.6	
— Fencing works	m	1,600	1.0	2.5	3.5	1.6	4.0	5.6	
— Miscellaneous works (5%)	L.S.	—	—	—	—	1.3	1.3	2.6	
Sub Total						25.0	23.0	48.0	

TABLE G-11(3)

CONSTRUCTION COST OF MASHOKO (II - 2 - 1) PROJECT

(5-3)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C (Z\$)	L/C (Z\$)	Total (Z\$)	F/C	L/C	Total	
3. Night Storage Reservoir									
- Clearing and grubbing	ha	0.02	2.630	1.120	3.750	2.7	1.1	3.8	
- Stripping	cu. m	420	0.9	0.6	1.5	0.4	0.2	0.6	
- Excavation (soft · waste)	cu. m	---	2.9	1.6	4.5	---	---	0	Excavated soil: To be wasted on spoil area
- Excavation (soft · re-use)	cu. m	970	0.9	0.6	1.5	0.9	0.6	1.5	Excavated soil: to be applied to fill of dike
- Fill	cu. m	2,350	3.0	2.0	5.0	7.1	4.7	11.8	
- Concrete flume 25×20	m	107	11.5	7.5	19.0	1.2	0.8	2.0	
- R. C. pipe φ600mm	m	26	35.0	28.0	63.0	0.9	0.7	1.6	
- Sodding	sq. m	1,560	0	4.0	4.0	0.0	6.2	6.2	
- Miscellaneous works (5%)	L. S.	---	---	---	---	0.8	0.7	1.4	
Sub Total						14.0	15.0	29.0	
(B) Water Conveyance Facilities									
Total						41.0	40.0	81.0	F/C 53%, L/C 47%
Total Cost of Construction falling under jurisdiction of MEWRD						1,105.0	952.0	2,057.0	F/C 54%, L/C 46%

TABLE G-11 (3)

CONSTRUCTION COST OF MASHOKO (II - 2-1) PROJECT

(5-4)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(C) Field Consolidation Works			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary Works	L.S.	---	---	---	---	9.0	9.0	18.0	on force account by AGRITEX [(2)+(3)+(4)+(5)+(6)]×5%
2. Land Grading Works									
-- Clearing and grubbing	ha	2	2,250	1,500	3,750	4.5	3.0	7.5	
-- Land levelling works	ha	15	322	215	537	4.9	3.2	8.1	
-- Deep ploughing works	ha	15	53	35	88	0.8	0.5	1.3	
-- Miscellaneous works (5%)	L.S.	---	---	---	---	0.5	0.3	0.8	
Sub Total						10.7	7.0	17.7	
3. Distribution Canal									
-- Concrete canal									
Type A 700×500	m	---	28	28	56	---	---	---	
B 600×450	m	---	25	25	50	---	---	---	
C 500×400	m	---	22	22	44	---	---	---	
D 500×350	m	---	21	20	41	---	---	---	
E 400×350	m	1,450	19	18	37	27.6	26.1	53.7	
F 350×300	m	500	16	15	31	8.0	7.5	15.5	
-- Drop structure (all types)	NO.	---	83	83	166	---	---	---	
-- Box (off-take) (all types)	NO.	7	102	102	204	0.7	0.7	1.4	
-- Road Crossings (7m long)	NO.	3	375	375	750	1.2	1.1	2.3	
-- Miscellaneous works (5%)	L.S.	---	---	---	---	1.8	1.8	3.6	
Sub Total						39.3	37.2	76.5	
4. Drainage Canal									
-- Drainage canal	m	3,500	5	6	11	17.5	21.0	38.5	
-- Road Crossings (7m long)	NO.	6	375	375	750	2.2	2.3	4.5	
-- Erosion control weir	NO.	---	48	48	96	---	---	---	
-- Miscellaneous works (5%)	L.S.	---	---	---	---	1.0	1.2	2.2	
Sub Total						20.7	24.5	45.2	

TABLE G-11(3)

CONSTRUCTION COST OF MASHOKO (II - 2-1) PROJECT

(5-5)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total (Z\$)	F/C	L/C	Total	
5. Farm Road									
- Trunk road	m	2,000	10.5	12.5	23.0	21.0	25.0	46.0	gravel pavement
- Access road	m	1,000	10.5	12.5	23.0	10.5	12.5	23.0	gravel pavement
- Lateral road	m	1,300	8.0	10.0	18.0	10.4	13.0	23.4	gravel pavement
- Branch road	m	---	2.2	3.3	5.5	---	---	---	no pavement
- Miscellaneous works (5%)	L.S.	---	---	---	---	2.1	2.5	4.6	
Sub Total						44.0	53.0	97.0	
6. Farming Facilities									
- Farm store	sq.m	80	125	125	250	10.0	10.0	20.0	
- Office	sq.m	50	187	188	375	9.4	9.4	18.8	
- Multi-purpose hall	sq.m	100	187	188	375	18.7	18.8	37.5	
- Living quarter	sq.m	100	156	156	312	15.6	15.6	31.2	
- Blair Latrines	NO.	4	125	187	312	0.5	0.7	1.2	
- Fencing	m	2,200	1.0	2.5	3.5	2.2	5.5	7.7	
- Gate	NO.	5	198	240	438	1.0	1.2	2.2	
- Miscellaneous works (5%)	L.S.	---	---	---	---	2.9	3.1	6.0	
Sub Total						60.3	64.3	124.6	
(C) Field Consolidation works									
Total						184.0	195.0	379.0	F/C 48%, L/C 52%

TABLE G-11 (4)

CONSTRUCTION COST OF MUNJANGANJA (IV - 4 - 10) PROJECT

(5-1)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(A) DAM			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary works	L. S.	—	—	—	—	51.0	44.0	95.0	[(2)+(3)+(4)+(5)]x5%
2. Foundation Treatment									
— Clearing and grubbing	ha.	2.4	2,630	1,120	3,750	6.3	2.7	9.0	
— Stripping	cu. m	11,800	9.9	0.6	1.5	10.6	7.1	17.7	
— Excavation (soft, waste)	cu. m	8,100	2.9	1.6	4.5	23.5	13.0	36.5	Excavated soil to be wasted to spoil area
— Excavation (soft, re-use)	cu. m	18,800	0.9	0.6	1.5	16.9	11.3	28.2	Excavated soil to be applied to Embankment of shell
— Drilling and Grouting works	m	930	41.5	41.5	83.0	38.6	38.6	77.2	
— Miscellaneous works (5%)	L. S.	—	—	—	—	5.1	3.3	8.4	
Sub Total						101.0	76.0	177.0	
3. Dam Embankment									
— Embankment of Core	cu. m	41,600	4.0	2.5	6.5	166.4	104.0	270.4	
— Embankment of Shell	cu. m	102,700	3.0	2.0	5.0	308.1	205.4	513.5	
— Vertical filter drain	cu. m	5,000	6.0	14.0	20.0	30.0	70.0	100.0	Materials to be collected in the river.
— Horizontal filter drain	cu. m	—	5.0	5.0	10.0	—	—	—	transported within 3Km
— Toe drain (Rockfill)	cu. m	800	13.8	9.2	23.0	11.0	7.4	18.4	
— Riprap (Dry stone pitching)	cu. m	2,900	11.0	16.5	27.5	31.9	47.9	79.8	
— Sodding	sq. m	9,800	0	4.0	4.0	0.0	39.2	39.2	
— Miscellaneous works (5%)	L. S.	—	—	—	—	27.6	24.1	51.7	
Sub Total						575.0	498.0	1,073.0	
4. Spillway									
— Clearing and grubbing	ha	5.0	2,630	1,120	3,750	13.2	5.6	18.8	
— Stripping	cu. m	22,400	0.9	0.6	1.5	20.2	13.4	33.6	
— Excavation (Soft, re-use)	cu. m	74,000	0.9	0.6	1.5	66.6	44.4	111.0	Materials to be applied to Embankment of shell.
— Excavation (hard)	cu. m	200	23.8	10.2	34.0	4.8	2.0	6.8	
— Mass and Plain Concrete	cu. m	930	97.0	97.0	194.0	90.2	90.2	180.4	
— Stone Masonry	cu. m	2,590	42.5	42.5	85.0	110.1	110.1	220.2	
— Riprap (dry)	cu. m	860	11.0	16.5	27.5	9.5	14.2	23.7	
— Miscellaneous works (5%)	L. S.	—	—	—	—	15.4	14.1	29.5	
Sub Total						330.0	294.0	624.0	

TABLE G-11 (4)

CONSTRUCTION COST OF MUNJANGANJA (W-4-10) PROJECT

(5-2)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
			(Z\$)	(Z\$)	(Z\$)				
5. Intake Facilities									
- Excavation (soft)	cu.m	70	2.9	1.6	4.5	0.2	0.1	0.3	
- Excavation (hard)	cu.m	20	23.8	10.2	34.0	0.5	0.2	0.7	
- Fill and back fill	cu.m	40	3.0	2.0	5.0	0.1	0.1	0.2	
- Reinforced Concrete	cu.m	50	187.0	153.0	340.0	9.4	7.7	17.1	
- Asbestos pipe ϕ = 55mm 250mm dia.	L.S.	---	---	---	---	0.5	1.2	1.7	
- Flap gate 250mm dia.	Kg	850	---	---	---	1.3	0.9	2.2	
- Butterfly gate 150mm dia.	L.S.	---	---	---	---	5.4	0.3	5.7	
- Screen	Kg	150	---	---	---	0.2	0.2	0.4	
- Guard and Maintenance House	sq.m	20	157.5	157.5	315.0	3.2	3.1	6.3	
- Miscellaneous works (5%)	L.S.	---	---	---	---	1.2	0.2	1.4	
Sub Total						22.0	14.0	36.0	
(A) Dam						1,079.0	926.0	2,005.0	F/C 54%, L/C 46%
(B) WATER CONVEYANCE FACILITIES									
1. Site preparation and Temporary works									
2. Canal Work									
- Clearing and grubbing	ha	2.4	2,630	1,120	3,750	6.3	2.7	9.0	
- Stripping	cu.m	9,440	0.9	0.6	1.5	8.5	5.7	14.2	soil to be applied to fill
- Excavation (soft, re-use)	cu.m	3,980	0.9	0.6	1.5	3.6	2.4	6.0	
- Excavation (hard)	cu.m	200	23.8	10.2	34.0	4.8	2.0	6.8	
- Fill (canal and road)	cu.m	7,090	2.5	1.5	4.0	17.7	10.6	28.3	
- Concrete lining	m	4,720	7.0	8.0	15.0	33.0	37.8	70.8	
- R.C. pipe ϕ 600mm	m	52	35.0	28.0	63.0	1.8	1.4	3.2	
- Sand bed, Gravel bed	cu.m	310	9.5	9.0	18.5	2.9	2.8	5.7	
- Concrete for related structure	cu.m	27	187.0	153.0	340.0	5.0	4.1	9.1	
- Gravel pavement	sq.m	18,900	1.5	1.5	3.0	28.3	28.3	56.6	
- Fencing works	m	9,500	1.0	2.5	3.5	9.5	23.7	33.2	
- Miscellaneous works (5%)	L.S.	---	---	---	---	5.6	5.5	11.1	
Sub Total						127.0	127.0	254.0	

TABLE G-11(4)

CONSTRUCTION COST OF MUNJANGANJA (IV - 4 - 10) PROJECT

(5-3)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
3. Night Storage Reservoir			(Z\$)	(Z\$)	(Z\$)				
- Clearing and grubbing	ha	0.04	2,630	1,120	3,750	0.1	0.0	0.1	
- Stripping	cu. m	740	0.9	0.6	1.5	0.7	0.4	1.1	
- Excavation (soft waste)	cu. m	—	2.9	1.6	4.5	—	—	0	Excavated soil to be wasted to spoil area
- Excavation (soft re-use)	cu. m	2,610	0.9	0.6	1.5	2.3	1.6	3.9	Excavated soil to be applied to fill of dike
- Fill	cu. m	2,980	3.0	2.0	5.0	8.9	6.0	14.9	
- Concrete flume 40x35	m	187	18.5	12.5	31.0	2.5	1.7	4.2	
- R. C. pipe φ600mm	m	26	35.0	28.0	63.0	0.9	0.7	1.6	
- Sodding	sq. m	2,020	0	4.0	4.0	0.0	8.1	8.1	
- Miscellaneous works (5%)	L. S.	—	—	—	—	0.6	0.5	1.1	
Sub Total						16.0	19.0	35.0	
(B) Water Conveyance Facilities									
Total						150.0	153.0	303.0	F/C 54%, L/C 46%
Total Cost of Construction falling under jurisdiction of MEWRD						1229.0	1,079.0	2,308.0	F/C 54%, L/C 46%

TABLE G-11 (4)

CONSTRUCTION COST OF MUNJANGANJA (IV - 4 - 10) PROJECT

(5-4)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(C) Field Consolidation Works			(Z\$)	(Z\$)	(Z\$)				on force account by AGRITEX
1. Site preparation and Temporary Works	L. S.	—	—	—	—	16.4	17.9	34.3	[(2)+(3)+(4)+(5)+(6)]×5%
2. Land Grading Works									
— Clearing and grubbing	ha	4	2,250	1,500	3,750	9.0	6.0	15.0	
— Land levelling works	ha	38	322	215	537	10.6	7.1	17.7	
— Deep ploughing works	ha	33	53	35	88	1.7	1.2	2.9	
— Miscellaneous works (5%)	L. S.	—	—	—	—	1.1	0.7	1.8	
Sub Total						22.4	15.0	37.4	
3. Distribution Canal									
— Concrete canal									
Type A 700×500	m	—	28	28	56	—	—	0	
B 600×450	m	—	25	25	50	—	—	0	
C 500×400	m	1,150	22	22	44	25.3	25.3	50.6	
D 500×350	m	1,200	21	20	41	25.2	24.0	49.2	
E 400×350	m	150	19	18	37	2.9	2.7	5.6	
F 350×300	m	2,400	16	15	31	38.4	36.0	74.4	
— Drop structure (all types)	NO.	117	83	83	166	9.7	9.7	19.4	
— Box (off-take) (all types)	NO.	21	102	102	204	2.2	2.1	4.3	
— Road Crossings (7m long)	NO.	9	375	375	750	3.4	3.4	6.8	
— Miscellaneous works (5%)	L. S.	—	—	—	—	5.3	5.2	10.5	
Sub Total						112.4	108.4	220.8	
4. Drainage Canal									
— Drainage canal	m	6,400	5	6	11	32.0	38.4	70.4	
— Road Crossings (7m long)	NO.	18	375	375	750	6.7	6.8	13.5	
— Erosion control weir	NO.	190	48	48	96	9.1	9.1	18.2	
— Miscellaneous works (5%)	L. S.	—	—	—	—	2.4	2.7	5.1	
Sub Total						50.2	57.0	107.2	

TABLE G-11 (4)

CONSTRUCTION COST OF MUNJANGANJA (IV - 4 - 10) PROJECT

(5-5)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit: Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
5. Farm Road									
- Trunk road	m	4,200	(Z\$)	(Z\$)	(Z\$)				
			10.5	12.5	23.0	44.1	52.5	96.6	gravel pavement
- Access road	m	700	10.5	12.5	23.0	7.3	8.8	16.1	gravel pavement
- Lateral road	m	2,900	8.0	10.0	18.0	23.2	29.0	52.2	gravel pavement
- Branch road	m	---	2.2	3.3	5.5	---	---	---	no pavement
- Miscellaneous works (5%)	L. S.	---	---	---	---	3.7	4.5	8.2	
Sub Total						78.3	94.8	173.1	
6. Farming Facilities									
- Farm store	sq. m	100	125	125	250	12.5	12.5	25.0	
- Office	sq. m	50	187	188	375	9.4	9.4	18.8	
- Multi - purpose hall	sq. m	100	187	188	375	18.7	18.8	37.5	
- Living quarter	sq. m	100	156	156	312	15.6	15.6	31.2	
- Blair Latrines	NO.	7	125	187	312	8.7	13.1	21.8	
- Fencing	m	3,650	1.0	2.5	3.5	3.7	9.1	12.8	
- Gate	NO.	6	198	240	438	1.2	1.4	2.6	
- Miscellaneous works (5%)	L. S.	---	---	---	---	3.5	4.0	7.5	
Sub Total						73.3	83.9	157.2	
(C) Field Consolidation works									
Total						353.0	377.0	730.0	F/C 48%, L/C 52%

TABLE G-11(5)

CONSTRUCTION COST OF MAGUDU (V-3-3) PROJECT

(5-1)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(A) DAM			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary works	L. S.	---	---	---	---	46.0	40.0	86.0	[(2)+(3)+(4)+(5)]X5%
2. Foundation Treatment									
- Clearing and grubbing	ha.	2.0	2,630	1,120	3,750	5.3	2.2	7.5	
- Stripping	cu.m	9,900	0.9	0.6	1.5	8.9	5.9	14.8	
- Excavation (soft, waste)	cu.m	9,500	2.9	1.6	4.5	27.6	15.2	42.8	Excavated soil to be used as spoil area.
- Excavation (soft, re-use)	cu.m	22,100	0.9	0.6	1.5	19.9	13.3	33.2	Excavated soil to be applied in Embankment of shell
- Drilling and Grouting works	m	530	41.5	41.5	83.0	22.0	22.0	44.0	
- Miscellaneous works (5%)	L. S.	---	---	---	---	4.3	3.4	7.7	
Sub Total						88.0	62.0	150.0	
3. Dam Embankment									
- Embankment of Core	cu.m	36,300	4.0	2.5	6.5	145.2	90.8	236.0	
- Embankment of Shell	cu.m	99,000	3.0	2.0	5.0	297.0	198.0	495.0	
- Vertical filter drain	cu.m	3,600	6.0	14.0	20.0	21.6	50.4	72.0	Materials to be collected in the river.
- Horizontal filter drain	cu.m	---	5.0	5.0	10.0	---	---	---	transported within 3Km
- Toe drain (Rockfill)	cu.m	1,800	13.8	9.2	23.0	24.8	16.6	41.4	
- Riprap (Dry stone pitching)	cu.m	3,900	11.0	16.5	27.5	42.9	64.4	107.3	
- Sodding	sq.m	8,900	0	4.0	4.0	0.0	35.6	35.6	
- Miscellaneous works (5%)	L. S.	---	---	---	---	26.5	23.2	49.7	
Sub Total						558.0	479.0	1,037.0	
4. Spillway									
- Clearing and grubbing	ha	1.0	2,630	1,120	3,750	2.6	1.1	3.7	
- Stripping	cu.m	4,400	0.9	0.6	1.5	4.0	2.6	6.6	
- Excavation (Soft, re-use)	cu.m	15,000	0.9	0.6	1.5	13.5	9.0	22.5	Excavated soil to be applied in Embankment of shell.
- Excavation (hard)	cu.m	900	23.8	10.2	34.0	21.4	9.2	30.6	
- Mass and Plain Concrete	cu.m	640	97.0	97.0	194.0	62.1	62.1	124.2	
- Stone Masonry	cu.m	2,400	42.5	42.5	85.0	102.0	102.0	204.0	
- Riprap (dry)	cu.m	2,000	11.0	16.5	27.5	22.0	33.0	55.0	
- Miscellaneous works (5%)	L. S.	---	---	---	---	11.4	11.0	22.4	
Sub Total						239.0	230.0	469.0	

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
			(Z\$)	(Z\$)	(Z\$)				
5. Intake Facilities									
- Excavation (soft)	cu. m	100	2.9	1.6	4.5	0.3	0.2	0.5	
- Excavation (hard)	cu. m	30	23.8	10.2	34.0	0.7	0.3	1.0	
- Fill and back fill	cu. m	70	3.0	2.0	5.0	0.2	0.1	0.3	
- Reinforced Concrete	cu. m	77	187.0	153.0	340.0	14.4	11.8	26.2	
- Asbestos pipe $\ell = 85\text{m}$ 300mm dia.	L. S.	—	—	—	—	1.1	2.6	3.7	
- flap gate 300mm dia.	Kg	850	—	—	—	1.3	0.9	2.2	
- Butterfly gate 200mm dia.	L. S.	—	—	—	—	6.3	0.3	6.6	
- Screen	Kg	150	—	—	—	0.2	0.2	0.4	
- Guard and Maintenance House	sq. m	20	157.5	157.5	315.0	3.2	3.1	6.3	
- Miscellaneous works (5%)	L. S.	—	—	—	—	1.3	0.5	1.8	
Sub Total						29.0	20.0	49.0	
(A) Dam						960.0	831.0	1,791.0	F/C 54%, L/C 46%
(B) WATER CONVEYANCE FACILITIES									
1. Site preparation and Temporary works									
2. Canal Work									
- Clearing and grubbing	ha	4.0	2,630	1,120	3,750	10.5	4.5	15.0	
- Stripping	cu. m	15,900	0.9	0.6	1.5	14.3	9.5	23.8	
- Excavation (soft, re-use)	cu. m	3,560	0.9	0.6	1.5	3.2	2.1	5.3	soil to be applied to fill
- Excavation (hard)	cu. m	190	23.8	10.2	34.0	4.5	1.9	6.4	
- Fill (canal and road)	cu. m	21,400	2.5	1.5	4.0	53.5	32.1	85.6	
- Concrete lining	m	7,940	9.0	10.0	19.0	71.5	79.4	150.9	
- R. C. pipe $\phi 600\text{mm}$	m	60	35.0	28.0	63.0	2.1	1.7	3.8	
- Sand bed, Gravel bed	cu. m	600	9.5	9.0	18.5	5.7	5.4	11.1	
- Concrete for related structure	cu. m	50	187.0	153.0	340.0	9.4	7.6	17.0	
- Gravel pavement	sq. m	31,800	1.5	1.5	3.0	47.7	47.7	95.4	
- Fencing works	m	15,880	1.0	2.5	3.5	15.9	39.7	55.6	
- Miscellaneous works (5%)	L. S.	—	—	—	—	11.7	11.4	23.1	
Sub Total						250.0	243.0	493.0	

TABLE G-11(5)

CONSTRUCTION COST OF MAGUDU (V-3-3) PROJECT

(5-3)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
			(Z\$)	(Z\$)	(Z\$)				
3. Night Storage Reservoir									
- Clearing and grubbing	ha	0.05	2,630	1,120	3,750	0.1	0.1	0.2	
- Stripping	cu.m	980	0.9	0.6	1.5	0.9	0.6	1.5	
- Excavation (soft waste)	cu.m	50	2.9	1.6	4.5	0.1	0.1	0.2	Excavated soil to be wasted to spoil area
- Excavation (soft re-use)	cu.m	3,420	0.9	0.6	1.5	3.1	2.0	5.1	Excavated soil to be applied to fill of dike
- Fill	cu.m	3,420	3.0	2.0	5.0	10.3	6.8	17.1	
- Concrete flume 50x35	m	160	21.0	14.0	35.0	3.3	2.3	5.6	
- R. C. pipe φ600mm	m	26	35.0	28.0	63.0	0.9	0.7	1.6	
- Sodding	sq.m	2,320	0	4.0	4.0	0.0	9.3	9.3	
- Miscellaneous works (5%)	L.S.	---	---	---	---	1.3	1.1	2.4	
Sub Total						20.0	23.0	43.0	
(B) Water Conveyance Facilities									
Total						283.0	279.0	562.0	F/C 55%, L/C 45%
Total Cost of Construction falling under jurisdiction of MEWRD						1,243.0	1,110.0	2,353.0	F/C 54%, L/C 46%

TABLE G-11 (5)

CONSTRUCTION COST OF MAGUDU (V-3-3) PROJECT

(5-4)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(C) Field Consolidation Works									
1. Site preparation and Temporary Works	L.S.	---	---	---	---	24.6	25.0	49.6	on force account by AGRITEX
2. Land Grading Works									
- Clearing and grubbing	ha	6	2,250	1,500	3,750	13.5	9.0	22.5	
- Land levelling works	ha	51	322	215	537	16.4	11.0	27.4	
- Deep ploughing works	ha	51	53	35	88	2.7	1.8	4.5	
- Miscellaneous works (5%)	L.S.	---	---	---	---	1.6	1.1	2.7	
Sub Total						34.2	22.9	57.1	
3. Distribution Canal									
- Concrete canal									
Type A 700X500	m	---	28	28	56	---	---	---	
B 600X450	m	1,450	25	25	50	36.2	36.3	72.5	
C 500X400	m	850	22	22	44	18.7	18.7	37.4	
D 500X350	m	400	21	20	41	8.4	8.0	16.4	
E 400X350	m	1,950	19	18	37	37.1	35.1	72.2	
F 350X300	m	3,800	16	15	31	60.8	57.0	117.8	
- Drop structure (all types)	NO.	225	83	83	166	18.7	18.7	37.4	
- Box (off-take) (all types)	NO.	32	102	102	204	3.2	3.3	6.5	
- Road Crossings (7m long)	NO.	19	375	375	750	7.2	7.1	14.3	
- Miscellaneous works (5%)	L.S.	---	---	---	---	9.5	9.2	18.7	
Sub Total						199.8	193.4	393.2	
4. Drainage Canal									
- Drainage canal	m	9,600	5	6	11	48.0	57.6	105.6	
- Road Crossings (7m long)	NO.	18	375	375	750	6.7	6.8	13.5	
- Erosion control weir	NO.	290	48	48	96	13.9	13.9	27.8	
- Miscellaneous works (5%)	L.S.	---	---	---	---	3.4	3.9	7.3	
Sub Total						72.0	82.2	154.2	

TABLE G-11 (5)

CONSTRUCTION COST OF MAGUDU (V-3-3) PROJECT

(5-5)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
5. Farm Road			(Z\$)	(Z\$)	(Z\$)				
- Trunk road	m	5,700	10.5	12.5	23.0	59.8	71.3	131.1	gravel pavement
- Access road	m	—	10.5	12.5	23.0	—	—	—	gravel pavement
- Lateral road	m	4,500	8.0	10.0	18.0	36.0	45.0	81.0	gravel pavement
- Branch road	m	—	2.2	3.3	5.5	—	—	—	no pavement
- Miscellaneous works (5%)	L. S.	—	—	—	—	4.8	5.8	10.6	
Sub Total						100.6	122.1	222.7	
6. Farming Facilities									
- Farm store	sq. m	150	125	125	250	18.7	18.8	37.5	
- Office	sq. m	50	187	188	375	9.4	9.4	18.8	
- Multi - purpose hall	sq. m	100	187	188	375	18.7	18.8	37.5	
- Living quarter	sq. m	100	156	156	312	15.6	15.6	31.2	
- Blair Latrines	NO.	11	125	187	312	1.4	2.0	3.4	
- Fencing	m	4,250	1.0	2.5	3.5	4.3	10.6	14.9	
- Gate	NO.	6	198	240	438	1.2	1.4	2.6	
- Miscellaneous works (5%)	L. S.	—	—	—	—	3.5	3.8	7.3	
Sub Total						72.8	80.4	153.2	
(C) Field Consolidation works									
Total						504.0	526.0	1,030.0	F/C 49%, L/C 51%

TABLE G-11 (6)

CONSTRUCTION COST OF MABVUTE (VII-1-12) PROJECT

(5-1)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
(A) DAM			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary works	L. S.	---	---	---	---	53.0	40.0	93.0	[(2)+(3)+(4)+(5)]X5%
2. Foundation Treatment									
- Clearing and grubbing	ha.	2.4	2,630	1,120	3,750	6.3	2.7	9.0	
- Stripping	cu. m	11,700	0.9	0.6	1.5	10.5	7.0	17.5	
- Excavation (soft, waste)	cu. m	14,300	2.9	1.6	4.5	41.5	22.9	64.4	Excavated soil to be used to soil area
- Excavation (soft, re-use)	cu. m	33,400	0.9	0.6	1.5	30.1	20.0	50.1	Excavated soil to be applied to Embankment of shell
- Drilling and Grouting works	m	1,390	41.5	41.5	83.0	57.7	57.7	115.4	
- Miscellaneous works (5%)	L. S.	---	---	---	---	6.9	5.7	12.6	
Sub Total						153.0	116.0	269.0	
3. Dam Embankment									
- Embankment of Core	cu. m	47,600	4.0	2.5	6.5	190.4	119.0	309.4	
- Embankment of Shell	cu. m	99,600	3.0	2.0	5.0	298.8	199.2	498.0	
- Vertical filter drain	cu. m	4,700	6.0	14.0	20.0	28.2	65.8	94.0	Materials to be collected in the river.
- Horizontal filter drain	cu. m	---	5.0	5.0	10.0	---	---	---	(transported within 3Km)
- Toe drain (Rockfill)	cu. m	1,000	13.8	9.2	23.0	13.8	9.2	23.0	
- Riprap (Dry stone pitching)	cu. m	5,800	11.0	16.5	27.5	63.8	95.7	159.5	
- Sodding	sq. m	9,200	0	4.0	4.0	0.0	36.8	36.8	
- Miscellaneous works (5%)	L. S.	---	---	---	---	30.0	26.3	56.3	
Sub Total						625.0	552.0	1,177.0	
4. Spillway									
- Clearing and grubbing	ha	2.0	2,630	1,120	3,750	5.3	2.2	7.5	
- Stripping	cu. m	6,800	0.9	0.6	1.5	6.1	4.1	10.2	
- Excavation (Soft, re-use)	cu. m	25,600	0.9	0.6	1.5	23.0	15.4	38.4	Excavated soil to be applied to Embankment of shell
- Excavation (hard)	cu. m	5,300	23.8	10.2	34.0	126.1	54.1	180.2	
- Mass and Plain Concrete	cu. m	40	97.0	97.0	194.0	3.9	3.9	7.8	
- Stone Masonry	cu. m	620	42.5	42.5	85.0	26.4	26.4	52.8	
- Riprap (dry)	cu. m	---	11.0	16.5	27.5	---	---	---	
- Miscellaneous works (5%)	L. S.	---	---	---	---	9.2	4.9	14.1	
Sub Total						200.0	111.0	311.0	

TABLE G-11 (6)

CONSTRUCTION COST OF MABVUTE (VII-1-12) PROJECT

(5-2)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
			(Z\$)	(Z\$)	(Z\$)				
5. Intake Facilities									
- Excavation (soft)	cu. m	180	2.9	1.6	4.5	0.5	0.3	0.8	
- Excavation (hard)	cu. m	20	23.8	10.2	34.0	0.5	0.2	0.7	
- Fill and back fill	cu. m	110	3.0	2.0	5.0	0.3	0.2	0.5	
- Reinforced Concrete	cu. m	96	187.0	153.0	340.0	18.0	14.7	32.7	
- Asbestos pipe ϕ = 85mm 400mm dia.	L.S.	—	—	—	—	1.7	3.8	5.5	
- Sluice gate 400mm dia.	L.S.	—	—	—	—	5.4	0.3	5.7	
- Submarged disk gate 250mm dia.	L.S.	—	—	—	—	43.4	2.2	45.6	
- Flap Gate	L.S.	—	—	—	—	1.8	1.2	3.0	with screen 1200 Kg
- Miscellaneous works (5%)	L.S.	—	—	—	—	3.4	1.1	4.5	
Sub Total						75.0	24.0	99.0	
(A) Dam						1,106.0	843.0	1,949.0	F/C 57%, L/C 43%
(B) WATER CONVEYANCE FACILITIES									
1. Site preparation and Temporary works									
L.S.									Pump and pipeline system
						6.0	7.0	13.0	[(2-2)+(3)]X5%
2. Pump and Pipeline System									
2-1 Clearing and grubbing									
- Pumps and accessories (3 sets)	L.S.	—	—	—	—	89.6	4.5	94.1	
- Pump starter and accessories	L.S.	—	—	—	—	7.5	0.4	7.9	
- Valves	L.S.	—	—	—	—	21.7	1.1	22.8	
- Pipes in pump house	L.S.	—	—	—	—	22.4	1.1	23.5	
- Generator for Pumps	L.S.	—	—	—	—	217.2	10.9	228.1	
- Generator for control and starter	L.S.	—	—	—	—	17.0	0.9	17.9	
- Fuel tank and piping materials	L.S.	—	—	—	—	14.9	0.7	15.6	
- Electric cubicle and wiring material	L.S.	—	—	—	—	209.0	10.5	219.5	
- Crane and accessories (2 sets)	L.S.	—	—	—	—	29.8	1.5	31.3	
- Steps and cat walks in house	L.S.	—	—	—	—	14.9	0.7	15.6	
- Pipe and accessories ϕ 400mm, 860m	L.S.	—	—	—	—	385.0	19.7	404.7	
Sub Total (2-1)						1,029.0	52.0	1,081.0	

TABLE G-11(6)

CONSTRUCTION COST OF MABVUTE (VII-1-12) PROJECT

(5-3)

Construction falling under jurisdiction of MEWRD

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
			(Z\$)	(Z\$)	(Z\$)				
2-2 Installation on Site									
- Construction of Pump House	sq.m	230	187.5	187.5	375.0	52.5	52.5	105.0	
- Equipment in pump house	L.S.					2.0	20.0	22.0	F/C 10%, L/C 90%
- Trench excavation (soft.re - use)	cu.m	2,330	0.9	0.6	1.5	2.1	1.4	3.5	Excavated soil to be applied top backfill
- Backfill of trench	cu.m	1,990	0.5	1.5	2.0	1.0	3.0	4.0	
- Sand bed	cu.m	275	9.5	9.0	18.5	2.6	2.5	5.1	
- Pipe laying in trench	m	860	0.5	3.5	4.0	0.4	3.0	3.4	F/C 10%, L/C 90%
- Concrete for related structure	cu.m		187.0	153.0	340.0				
- Miscellaneous works (5%)	L.S.					3.4	4.6	8.0	
Sub Total (2-2)						64.0	87.0	151.0	
3. Night Storage Reservoir									
- Clearing and grubbing	ha	0.07	2,630	1,120	3,750	0.2	0.1	0.3	
- Stripping	cu.m	1,310	0.9	0.6	1.5	1.2	0.8	2.0	
- Excavation (soft. waste)	cu.m		2.9	1.6	4.5				
- Excavation (soft. re-use)	cu.m	3,120	0.9	0.6	1.5	2.8	1.9	4.7	Excavated soil to be returned to spoil area
- Fill	cu.m	4,380	3.0	2.0	5.0	13.0	8.7	21.7	Excavated soil to be applied to fill of dike
- Steel pipe & valve ϕ 400mm	m	177	238.0	102.0	340.0	42.1	18.0	60.1	
- R.C. pipe ϕ 600mm	m	11	35.0	28.0	63.0	0.4	0.3	0.7	
- Sodding	sq.m	2,880	0	4.0	4.0	0.0	11.5	11.5	
- Miscellaneous works (5%)	L.S.					3.3	1.7	5.0	
Sub Total						63.0	43.0	106.0	
(B) Water Conveyance Facilities									
Total						1,162.0	189.0	1,351.0	F/C 86%, L/C 14%
Total Cost of Construction falling under jurisdiction of MEWRD						2,290.0	1,028.0	3,318.0	F/C 69%, L/C 31%

TABLE G-11 (6)

CONSTRUCTION COST OF MABVUTE (VII-1-12) PROJECT

(5-4)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost		Amount (1000Z\$)			Remarks	
			F/C	L/C	Total	F/C	L/C		Total
(C) Field Consolidation Works			(Z\$)	(Z\$)	(Z\$)				
1. Site preparation and Temporary Works	L.S.	—	—	—	—	38.2	39.2	77.4	on force account by AGRITEX [(2)+(3)+(4)+(5)+(6)]×5%
2. Land Grading Works									
— Clearing and grubbing	ha	9	2,250	1,500	3,750	20.3	13.5	33.8	
— Land levelling works	ha	71	322	215	537	22.8	15.3	38.1	
— Deep ploughing works	ha	71	53	35	88	3.7	2.5	6.2	
— Miscellaneous works (5%)	L.S.	—	—	—	—	2.3	1.6	3.9	
Sub Total						49.1	32.9	82.0	
3. Distribution Canal									
— Concrete canal									
Type A 700×500	m	2,250	28	28	56	63.0	63.0	126.0	
B 600×450	m	300	25	25	50	7.5	7.5	15.0	
C 500×400	m	250	22	22	44	5.5	5.5	11.0	
D 500×350	m	1,800	21	20	41	37.8	36.0	73.8	
E 400×350	m	950	19	18	37	18.1	17.1	35.2	
F 350×300	m	5,650	16	15	31	90.4	84.8	175.2	
— Drop structure (all types)	NO.	776	83	83	166	64.4	64.4	128.8	
— Box (off-take) (all types)	NO.	58	102	102	204	5.9	5.9	11.8	
— Road Crossings (7m long)	NO.	30	375	375	750	11.2	11.3	22.5	
— Miscellaneous works (5%)	L.S.	—	—	—	—	15.2	14.8	30.0	
Sub Total						319.0	310.3	629.3	
4. Drainage Canal									
— Drainage canal	m	14,500	5	6	11	72.5	87.0	159.5	
— Road Crossings (7m long)	NO.	41	375	375	750	15.4	15.4	30.8	
— Erosion control weir	NO.	1,160	48	48	96	55.7	55.7	111.4	
— Miscellaneous works (5%)	L.S.	—	—	—	—	7.2	7.9	15.1	
Sub Total						150.8	166.0	316.8	

TABLE G-1(6)

CONSTRUCTION COST OF MABVUTE (VII-1-12) PROJECT

(5-5)

Construction falling under jurisdiction of AGRITEX

Description of Works	Unit	Quantity	Unit Construction Cost			Amount (1000Z\$)			Remarks
			F/C	L/C	Total	F/C	L/C	Total	
5. Farm Road			(Z\$)	(Z\$)	(Z\$)				
- Trunk road	m	8,500	10.5	12.5	23.0	89.3	106.2	195.5	gravel pavement
- Access road	m	---	10.5	12.5	23.0	---	---	---	gravel pavement
- Lateral road	m	7,200	8.0	10.0	18.0	57.6	72.0	129.6	gravel pavement
- Branch road	m	---	2.2	3.3	5.5	---	---	---	no pavement
- Miscellaneous works (5%)	L. S.	---	---	---	---	7.4	8.9	16.3	
Sub Total						154.3	187.1	341.4	
6. Farming Facilities									
- Farm store	sq. m	150	125	125	250	18.7	18.8	37.5	
- Office	sq. m	50	187	188	375	9.4	9.4	18.8	
- Multi - purpose hall	sq. m	100	187	188	375	18.7	18.8	37.5	
- Living quarter	sq. m	100	156	156	312	15.6	15.6	31.2	
- Blair Latrines	NO.	15	125	187	312	1.9	2.8	4.7	
- Fencing	m	8,400	1.0	2.5	3.5	8.4	21.0	29.4	
- Gate	NO.	11	198	240	438	2.2	2.6	4.8	
- Miscellaneous works (5%)	L. S.	---	---	---	---	3.7	4.5	8.2	
Sub Total						78.6	93.5	172.1	
(C) Field Consolidation works									
Total						790.0	829.0	1,619.0	F/C 49%, L/C 51%

G-5. Engineering and Administration Cost

(1) Summary

The cost consists of the following items:

- (A) Administration
 - (1) MEWRD's project office
 - (2) AGRITEX's project office
- (B) Consulting Service
 - (1) Detailed design
 - (2) Construction supervision
- (C) Investigation Cost for Detailed Design
 - (1) Topo-survey
 - (2) Geological survey

The cost is summarized below.

Table G-12. Engineering and Administration Cost

<u>Project No.</u>	<u>Currency Portion</u>	<u>Administration Cost</u> (1,000 Z\$)	<u>Consulting Service</u> (1,000 Z\$)	<u>Investigation Cost in D/D</u> (1,000Z\$)	<u>Total</u> (1,000Z\$)
I-2-1	F/C	10	215	-	225
	L/C	94	143	31	268
	<u>Total</u>	<u>104</u>	<u>358</u>	<u>31</u>	<u>493</u>
II-1-6	F/C	10	193	-	203
	L/C	95	137	31	263
	<u>Total</u>	<u>105</u>	<u>330</u>	<u>31</u>	<u>466</u>
II-2-1	F/C	7	201	-	208
	L/C	66	139	31	236
	<u>Total</u>	<u>73</u>	<u>340</u>	<u>31</u>	<u>444</u>
IV-4-10	F/C	9	193	-	202
	L/C	82	137	31	250
	<u>Total</u>	<u>91</u>	<u>330</u>	<u>31</u>	<u>452</u>
V-3-3	F/C	9	187	-	196
	L/C	92	135	31	258
	<u>Total</u>	<u>101</u>	<u>322</u>	<u>31</u>	<u>454</u>
VII-1-12	F/C	15	193	-	208
	L/C	133	137	31	301
	<u>Total</u>	<u>148</u>	<u>330</u>	<u>31</u>	<u>509</u>

(2) Break down

(A) Administration Cost

- i) MEWRD's project office
(Construction Cost of MEWRD) x 3%
- ii) AGRITEX's project office
(Construction Cost of AGRITEX) x 3%

Project No.	Administration Cost (Unit 1,000 Z\$)				
	MEWRD	AGRITEX	TOTAL	F/C	L/C
I-2-1	75	29	104	10	94
II-1-6	81	24	105	10	95
II-2-1	62	11	73	7	66
IV-4-10	69	22	91	9	82
V-3-3	70	31	101	9	92
VII-1-12	99	49	148	15	133

(B) Consulting Service

i) Man-months of engineers in charge

Project		Foreign	Local	Total
<u>No.</u>	<u>Stage</u>	<u>Engineer</u>	<u>Engineer</u>	<u>Man-months</u>
I-2-1	D/D	10	20	30
	SV	18	-	18
	<u>Total</u>	<u>28</u>	<u>20</u>	<u>48</u>
II-1-6	D/D	10	20	30
	SV	15	-	15
	<u>Total</u>	<u>25</u>	<u>20</u>	<u>45</u>
II-2-1	D/D	10	20	30
	SV	16	-	16
	<u>Total</u>	<u>26</u>	<u>20</u>	<u>46</u>
IV-4-10	D/D	10	20	30
	SV	15	-	15
	<u>Total</u>	<u>25</u>	<u>20</u>	<u>45</u>
V-3-3	D/D	10	20	30
	SV	14	-	14
	<u>Total</u>	<u>24</u>	<u>20</u>	<u>44</u>
VII-1-12	D/D	10	20	30
	SV	15	-	15
	<u>Total</u>	<u>25</u>	<u>20</u>	<u>45</u>

ii) Unit Cost of engineer

° Foreign Engineer

remuneration per month (F/C)

$$848,000 \text{ yen} \times 2.4 = 2,035,200 \text{ yen}$$

$$\text{(overhead)} = \underline{21,400 \text{ Z\$}}$$

per diem (Monthly) (L/C)

$$(4,500 + 13,500) \text{ yen} \times 30 \text{ days} = 540,000 \text{ yen}$$

$$= \underline{5,700 \text{ Z\$}}$$

Air ticket (F/C) 1,200,000 yen = 12,600 Z\$

However, the foreign engineer will be engaged in three projects at the same time.

The unit cost is then,

- remuneration per month (F/C)	=	7,100 Z\$
- per diem per month (L/C)	=	1,900 Z\$
- air ticket (F/C)	=	4,200 Z\$

° Local Engineer

remuneration per month (L/C)

3,500 Z\$ (including overhead)= 3,500 Z\$

per diem on site per month

1,000 Z\$ per month = 1,000 Z\$

Total 4,500 Z\$

iii) Expense for Consulting Service

- ° Salary and wage is calculated based on the above-mentioned Man-months and monthly unit cost of the engineer.
- ° F/C and L/C portions are calculated separately accordingly.
- ° The office and transport for the consulting service are to be provided by the MEWRD. The expense is, therefore, not included in the cost of Engineering Service.
- ° Total cost is shown in the following table.

Table G-13. Cost of Consultant Service

(Unit : 1,000 Z\$)

Project No.	Stage	Engineer	M/M	Remuneration		Per diem L/C	Trip expense Nos.	Total Cost	
				F/C	L/C			F/C	L/C
I-2-1	D/D	F.E	10	71	-	19	2	79	19
	D/D	L.E	20	-	70	20	-	-	90
	SV	F.E	18	128	-	34	2	136	34
II-1-6	D/D	F.E	10	71	-	19	2	79	19
	D/D	L.E	20	-	70	20	-	-	90
	SV	F.E	15	106	-	28	2	114	28
II-2-1	D/D	F.E	10	71	-	19	2	79	19
	D/D	L.E	20	-	70	20	-	-	90
	SV	F.E	16	114	-	30	2	122	30
IV-4-10	D/D	F.E	10	71	-	19	2	79	19
	D/D	L.E	20	-	70	20	-	-	90
	SV	F.E	15	106	-	28	2	114	28
V-3-3	D/D	F.E	10	71	-	19	2	79	19
	D/D	L.E	20	-	70	20	-	-	90
	SV	F.E	14	100	-	26	2	108	26
IV-4-10	D/D	F.E	10	71	-	19	2	79	19
	D/D	L.E	20	-	70	20	-	-	90
	SV	F.E	15	106	-	28	2	114	28

Note: (1) Consulting engineer
 F.E --- Foreign Engineer
 L.E --- Local Engineer

(2) Unit Cost/Month
 ° Remuneration F.E (F/C) 7,100 Z\$
 L.E (L/C) 3,500 Z\$
 ° Trip expense F.E (F/C) 4,200 Z\$
 L.E per trip

° Per diem F.E (L/C) 1,900 Z\$
 L.E (L/C) 1,000 Z\$

(C) Investigation Cost in Detailed Design Stage

1) Detailed topo-survey and geological survey (boring) will be conducted in each project.

ii) Expense of topo-survey per one project is as follows.

°	Hiring of survey team		
	300 Z\$/day x 30 days	=	9,000 Z\$
°	Overnight charge		
	30 Z\$/night x 29 nights	=	870 Z\$
°	Reduction and plotting		
	15 Z\$/hr x 175 hrs	=	2,625 Z\$
°	Material used (Cost plus 12%)	=	1,505 Z\$
			<hr/>
	Total (L/C)		14,000 Z\$

iii) Expense of geological survey per one project is as follows.

°	Boring works		
	315 Z\$/m x 50 m	=	15,750 Z\$
°	Miscellaneous works	=	1,250 Z\$
			<hr/>
	Total (L/C)		17,000 Z\$

iv) Total Cost of Investigation in D/D Stage

$$14,000 \text{ Z\$} + 17,000 \text{ Z\$} = 31,000 \text{ Z\$ (L/C)}$$

G-6. Operation and Maintenance Cost

(1) Summary

The cost consists of the following items:

- (A) Staffing
 - (1) Salary & wages
- (B) Equipment and Materials
 - (1) Fuel & lubricant
 - (2) Spare parts and materials
- (C) Replacement
 - (1) Pump & generator
 - (2) Silt removal

The annual costs of respective items are as listed below:

Table G-14. Annual Cost of O & M

(Unit: Z\$)

Description	Project					
	I-2-1	II-1-6	II-2-1	IV-4-10	V-3-3	VII-1-12
(A) Staffing						
1) Salary & Wages	FC	0	0	0	0	0
	LC	13,200	15,240	13,200	13,200	15,240
	<u>Total</u>	<u>13,200</u>	<u>15,240</u>	<u>13,200</u>	<u>13,200</u>	<u>15,240</u>
(B) Equipment & Materials						
1) Fuel and Lubriant	FC	-	8,140	-	-	27,225
	LC	-	6,660	-	-	22,275
	<u>Total</u>	<u>-</u>	<u>14,800</u>	<u>-</u>	<u>-</u>	<u>49,500</u>
2) Spare parts & materials	FC	1,400	1,250	900	1,100	1,900
	LC	1,400	1,250	900	1,100	1,900
	<u>Total</u>	<u>2,800</u>	<u>2,500</u>	<u>1,800</u>	<u>2,200</u>	<u>3,800</u>
(C) Replacement						
1) Pumps & Generator	FC	-	351,400	-	-	542,300
	LC	-	36,600	-	-	74,200
	<u>Total</u>	<u>-</u>	<u>388,000</u>	<u>-</u>	<u>-</u>	<u>589,500</u>
2) Silt re- moval	FC	580,000	54,000	60,000	163,000	109,000
	LC	313,000	29,000	33,000	88,000	59,000
	<u>Total</u>	<u>893,000</u>	<u>83,000</u>	<u>93,000</u>	<u>251,000</u>	<u>168,000</u>

(2) Breakdown

(A) Staffing

1) Salary & wages

The cost is considered as local currency portion.

One person works for valve operation of water intake facilities in each dam site. Another person takes charge of extension activities on the farm.

One person works for pump operation in pump house of II-1-6 and VII-1-12.

Annual Cost

I-2-1

- ° Foreman who inspects dam, canal and N.S. reservoir, operates valve at outlet of dam.
- ° Extension worker who instructs farmers concerned on the farm.

500Z\$/month x 1 person x 12 months = 6,000 Z\$
600Z\$/month x 1 person x 12 months = 7,200 Z\$
Total = 13,200 Z\$

II-1-6

- ° Foreman x 1 person x 12 months = 6,000 Z\$
- ° Operator of Pump and Generator
170Z\$/month x 1 person x 12 months = 2,040 Z\$
- ° Ext. worker x 1 person x 12 months = 7,200 Z\$
Total = 15,240 Z\$

II-2-1

- ° Foreman x 1 person x 12 months = 6,000 Z\$
- ° Ext. worker x 1 person x 12 months = 7,200 Z\$
Total = 13,200 Z\$

IV-4-10

° Foreman x 1 person x 12 months	=	6,000 Z\$
° Ext. worker x 1 person x 12 months	=	<u>7,200 Z\$</u>
Total		13,200 Z\$

V-3-3

° Foreman x 1 person x 12 months	=	6,000 Z\$
° Ext. worker x 1 person x 12 months	=	<u>7,200 Z\$</u>
Total		13,200 Z\$

VII-1-12

° Foreman x 1 person x 12 months	=	6,000 Z\$
° Pump operator x 1 person x 12 months	=	2,040 Z\$
° Ext. worker x 1 person x 12 months	=	<u>7,200 Z\$</u>
Total		15,240 Z\$

(B) Equipment and Materials

- i) Fuel & lubricant cost in Pump House
(F/C 55%, L/C 45%)

II-1-6

° Fuel

$$4.5 \text{ l/hr} \times 2,700 \text{ hrs/year} \times 2 \text{ sets} \times 0.6 \text{ Z\$/l} = 14,580 \text{ Z\$}$$

° Lubricant

$$(6 \frac{1}{300} \text{ hrs}) \times 2,700 \text{ hrs/year} \times 2 \text{ sets} \times 2.0 \text{ Z\$/l} = 220 \text{ Z\$/l}$$

$$\text{Total} = \underline{14,800 \text{ Z\$}}$$

$$\text{F/C} = 8,140 \text{ Z\$}$$

$$\text{L/C} = 6,660 \text{ Z\$}$$

II-1-12

° Fuel

$$15.0 \text{ l/hr} \times 2,700 \text{ hrs/year} \times 2 \text{ sets} \times 0.6 \text{ Z\$/l} \\ = 48,600 \text{ Z\$}$$

° Lubricant

$$(25 \text{ l/300 hrs}) \times 2,700 \text{ hrs/year} \times 2 \text{ sets} \times 2.0 \text{ Z\$/l} \\ = 900 \text{ Z\$}$$

$$\text{Total} = 49,500 \text{ Z\$}$$

$$\text{F/C} = 27,225 \text{ Z\$}$$

$$\text{L/C} = 22,275 \text{ Z\$}$$

ii) Spare Parts and Materials

(F/C 50%, L/C 50%)

° Materials for repair

$$\text{Construction cost (A + B)} \times 2\% + (\text{project life})$$

° Plastic pipe

$$10 \text{ pcs/ha} \times 10 \text{ Z\$/pc} \times (\text{Project life}/5 \text{ years})$$

I-2-1

Materials for repair

$$3,843,000 \text{ Z\$} \times 0.02 + 38 \text{ years} = 2,023 \text{ Z\$}$$

Plastic pipe

$$(36.2 \text{ ha} \times 10 \text{ pcs/ha}) + 5 \text{ years} \times 10 \text{ Z\$/pc} = 724 \text{ Z\$}$$

$$\text{Total} = 2,747 \text{ Z\$}$$

$$\text{†} 2,800 \text{ Z\$}$$

$$\text{F/C} 1,400 \text{ Z\$}$$

$$\text{L/C} 1,400 \text{ Z\$}$$

II-1-6

Materials for repair

3,396,000 Z\$ x 0.02 ÷ 38 years = 1,787

Plastic pipe

34.7 ha x 10/5 x 10Z\$/pc. = 694

Total 2,481 Z\$

÷ 2,500 Z\$

F/C 1,250 Z\$

L/C 1,250 Z\$

II-2-1

Materials for repair

2,827,000 Z\$ x 0.02 ÷ 38 years = 1,488 Z\$

Plastic pipe

15.2 ha x 10 ÷ 5 x 10 Z\$/pc = 304 Z\$

Total 1,792 Z\$

÷ 1,800 Z\$

F/C 900 Z\$

L/C 900 Z\$

IV-4-10

Materials for repair

2,987,000 Z\$ x 0.02 ÷ 38 years = 1,572 Z\$

Plastic pipe

33.3 ha x 10 ÷ 5 x 10 Z\$/pc = 666 Z\$

Total 2,238 Z\$

÷ 2,200 Z\$

F/C 1,100 Z\$

L/C 1,100 Z\$

V-3-3

Materials for repair

$$3,341,000 \text{ Z\$} \times 0.02 \div 38 \text{ years} = 1,758 \text{ Z\$}$$

Plastic pipe

$$51.1 \text{ ha} \times 10 \div 5 \times 10 \text{ Z\$/pc} = 1,022 \text{ Z\$}$$

Total 2,780 Z\$

± 2,800 Z\$

F/C 1,400 Z\$

L/C 1,400 Z\$

VII-1-12

Materials for repair

$$4,614,000 \text{ Z\$} \times 0.02 \div 38 \text{ years} = 2,428 \text{ Z\$}$$

Plastic pipe

$$70.5 \text{ ha} \times 10 \div 5 \times 10 \text{ Z\$/pc} = 1,410 \text{ Z\$}$$

Total 3,838 Z\$

± 3,800 Z\$

F/C 1,900 Z\$

L/C 1,900 Z\$

(C) Replacement Cost

- i) The pumps and generators in II-1-6 and VII-1-12 are to be replaced at the twenty-third year of the project period.

Replacement Cost of Pumps and Generators

Item	Cost (1,000 Z\$)					
	II-1-6			VII-1-12		
	F/C	L/C	Total	F/C	L/C	Total
° Pumps & accessories	69.2	3.5	72.5	89.6	4.5	94.1
° Pump starter & "	7.7	0.4	8.1	7.5	0.4	7.9
° Generators for pumps	101.4	5.1	106.5	217.2	10.9	228.1
° Generators for control and starter	17.5	0.9	18.4	17.0	0.9	17.9
° Electric cubicles	153.6	7.7	161.3	209.0	10.5	219.5
° Installation in Pump house	2.0	19.0	21.0	2.0	20.0	22.0
Total	351.4	36.6	388.0	542.3	47.2	589.5

ii) Silt removal in Reservoir

The sediments are to be removed from the reservoir at the twenty-third year of project period. The volume and cost in respective projects are as follows:

<u>Project</u>	<u>Volume</u> (1000 cu.m)	<u>Cost (1,000 Z\$)</u>		
		<u>F/C</u>	<u>L/C</u>	<u>Total</u>
I-2-1	893	580	313	893
II-1-6	83	54	29	83
II-2-1	93	60	33	93
IV-2-10	251	163	88	251
V-3-3	168	109	59	168
VII-1-12	101	65	36	101

Note: Unit Cost -- 1.0 Z\$/cu.m

Table G - 15.

Basis of Fuel Costs

NO.	factors / month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
(1)	Water Requirement per diem (mm)	6.4	5.5	5.0	4.5	3.5	2.9	3.1	4.4	5.6	6.3	6.4	6.0
(2)	Adopted Peak Operation hours (hr.)	16	16	16	16	16	16	16	16	16	16	16	16
(3)	Field Application Ratio (per cent)	55	55	55	55	55	90	90	90	90	90	90	55
(4)	Hours Required to Irrigate 1mm. (hr.)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
(5)	Number of Days (day)	31	28	31	30	31	30	31	31	30	31	30	31
(6)	Integrated (per cent) crop coefficient	70	90	95	95	65	70	75	90	90	80	85	70
Required Hours of Pump Operation (hr.)		191	191	202	177	97	137	162	276	340	351	367	179
Total Operating hours = 2,670 = 2,700 hrs / year / 2 main pumps.													
Site No.	Size of Generator	HP.	Fuel Consumption	Engine Oil per 300 hrs.									
II - 1 - 6	90 KVA	119	15 ℓ / hr	25 ℓ / 300 hr.	Cost of Diesel oil : 0.61 z/ℓ								
VI - 1 - 12	15 KVA	23	4.5 ℓ / hr	6 ℓ / 300 hr.	Cost of Lubricant : 2.00 z/ℓ								
Grease (60 ~ 110 cc) was neglected in calculation													

Table G-16 Operation, Maintenance and Replacement Costs
(Total for project life)

unit: thousand z\$

Site No.	I-2-1			II-1-6			II-2-1			IV-4-10			V-3-3			VII-1-12		
	F/C	L/C	Total	F/C	L/C	Total	F/C	L/C	Total	F/C	L/C	Total	F/C	L/C	Total	F/C	L/C	Total
Staffing	Pump Operator and Foreman	0	30	0	108	108	0	0	0	0	30	30	0	30	30	0	108	108
	Extension Worker	0	36	0	36	36	0	0	0	0	36	36	0	36	36	0	36	36
	Total	0	66	66	144	144	0	0	0	0	66	66	0	66	66	0	144	144
Equipment and Materials	Diese Oil	0	0	0	338	563	0	0	0	0	0	0	0	0	0	0	1,126	1,878
	Lubricant	0	0	0	5	8	0	0	0	0	0	0	0	0	0	0	20	34
	Spareparts and Materials	37	32	69	44	71	26	23	49	32	29	61	35	33	68	61	37	98
	Plastic pipes and tools	2	1	3	2	1	3	1	0	1	2	1	3	2	2	4	2	2
Total	39	33	72	389	256	645	27	23	50	34	30	64	37	35	72	1,209	805	2,014
Replacement	Pump and Generators	0	0	0	350	388	0	0	0	0	0	0	0	0	0	0	531	590
	Silt Removal	580	313	893	54	83	60	33	93	163	88	251	109	59	168	66	35	101
	Total	580	313	893	404	471	60	33	93	163	88	251	109	59	168	597	94	691
Grand Total	619	412	1,031	793	467	1,260	87	122	209	197	184	381	146	160	306	1,806	1,043	2,849

ANNEX H. PROJECT BENEFIT

Contents	Page
Table H-1 Basic Data for Estimating Blended Prices	H-1
H-2 Standard Conversion Factor from Trade of Consumer Goods	H-2
H-3 Conversion Factor for Fuels	H-3
H-4 Conversion Factor for Seed	H-4
H-5 Conversion Factor for Fertilizers and Chemicals	H-5
H-6 Conversion Factor for Cement	H-6
H-7 List of Conversion Factors for F.S. Evaluation	H-7
H-8 Financial and Economic Prices of Farm Inputs	H-8
H-9 Economic Prices	H-9
H-10 Input Cost per Hectare (Without Project)	H-10
H-11 Input Cost per Hectare (With Project)	H-11
H-12 Crop Budget (Without Project, Financial Price)	H-12
H-13 Crop Budget (Without Project, Economic Price)	H-13
H-14 Crop Budget per Hectare (With Project Financial Price)	H-14
H-15 Crop Budget per Hectare (With Project, Economic Price)	H-15
H-16 Farm Economy (Financial and Economic Prices)	H-16
H-17 Project Labour Requirement With and Without Project	H-17

Contents		Page
Table H-18	Monthly Labour Requirement (Without Project)	H-18
H-19	Indicators of Farm Management per Household	H-19
H-20	Results of Interview Survey 1)	H-20
H-21	Results of Interview Survey 2)	H-21
H-22	Results of Interview Survey 3)	H-22
H-23	Results of Interview Survey 4)	H-23
H-24	Estimated Improvement in Food Security	H-24
H-25	Costs in Economic Price	H-25
H-26	Project Cost and Benefits	H-26
H-27	Water Costs for Medium Size Dam Projects	H-32
H-28	Project Cost at 20 Percent Risk in Dam Yield	H-33

Table H-1 Basic Data for Estimating Blended Prices

Produce	Grade	1986 / 87		1985 / 86		Grade Standard of Both Crop years	
		Producer Price	Share of Each Grade %	Producer Price	Share of Each Grade %	Content of damaged Grain	Weight of thous. grains
White Maize	A	180.00	89	180.00	89	0 ~ 6	--
	B	178.15	9	178.15	9	7 ~ 12	--
	C	176.25	2	176.25	2	12 ~ 17	--
	D	156.25	0	156.25	0	17 <	--
	Total		100		100		
Ground Nuts Unshelled	A2	574.20	7	488.00	50	--	48 ou.
	B2	523.90	0	446.00	0	--	35 ou.
	C1	511.90	73	427.00	50	--	28 ou.
	C2	413.95	20	--	--	--	25 ou.
	Total		100		100		
Ground Nuts Shelled	A1	900.00	55	720.00	--	Export gr	--
	D1	822.55	17	658.04	--	Process gr.1.	--
	D2	805.95	28	656.25	--	Process gr.2.	--
	Total		100		--		
Ropoko	A	300.00	0	300.00	47	0 ~ 8	--
	B	275.00	100	275.00	53	8 ~ 20	--
Mhunga	A	250.00	0	250.00	56	0 ~ 8	--
	B	230.00	100	230.00	44	8 ~ 20	--
	Total		100		100		
White Sorghum	A	180.00	26	180.00	68	0 ~ 4	--
	B	168.00	69	168.00	17	4 ~ 9	--
	C	153.00	5	153.00	4	9 ~ 17	--
	D	140.65	0	140.70	11	17 <	--
	Total		100		100		
Sugar Bean	A	450.00	50	450.00	59	0 ~ 2	--
	B	420.00	50	420.00	41	2 ~ 10	--
	Total		100		100		
Sunflower	SA	--	--			--	--
	AA	390.00	58	340.00	83	--	32 gr.
	BA	370.50	24	323.00	13	--	24 gr.
	CA	318.85	18	278.00	4	--	16 gr.
	Total		100		100		
Wheat	AS	330.00	98	300.00	81	--	29 gr.
	BS	327.45	1	297.70	4	--	26.5gr.
	UG	247.50	1	225.00	15	--	24 gr.
	Total		100		100		
Soyabean	B	385.00	83	340.00	63	0 ~ 2	--
	C	381.25	17	292.00	37	2 ~ 10	--
	Total		100		100		

Source : G. M. B. Depot, Masvingo

Table H-2 Standard Conversion Factor from Trade of Consumers Goods

unit : in million \$, except (8)

No	Item (Values of Trade)	Terms of Value	1981/82	1982/83	1983/84	1984/85	1985/86	Average of 5 years
(1)	Total imports of Consumers Goods	C.I.F	436.8	466.9	499.1	615.0	725.5	548.7
(2)	Total Exports of Consumers Goods	F.O.B	472.3	421.1	597.9	613.8	756.4	572.3
(3)	Total Custom duties and Import Taxes		129.2	205.3	242.3	276.8	332.2	237.2
(4)	Total Export Taxes		0	0	0	0	0	0
(5)	Export Subsidies on Consumers Goods	World Bank Data	5.6	0	2.5	10.0	0	3.6
(6)	(1) + (2)		909.1	888.0	1097.0	1228.6	1481.5	1,120.8
(7)	(1) + (2) + (3) - (4) + (5)		1038.3	1093.3	1339.3	1505.6	1814.1	1,361.7
(8)	C.F.C.=(6)/(7) (Conversion factor of consumers goods)		0.875	0.812	0.819	0.816	0.817	0.828 <u>0.823</u>

Table H-3 Conversion Factor for Fuels
(Based on NOCZIM projected 1983-87)

unit : 1000ℓ, z\$

Classification	Cost Items	Original Cost Value		Converted Value	
		Imported	Locally Supplied	Imported	Locally Supplied
(Material)	Bulk Refined oils.	thous.litres 253,600 thous.z\$ =46,244			
Imported Costs (Outside the country)	Intl. price	182.4	0	182.4	0
	Inland Transportation	10.0	0	10.0	0
	Import Duties	186.5	0	0	0
	Total	378.9	0	192.4	0
Handling Costs (Inside the country)	Bridging Cost	0	107.5	0	88.2
	Depreciation	0	0.0	0	0
	Cap. Interest	0	14.0	0	0
	Total	0	121.5	0	88.2
Distribution cost	Local transport and marketing	0	78.5	0	64.4
	Total	0	78.5	0	64.4
Grand Total		378.9	200.0	192.4	152.6
		578.9		345.0	
Conversion Factor for Fuels 0.596±0.60					
Perlitre Prices	Retail Price	1986 Gazetted Ceiling Price		Sales tax rate	
Automobile fuel	z\$ 1.15/ℓ	z\$ 1.27~1.30/ℓ		0.157	
Diesel oil	z\$ 0.63/ℓ	z\$ 0.69~0.73/ℓ		0.175	
Rate of Import Duties 150z\$/1000ℓ (1m ³)+20% surtax.					

Table H-4 Conversion Factor for Seed
(Based on Seed Coop. Production of SR52 Maize, in 1986)

in z\$

Classification	Cost Items	Original Cost Value		Converted Value	
		Imported	Locally Supplied	Imported	Domestic
	Selling Price to Consumers		z\$ 74.25/100kg		
Material	Multiplication Seed	57.52		57.52	
	Fertilizer	60.30	280.35	60.30	230.73
	Cheml calcs	168.87	8.89	168.87	7.32
	Packing Material *		18.27		15.04
	Fuel for Tractor **	180.55		180.55	
Total		467.24	307.51	467.24	253.09
Other Variable Costs	Labour ***		380.05		156.39
	Aerial Sprays	10.26	10.26	10.26	8.44
	Insurance ****		9.04		0
	Transport *****		24.20		19.92
Total		10.26	423.91	10.26	184.75
Other Variable costs	Overhead Cost *6		423.73		348.73
	Finance *7		114.52		0
Total			583.25		348.73
Total Costs		477.50	1.269.67	477.50	786.57
		1.747.17		1.264.07	
Conversion Factor for Seed 0.723±0.72					

unit : * z\$0.60 for 30 packets

** fuel : 111 litres

*** z\$3.41 per hour

**** 0.57% of variable Costs

***** 95km (distance) on 20tonnes/RIMS RATE

*6 35% of total variable Costs

*7 7% of total variable Costs Overhead Cost

Table H-5 Conversion Factor for Fertilizers and Chemicals
(Based on Production Costs 1984)

in z\$

Classification	Cost Items	Original Cost Value		Converted Value	
		Imported	Locally Supplied	Imported	Locally Supplied
Material	Ammonium (Bulk)	(22,713) ^t	(49,000) ^t		
Fixed Costs	Energy (Elec. etc.)	2,572,200	19,412,400	2,572,200	15,976,410
	Salaries, Wagers		6,212,400		2,556,400
	Insurances		2,026,900		1,668,140
	Maintenance	912,600	5,171,100	912,600	4,255,820
	Depreciation	1,053,500	1,053,500	1,053,500	807,030
	Other Fixed Costs		2,505,900		2,062,360
Total		4,538,300	36,382,200	4,538,300	27,326,160
Variable Costs	Ammonium	10,128,200		10,128,200	
	Other Variable costs		3,112,700		2,561,750
	Govt. Agreed Margin		1,298,100		1,068,340
Total		10,128,200	4,410,800	10,128,200	3,630,090
(Less)	Revenue Other than Sales of A.N.		-1,836,800		-1,511,190
Grand Total		14,666,500	38,956,800	14,666,500	29,445,060
		53,623,300		44,111,560	
Conversion Factor for Fertilizers 0.822 ≈ 0.83					
Conversion Factor for Other Agro-Chemicals					
<p>Insecticides and Fungicides are directly imported from Germany and other European Countries in the form of packed products.</p> <p>Import duties and sales tax are exempted for communal farmers.</p> <p>Therefore only government agreed margins and distribution costs are accounted for local components which are generally less than 10%</p> <p>From this reason a conversion factor of 0.95 was adopted for this item.</p>					

Table H-6 Conversion Factor for Cement
(Based on Production Costs 1986)

in z\$

Classification	Cost Items	Original Cost Value		Converted Value	
		Imported	Locally Supplied	Imported	Locally Supplied
	Tonnage Sold		ton 292,000		
	Turnover Value		z\$ 22,012,000		
	Cost for Delivery		763,000		
	Net Sales		21,249,000		
Production Costs	Raw Materials	181,000	1,629,000	181,000	1,340,670
	Coal (fuel)	125,300	1,127,700	125,300	928,100
	Electric Power	68,400	516,600	68,400	425,160
	Labour Wages		2,574,000		1,059,200
	Depreciation	680,000	680,000	680,000	559,640
	Stores		2,665,000		2,193,300
	Operating Overheads		2,314,000		1,904,420
	Sacking Materials	171,600	1,544,400	171,600	1,271,040
	Total	1,226,300	13,050,760	1,226,300	9,681,530
	Gross Profit		5,972,000		4,914,960
	Sundry Revenue		69,000		56,790
	Total		6,031,000		4,971,750
Less Overheads	Selling Expenses		- 226,500		- 186,410
	Administration		-1,111,000		- 914,350
	Finance Charges		-1,456,000		0
	Total Overheads		-2,793,500		-1,100,760
		1,226,300	16,288,260	1,226,300	13,552,520
			17,514,560		14,778,820
Conversion Factor for Cement $0.844 \approx 0.84$					
$60z\$/t = 3z\$/50kg$ (delivery at a manufacturing Factory)					

Table H-7 List of Conversion Factors for F.S.Evaluation

Conversion Factor	Applicable Costs and Benefits	Adopted Value
Standard Conversion Factor (C.F. for Consumer Goods)	Skilled Labour, Transport, Machinery-Hire, Commodities other than internationally traded between Zimbabwe and or other exporting or importing countries	0.82 (0.823)
C.F. for Cement	Cement and other domestically available Construction Materials	0.84
C.F. for Seed	Seed	0.72
C.F. for Fertilizers	Fertilizers, Gypsum	0.83
C.F. for Chemicals	Insecticides, Fungicides, Herbicides	0.95
C.F. for Fuels	Fuels. Diesel oil, lubricants, Electricity	0.60
C.F. for Unskilled Labour	Casual, unskilled labour hiring and Farm Labour	0
C.F. for Imported Goods	Imported Machinery, Equipment, Tools, Spareparts	1.00
C.F. for Interests	Domestic loan interests etc.	0
C.F. for Taxes, Duties	Import duties, Sales tax, Excise duties	0
C.F. for Water Charge	Farmers Water Charge for Irrigation	0

Note and Source : Adopted Values were estimated by the Team

Table H-8 Financial and Economic Prices of Farm Inputs

unit : see below

Items	Financial Price less Tax	Sales* Tax	Conversion factor	Economic Price	Items	Financial Price less Tax	Sales* Tax	Conversion factor	Economic Price
Farm labour	1.5	0	0	0	Dipterex	21.94/kg	2.19	0.95	20.84
Tractor hire	62.0	0	0.82	50.84	Carbaryl	14.30/kg	1.43	0.95	13.59
Maize seed	1.13	0	0.72	0.81	Dithane	8.10/kg	0.81	0.95	7.70
G'nuts seed	0.93	0	0.72	0.67	Dimethoate	11.00/kg	0.11	0.95	10.45
Wheat seed	0.85	0	0.72	0.61	Cu.Oxychloride	3.10/kg	0.31	0.95	2.95
S'bean seed	0.83	0	0.72	0.60	Captan	8.62/kg	0.86	0.95	8.19
Cotton seed	0.30	0	0.72	0.22	Malathion	6.48/kg	0.65	0.95	5.54
S'flower seed	0.37	0	0.72	0.27	Endosulfan	63.80/kg	6.38	0.95	60.61
tomato seed	126.90	0	0.72	91.37	Dieldrex	22.58/kg	2.26	0.95	21.45
Veg. seed	101.30	0	0.72	72.94	Bravo	16.47/kg	1.65	0.95	15.65
Compd. C	481.00	0	0.83	399.23	Dieldrex	27.30/kg	2.73	0.95	25.94
Compd. D	369.00	0	0.83	306.27	Thiram	7.80/kg	0.78	0.95	7.41
Compd. L	417.00	0	0.83	346.11	Sulp hor	3.95/kg	0.40	0.95	3.75
Compd. S	461.00	0	0.83	382.63	Hoe	3.50	0	0.82	2.87
Amm Nitrate	432.00	0	0.83	358.56	Sickle	2.50	0	0.82	2.05
S.S.phosphate	282.00	0	0.83	234.06	Wheelbarrow	128	13	0.82	104.96
Gypsum	55.40	0	0.83	45.98	Watercharge	145	0	0	0

unit:labor and hirecharge;\$/day, seed;\$/kg, fertilizers and gypsum;\$/t;
agricultural chemicals;\$/1 or z\$/kg, implements;\$/nos.

* communal farmers are exempted to pay sales tax for seed and fertilizers.

Table H-9 Economic Prices

Crop	Financial Price	Conversion Factors	Economic Price	Basis of Estimation
Maize	179.6	—	234.8	$\left(\frac{3}{4} \times \text{Actual Export Price} + \frac{1}{4} \times \text{Calculated Border Price (Import)} \right)$ in 1987 ***
Groundnuts	860.5 **	—	1062.2 **	d.o ****
Wheat	328.1	—	340.0	Calculated Border Price (Import)
Sugarbeans	436.3	—	521.6	d.o
Rapoko	280.8	0.82	230.2	Converted Price
Mhunga	235.6	0.82	193.2	"
Sorghum	171.5	—	287.3	Calculated Border Price (Import)
Barbarabeans	436.3	0.82	357.8	Converted Price
Cotton	669.6	0.82	549.1	"
Sunflower	354.0	0.82	290.3	"
Green Maize	400.0	0.82	328.0	"
Tomato	300~360	1.5 x 0.82	369.0~442.8	d.o in cluding home consumption 7.5 ton/ha
Vegetables	480~520	1.5 x 0.82	590.4~639.6	"

*

** Shelled nut Beans. equivalent to z\$ 478.0 for financial and z\$ 589.5 for economic prices.

*** $\frac{3}{4} \times 202.1 + \frac{1}{4} \times 330.0$

**** $\frac{3}{4} \times 1053.0 + \frac{1}{4} \times 1089.6 = 1062.2$

Table Input H-10 Cost per Hectare(Without Project)

unit : z\$/ha, specified for quantity.

Site Item	Musaverema		Chityamatumwa		Mashoko		Munjanganja		Magudu		Mabvute	
	Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost	Qty.	Cost
Seed :												
Maize seed	10kg	11.2	10kg	11.2	5kg	5.9	13kg	14.6	7kg	7.2	10kg	11.2
Groundnut seed	-	-	-	-	-	-	8kg	7.4	4kg	3.7	6kg	5.6
Cotton seed	-	-	1kg	0.3	2kg	0.6	3kg	0.9	1kg	0.3	3kg	0.9
Sunflower seed	1kg	0.4	1kg	0.4	3kg	1.2	2kg	0.7	-	-	-	-
Fertilizers :												
for Maize(Compd.D)etc.	15kg	5.6	10kg	3.7	4kg	1.5	20kg	7.4	10kg	3.7	25kg	9.2
for Cotton(Compd.L)	-	-	15kg	6.3	6kg	2.5	35kg	14.7	5kg	2.1	30kg	12.5
Chemicals :												
for Cotton, Carbaryl	-	-	-	0.3	-	0.3	-	0.2	-	0.3	-	0.9
Endosulfan	-	-	-	1.4	-	0.4	-	1.1	-	0.4	-	4.2
Dimethoate	-	-	-	0.3	-	0.3	-	0.2	-	0.3	-	0.9
Implement renovated	-	1.3	-	1.0	-	0.9	-	4.1	-	1.4	-	2.8
Hired Labour *	3hrs	1.8	3hrs	1.8	9hrs	2.7	8hrs	3.3	3hrs	1.5	5hrs	2.5
Total	20.3		26.7		16.3		54.6		20.9		51.4	

Note : Qty = Quantity. *Including transportation costs.

Table H-11 Input Cost per Hectare(With Project)

(Input Materials only)

unit : z\$/ha

Crop Item	Maize			Groundnuts			Wheat			Sugarbeans			Green Maize			Tomato			Vegetables				
	Q	P	C	Q	P	C	Q	P	C	Q	P	C	Q	P	C	Q	P	C	Q	P	C		
Seed	40	1.13	45	100	0.95	95	125	0.85	106	90	0.83	74	40	113	45	0.16	127	20	0.35	101	35		
Fertilizers			336			201			351			224			336			417				369	
Compound C	-	-	-	-	-	-	-	-	-	350	48	168	-	-	-	-	-	-	-	-	-	-	
Compound D	500	0.37	185	-	-	-	600	600	221	-	-	-	500	0.37	185	-	-	-	-	-	-	-	
Compound L	-	-	-	300	0.43	125	300	0.43	130	-	-	-	-	-	-	-	1,000	0.42	417	-	-	-	
Compound S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	800	
Ammo, Nitrate	350	0.43	151	-	-	-	-	-	-	200	28	56	350	0.43	151	-	-	-	-	-	-	-	369
S.S.Phosphate	-	-	-	200	0.28	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gypsum	-	-	-	250	0.08	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemicals			36			24			26			28			36			176				131	
Dipterex, gran	0.3	21.9	7	-	-	-	-	-	-	0.3	21.9	7	-	-	-	-	-	-	-	-	-	-	
Carbaryl 85%	2	14.3	29	-	-	-	1	14.3	14	-	-	-	2	14.3	29	3	14.3	43	-	-	-	-	
Dimethoate 40%	-	-	-	-	-	-	1	11.0	11	-	-	-	-	-	-	1	11	11	-	-	-	-	
Thiram	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	7.8	12	3	7.8	23	-	
Endosulfan 35%	-	-	-	-	-	-	-	-	-	1	273	27	-	-	-	1	63.8	64	1	63.8	64	-	
Dieldrin/(Zeb)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(1)	(4.0)	(4)	(1)	(4.0)	(4)	-	
Dithane M 45	-	-	-	1	8.1	8	-	-	-	-	-	-	-	-	-	4	8.1	32	4	8.1	32	-	
Bravo/(Captan)	-	-	-	1	16.4	16	-	-	-	-	-	-	-	-	-	(0.3)	(8.6)	(3)	-	-	-	-	
CuClO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3.1	6	2	3.1	6	-	
Marathindust	-	-	-	-	-	-	2	0.53	1	2	0.53	1	-	-	-	2	0.53	1	4	0.53	2	-	

Note Q:quantity;kg/ha, P:unit pricez\$/kg, C:costz\$/ha

Table H-12 Crop Budget(Without Project, Financial Price)

unit : A;B;t/ha;C;t/ha;D and G;t/ha

Site Holding (ha.)	Musaverema						Chinyamatumba						Mashoko						Munjanganja						Magudu						Mabvute											
	3.5						3.0						2.4						2.4						2.0						3.6											
	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F						
Outputs																																										
Maize	55	1.0	167.5	92.1	60	1.1	166.6	110.0	47	1.0	159.8	75.1	60	1.1	165.2	109.0	61	0.8	157.6	76.9	51	1.1	166.2	93.2																		
G'nuts	15	0.3	457.9	20.6	12	0.3	457.0	16.5	5	0.2	450.2	4.5	15	0.6	455.6	41.0	12	0.2	448.0	10.8	15	0.5	456.6	34.2																		
Rapoko	10	0.4	268.7	10.7	6	0.9	267.8	14.5	13	0.3	261.0	10.2	8	0.6	266.4	12.8	15	0.3	258.8	11.6	14	0.8	267.4	29.9																		
Mhunga	10	0.4	223.5	8.9	17	0.7	222.6	26.5	0	-	-	-	10	0.8	221.2	17.7	3	0.3	213.6	1.9	7	0.7	222.2	10.9																		
Sorghum	5	0.4	159.4	3.2	1	0.8	158.5	1.3	20	0.6	151.6	18.2	0	-	-	-	6	0.7	149.5	6.3	4	0.6	158.1	3.8																		
B.beans	1	0.2	424.2	0.8	1	0.3	423.3	1.3	5	0.1	416.4	2.1	0	-	-	-	0	-	-	-	2	0.1	422.9	0.8																		
Cotton	0	-	-	-	1	0.6	669.6	4.0	5	1.1	668.2	36.8	2	1.0	654.2	13.1	3	0.4	676.6	8.1	6	0.5	668.2	20.0																		
S'flower	4	0.5	33	6.7	2	0.2	336.5	1.3	5	0.5	329.7	8.2	5	0.3	335.1	5.1	0	-	-	-	1	0.6	336.1	2.0																		
Gr.Income	100	-	-	143.0	100	-	-	175.4	100	-	155.1	100	100	-	-	198.6	100	-	-	-	100	-	-	194.8																		
T.C.Income	-	-	-	50	-	-	-	526	-	-	372	-	-	-	-	477	-	-	-	-	-	-	-	701																		
Inputs																																										
H.Labor																																										
Seed																																										
Fertilizer																																										
Chemicals																																										
Implement																																										
V.P.Cost																																										
T.P.Cost																																										
Gr.Margin																																										

Note : A;cropping intensity, B;Cropyield, C;Farmgateprice, D;Gross Income, E;Materials, F;Quantities, G;Input Costs. Transportation is already subtrated from local market price.

Table H-14 Crop Budget per Hectare (With Project, Financial Price)

unit : I;%, Y;t/ha, P;\$/t, Piz\$/t, others;\$/\$

Site(No.)	Musaverema(I-2-1)						Chinyamatumwa(II-1-6)						Mashoko(II-2-1)						Munjanganja(V-4-10)						Magudu(V-3-3)						Mabvute(VI-1-12)											
	I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M							
Maize	45	8	168	603	316		40	8	167	533	276		45	8	160	575	288		40	8	165	529	272		45	8	158	567	280		40	8	166	532	275		40	8	166	532	275	
Groundnuts	25	3	458	343	195		20	3	457	274	156		25	3	450	338	190		20	3	456	273	155		25	3	448	336	188		20	3	457	274	156		20	3	457	274	156	
Wheat	40	3.5	297	416	116		40	3.5	296	414	115		40	3.5	289	405	105		40	3.5	295	412	113		40	3.5	287	402	102		40	3.5	296	414	115							
Sugarbeans	45	2.5	424	477	233		40	2.5	423	423	205		45	2.5	416	468	224		40	2.5	422	422	204		45	2.5	414	466	222		40	2.5	423	423	205							
Green Maize	5	7.5	379	142	108		10	7.5	373	294	224		5	7.5	381	143	109		5	7.5	389	292	222		5	7.5	382	144	110		10	7.5	389	292	222							
Tomato	15	15	279	628	484		20	15	293	878	691		15	15	341	766	622		20	15	289	868	681		15	15	343	772	628		20	15	289	868	681							
Vegetables	25	10	379	948	723		30	10	406	1217	953		25	10	421	1051	826		30	10	443	1328	1064		25	10	423	1038	833		30	10	446	1338	1074							
Total	200	-	-	3557	2175	200	-	-	-	4033	2620	200	-	-	-	3746	2364	200	-	-	-	4124	2711	200	-	-	-	3745	2363	200	-	-	-	4141	2728	200						
Production Cost:(G-M)(hectare x cropping intensity)																																										
Crop	Maize						Groundnuts						Wheat						Sugar beans						Green Maize						Tomato						Vegetables					
	A	B					A	B					A	B					A	B					A	B					A	B										
Seed	18	20					19	24					42	42					30	33					5	2					4	3					11	9				
Fertilizers	134	151					40	50					140	140					90	101					83	63					111	111										
Chemicals	14	16					5	6					10	10					11	13					2	26					39	33										
Watercharge	37	40					12	15					35	35					17	19					11	9					25	22										
Tractor/hire	13	14					6	8					12	14					14	14					6	5					8	8										
Implement	1	1					1	1					1	1					1	1					9	9					13	13										
Labour etc	40	45					35	44					60	63					56	63					6	29					57	48										
Total cost/ha.	257	287					118	148					300	299					244	218					34	144					264	225										

Note : I;cropping intensity, Y;yield, P;price, G;gross income, M;margin/ha, A;Type A, B;Type B
 Type A applicable to II-1-6, V-4-10 and VI-1-12, Type B applicable to I-2-1, II-2-land V-3-3

Table H-15 Crop Budget per Hectare(With Project, Economic Price)

unit : I:%, Y:t/ha, P:\$/t, others:\$/ha

Site(No.)	Musaverema(I-2-1)						Chinyamatumba(II-1-6)						Mashoko(II-2-1)						Munjanganja(IV-4-10)						Magudu(V-3-3)						Mabvute(VII-1-12)					
	I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M		I	Y	P	G	M	
Maize	45	8	229	824	659		40	8	228	730	584		45	8	222	799	634		40	8	227	726	580		45	8	220	792	627		40	8	228	730	584	
Groundnuts	25	3	584	438	363		20	3	583	350	290		25	3	577	433	358		20	3	582	349	289		25	3	575	431	356		20	3	583	350	290	
Wheat	40	3.5	346	484	315		40	3.5	347	486	317		40	3.5	353	494	325		40	3.5	348	487	318		40	3.5	355	497	328		40	3.5	347	486	317	
Sugarbeans	45	2.5	528	594	460		40	2.5	529	529	410		45	2.5	535	602	468		40	2.5	530	530	411		45	2.5	537	604	470		40	2.5	529	529	410	
Green Maize*	5	7.5	466	175	155		10	7.5	483	362	321		5	7.5	469	176	156		5	7.5	478	359	318		5	7.5	471	177	157		10	7.5	478	359	318	
Tomato *	15	15	343	772	676		20	15	360	1080	955		15	15	419	943	847		15	15	356	1068	943		15	15	422	950	854		20	15	356	1068	943	
Vegetables*	25	10	466	1165	1024		30	10	499	1497	1332		25	10	517	1293	1152		30	10	544	1632	1467		25	10	521	1303	1162		30	10	548	1644	1479	
Total	200	-	-	4452	3652	200	200	-	-	5034	4209	200	200	-	-	4740	3940	200	200	-	-	5151	4326	200	200	-	-	4754	3954	200	200	-	-	5166	4341	200

Production Cost:(G-M)(hectarexcropping intensity)

Crop	Maize		Groundnuts		Wheat		Sugar beans		Green Maize		Tomato		Vegetables	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Seed	13	14	14	17	30	30	22	24	4	4	3	3	2	8
Fertilizers	111	126	33	42	116	116	75	84	28	28	69	52	92	76
Chemicals	13	15	5	6	10	10	10	12	4	4	33	25	37	31
Watercharge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tractorhire	0	0	0	0	0	0	0	0	2	2	5	4	6	6
Implement	1	1	1	1	1	1	1	1	1	1	7	7	11	11
Miscellaneous	8	9	7	9	12	12	11	13	2	2	8	6	11	10
Total cost/ha.	146	165	60	75	169	169	119	134	41	41	125	96	165	141

Note : I;cropping intensity, Y;yield, P;price, G;gross income, M;margin/ha, A;Type A, B;Type B
 Type A applicable to II-1-6, IV-4-10andVII-1-12, Type B applicable to I-2-1, II-2-landV-3-3
 * including home consumption, equivalent to half the amount of produce for sale.

Table H-16 Farm Economy (Financial and Economic Prices)
(% increment from current income basis)

unit z\$

Site	Musaverema	Chinyamatumwa	Mashoko	Munjanganja	Magudu	Mabvute
Holding Size (Dry land) A	3.5 ha	3.0 ha	2.4 ha	2.4 ha	2.0 ha	3.6 ha
After Project (Dry land)	3.3 ha	2.9 ha	2.2 ha	2.3 ha	1.8 ha	3.5 ha
Allotment of Irrigable Plot R	0.2 ha	0.1 ha	0.2 ha	0.1 ha	0.2 ha	0.1 ha
Dryland Gross Income	143.0	175.4	155.1	198.6	115.6	194.8
Input	20.3	26.7	16.3	54.6	20.9	51.4
Dryland Margin B	119.7	148.7	138.8	144.0	94.7	143.4
Irrigated Gross Income	3,557	4,033	3,799	4,124	3,745	4,141
Input	1,382	1,413	1,382	1,413	1,382	1,413
Irrigated Margin C	2,175	2,620	2,417	2,711	2,363	2,728
D = R(C-B)	412	247	456	257	454	259
E = AB	419	446	333	346	189	516
F = (A-R)B + RC	831	693	789	603	643	775
Dryland Gross Income	180.8	213.6	190.0	242.8	150.5	231.2
Input	14.2	19.3	10.7	40.1	15.0	38.2
Dryland Margin B'	166.6	194.3	179.3	202.7	135.5	193.0
Irrigated Gross Income	4,452	5,034	4,740	5,151	4,754	5,166
Input	800	825	800	825	800	825
Irrigated Margin C'	3,652	4,209	3,940	4,326	3,954	4,341
D' = R(c'-B')	697	402	752	412	764	415
E' = AB'	583	583	430	486	271	695
F' = (A-R)B' + RC'	1,280	985	1,182	898	1,035	1,110

Note : R; size irrigated plot allocation per farm: R=0.1 for Chinyamatumwa, Munjanganja and Mabvute, R=0.2 for Musaverema, Chinyamatumwa and Magudu.
F : Annual Household Agricultural Income (Financial Price Basis)
F' : Ditto (Economic Price Basis)

Table H-17 Projected Labour Requirement With and Without Project

Project Site	Musaverema		Chinyamatumba		Mashoko		Munjanganja		Magudu		Mabvute		
	C.I.	Mandays	C.I.	Mandays	C.I.	Mandays	C.I.	Mandays	C.I.	Mandays	C.I.	Mandays	
Dryland Holding(ha./farm)	3.5		3.0		2.4		2.4		2.0		3.6		
	Average Mandays/ha												
With Project	Maize	0.55	44	0.60	48	0.47	38	0.60	48	0.61	49	0.51	41
	G'nuts	0.15	18	0.12	14	0.05	6	0.15	18	0.12	14	0.15	20
	Rapoko	0.10	7	0.06	4	0.13	9	0.08	6	0.15	10	0.14	10
	Mhunga	0.10	7	0.17	12	0	0	0.10	7	0.03	2	0.07	5
	Sorghum	0.05	3	0.01	1	0.20	12	0	0	0.06	4	0.04	2
	B'beans	0.01	1	0.01	1	0.05	3	0	0	0	0	0.02	1
	Cotton	0	0	0.01	3	0.05	15	0.02	6	0.03	9	0.06	18
	Sunflower	0.04	2	0.02	1	0.05	4	0.05	4	0	0	0.01	1
	Total Crop/ha	1.00	82	1.00	84	1.00	87	1.00	89	1.00	88	1.00	98
	Total Crop/farm	-	287	-	252	-	209	-	214	-	176	-	353
	Without Project	Maize	0.45	36	0.40	32	0.45	36	0.40	32	0.45	36	0.40
G'nuts		0.25	30	0.20	24	0.25	30	0.20	24	0.25	30	0.20	24
Wheat		0.40	44	0.40	44	0.40	44	0.40	44	0.40	44	0.40	44
S'beans		0.45	36	0.40	32	0.45	36	0.40	32	0.45	36	0.40	32
Green M'ze		0.05	5	0.10	10	0.05	5	0.10	10	0.05	5	0.10	10
Tomato		0.15	21	0.20	28	0.15	21	0.20	28	0.15	21	0.20	28
Vegetables		0.25	31	0.30	38	0.25	31	0.30	38	0.25	31	0.30	38
Total Crop/ha		2.00	203	2.00	208	2.00	203	2.00	208	2.00	203	2.00	208
Total Crop/R ha		-	40	-	21	-	40	-	21	-	40	-	21
Total Crop/Dryland-0.1 ha		-	271	-	244	-	191	-	205	-	158	-	343
Total Management/Farm		-	311	-	265	-	231	-	226	-	198	-	364

unit: R=0.1 for Chinyamatumba, Munjanganja and Mabvute. C.I.: Cropping Intensity
R=0.2 for Musaverema, Mashoko and Magudu.

Table H-18 Monthly Labour Requirement(With Project)

unit : man-days

Type	Crop	Cropping Intensity	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
A (3ha)	Maize	0.40	5	0	0	0	0	0	0	8	4	5	5	5	32	
	G'nuts	0.20	3	2	10	0	0	0	0	0	0	4	2	3	24	
	Wheat	0.40	0	0	0	0	8	4	5	4	10	13	0	0	44	
	S'beans	0.40	8	4	4	4	12	0	0	0	0	0	0	0	32	
	Green M'ze	0.10	0	0	0	0	0	0	2	1	1	1	1	4	10	
	Tomato	0.20	3	3	3	7	5	0	0	0	0	0	0	7	28	
	Veg' bles	0.30	2	2	2	5	3	3	1	2	2	2	8	6	38	
	Subtotal A	2.00	21	11	19	16	28	7	8	15	17	17	31	14	14	208
	Dryland B	1.00	8	8	8	17	10	0	0	0	0	0	11	14	8	84
	0.1A+2.9B	-	25	24	25	51	32	1	1	2	2	2	35	42	25	265
B (2.4ha)	Labor surplus/farm		27	28	27	1	20	51	51	50	50	17	10	27	359	
	Maize	0.45	7	0	0	0	0	0	0	5	8	5	6	5	36	
	G'nuts	0.25	3	2	2	13	0	0	0	0	0	3	4	3	30	
	Wheat	0.40	0	0	0	0	6	6	5	4	9	14	0	0	44	
	S'beans	0.45	0	9	7	7	13	0	0	0	0	0	0	0	36	
	Green M'ze	0.05	0	0	0	0	0	1	0	1	1	1	1	0	5	
	Tomato	0.15	2	3	2	5	4	0	0	0	0	0	3	2	21	
	Veg' bles	0.25	1	2	1	2	5	2	1	1	1	6	8	1	31	
	Subtotal B	2.00	13	16	12	27	28	9	6	11	19	19	29	22	11	203
	Dryland B	1.00	8	8	8	18	10	0	0	0	0	0	12	15	8	87
0.2A+2.2B	-	20	21	20	45	28	2	1	2	2	4	32	37	20	232	
Labor surplus/farm		20	19	20	-5	12	38	39	38	38	36	8	3	20	248	

note : Only one representative case from each type was illustrated.

Table H-19 Indicators of Farm Management per Household (Present Situation at Projected Areas)

Site. No	Musaverema	Chinyamatumwa	Mashoko	Munjanganya	Magudu	Mabvute
Name (Number) of Ward	9	6	2	26	Dowa 6	24 (Dzoro North)
Name of Village	Chingore	Nyamhenge	Rusazu	Vidco 3	Magudu	Mabvute
Average Holding Size (ha/farmer)	3.5	3.0	2.4	2.4	2.0	3.6
Cropping Acreage Composition (%) and Yield Level in Average Year (t/ha)	C.A.P %	yield t/ha	C.A.P %	yield t/ha	C.A.P %	yield t/ha
	55	1.0	47	1.0	60	1.1
	15	0.3	5	0.2	15	0.6
	10	0.4	13	0.3	8	0.6
	10	0.4	0	0.5	10	0.8
	5	0.4	20	0.6	0	0.5
	1	0.2	5	0.1	0	0.2
	0	0.3	5	1.1	2	1.0
C.A.P %	yield t/ha	C.A.P %	yield t/ha	C.A.P %	yield t/ha	
4	0.5	5	0.5	5	0.3	
530	562	412	512	297	750	
Annual Input Cost / farmer / ha* (Z\$)	29	39	33	69	54	65
Gross Margin from Crops* (Z\$)	429	446	333	346	189	516
Gross Margin from Cattle Sales* (Z\$)	166	32	140	54	66	116
Total Farm Income* (Z\$)	595	478	473	400	317	632
Total-Off-Farm Income* (Z\$)	136	159	211	646	199	133
Total Income per Household* (Z\$)	731	637	684	1,046	516	745
Total Income per Family Member** (Z\$)	101	85	89	190	71	96
Economic Return for Family Labour***	1.5	1.8	1.3	1.8	1.1	1.3

source : results from interview survey plus information from extension workers.
 * expressed on annual, per household basis, in Z\$
 ** in Z\$ per year
 *** in Z\$ per man-day

Table H-20 Results of Interview Survey 1) Crop Production and Utilization

Name of Village Holding/Household	unit : A, Q : ton, H : ha, Y : ton/ha, V : Z\$																	
	Chingore (I-2-1) 3.0~6.0ha		Chimhuru (II-1-6) 2.0~6.2ha		Maziwa (II-2-1) 2.0~4.0ha		Ranga (W-4-10) 1.6~3.2ha		Chikumba (V-3-3) 1.2~2.4ha		Mabvute (VI-1-12) 3.2~4.8ha							
Family Composition *	2~10, 5~22, 1~17		3~8, 2~14, 2~4		3~11, 3~10, 0~2		2~3, 1~8, 0~1		2~7, 4~13, 0~5		5~17, 7~21, 0~7							
Crop Harvested	A	H	Y	A	H	Y	A	H	Y	A	H	Y						
Maize	1.5~3.2	0~0.5	0	1.0~3.0	0.2~2.8	0.1~0.9	1.0~3.0	0.2~1.9	0.1~0.6	0.8~1.6	0.5~4.0	0.6~2.9	0.4~2.0	0~0.5	0~0.3	1.6~2.4	0.7~5.5	0.5~2.3
Groundnuts	0.4~1.8	0~0.1	0	0.2~0.5	0~0.2	0~1.0	0.3~0.4	0~0.3	0~0.7	0.2~0.6	0.4~0.7	1.0~1.8	0~0.4	0~0.1	0~0.4	0.3~0.8	0~0.6	0~0.8
Rapoko	0.4~0.6	0	0	0.3~1.0	0~0.9	0~0.4	0~0.5	0	0	0~0.2	0~0.3	0~2.0	0~0.4	0	0	0~1.2	0~0.3	0~0.2
Mhunga	0.4~0.6	0~0.1	0~0.2	0~1.0	0~1.9	0~1.9	—	—	—	0~2.0	0~1.5	0~0.7	0~0.2	0~0.1	0~0.5	0~0.8	0~2.0	0~2.5
Sorghum	0~0.6	0	0	—	—	—	—	—	—	—	—	—	0~0.4	0~0.5	0~1.2	—	—	—
Barbara Beans	0~0.1	0	0	0~0.2	0	0	0.2~0.3	0~0.1	0~0.5	—	—	—	—	—	—	0~0.6	0~0.1	0~0.3
Cotton	—	—	—	0~1.0	0~0.5	0~0.5	—	—	—	—	—	—	0~0.2	0~0.1	0~0.3	0~1.0	0~0.2	0~0.2
Sunflower	0~0.4	0.1~0.9	0.5~2.3	0~1.0	0~0.2	0~0.2	—	—	—	0~0.6	0~0.6	0~1.1	—	—	—	—	—	—
Crop Sold	Q	V	R	Q	V	R	Q	V	R	Q	V	R	Q	V	R	Q	V	R
Maize	0	0	0	0	0	0	0	0	0	0~0.3	0~563	G	0	0	0	0	0	0
Groundnuts	0	0	0	0	0	0	0	0	0	0~0.6	0~343	G	0~0.1	0~72	G	0~0.3	0~198	0
Rapoko	0	0	0	0~0.9	0~240	G	0	0	0	0	0	0	0	0	0	0	0	0
Mhunga	0	0	0	0~1.6	0~360	G	—	—	—	0~1.1	0~285	G	0	0	0	0	0	0
Cotton	—	—	—	0~2.5	0~255	C	—	—	—	—	—	—	0~0.1	0~150	C	0~0.2	0~109	C
Sunflower	0~0.5	0~170	G	0~0.2	0~72	G	—	—	—	—	—	—	—	—	—	—	—	—
Crop Reserved	Q	V	U	Q	V	U	Q	V	U	Q	V	U	Q	V	U	Q	V	U
Maize	0~0.5	0~115	F	0.2~2.8	41~680	F	0.2~1.9	56~594	F	0.5~1.0	113~228	F	0~0.5	0~120	F	0.7~5.5	96~1512	F
Groundnuts	0~0.1	0~72	F	0~0.2	0~120	F	0~0.3	0~318	F	0.1~0.5	106~530	F	0	0	0	0~0.3	0~318	F
Rapoko	0	0	0	0~0.4	0~152	P	0	0	0	0~0.3	0~112	P	0	0	0	0~0.3	0~103	P
Mhunga	0	0	0	0~0.3	0~78	F	—	—	—	0~0.4	0~116	F	0~0.1	0~29	F	0~2.0	0~570	F
Sorghum	0	0	0	—	—	—	—	—	—	—	—	—	0~0.5	0~110	F	—	—	—
Barbara Beans	0	0	0	—	—	—	0~0.1	0~90	F	—	—	—	—	—	—	0~0.1	0~90	F

Note: * Figures show number of adults, children and outmigrants, respectively. A: Area Harvested, H: Harvested Amount 1986/87 Y: Yield (tons/ha.)
 Q: Quantities, V: Value in Z\$, R: Routes G: Grain Marketing Board Prices, C: Cotton Marketing Board Prices, U: Usage or Utilization,
 F: for Food, P: for Livestock
 Source: interview survey results by the team

Table H-21 Results of Interview Survey 2) General Indicators of Farm Management and Economy

unit : Q ; ton per household per annum, T ; times per annum

Name of Village	Chingore (I-2-1)			Chimunu (II-1-6)			Maziwa (II-2-1)			Ranga (N-4-10)			Chikumba (V-3-3)			Mabvute (VI-1-12)				
	C	Q	R	C	Q	R	C	Q	R	C	Q	R	C	Q	R	C	Q	R		
Household Sales of Produce Per 1982~86average (per household, per annum)	M	0.9	G	M	1.6	G-A	M	0.4	A	M	2.4	G	M	0.3	L	M	0.4	G-L		
	Gr	-	-	S	0.3	G	G	0.2	G	Gr	0.1	L	Gr	0.2	L	Gr	0.2	L		
	S	0.0	G	C	0.1	C	R	-	-	R	0.0	G	S	0.0	L	C	0.2	C		
Drought Relief per Household	K	Q	T	K	Q	T	K	Q	T	K	Q	T	K	Q	T	K	Q	T		
1982	M-S	0.3~0.6	6~7	-	-	-	-	-	-	M-S	0.1~0.4	1~3	M-S	0.1~0.9	3~10	M-S	1.1~1.8	10~12		
1983	M	0.1~0.7	3~5	M	0.2~0.5	4	M-S	0.1~0.5	5~8	M-S	0.1~0.4	1~3	M-S	0.1~0.4	2~7	-	-	-		
1986	-	-	-	-	-	-	-	-	-	-	-	-	M	0.2~0.4	2~5	-	-	-		
1987	M-S	0.1~0.2	2~3	-	-	-	M	0.1	1	-	-	-	M	0.1~0.3	2~3	M	0.2~0.4	2		
Cattle Loss per Household [average number]	C	0~10	(6)	0	0	(0)	0	0	(0)	0	0	(0)	0	0	(0)	0	0	(0)		
1983	0	0	7	(4)	0	0	1	(0)	0	0	5	(2)	0	0	3	(1)	0	0	6	(3)
1985	0	0	10	(2)	0	0	0	(0)	0	0	5	(1)	0	0	0	(0)	0	0	0	(0)
1986	0	0	3	(1)	0	0	0	(0)	0	0	1	(1)	0	0	0	(0)	0	0	1	(0)
Total 1982~(84)~86	0	0	35	(14)	0	0	1	(0)	0	0	5	(3)	0	0	8	(3)	0	0	6	(3)
Recent Yield Levels (t/ha)	B	O	P	B	O	P	B	O	P	B	O	P	B	O	P	B	O	P		
Maize	2.2~2.8	0.4~1.1	0	0.9~3.6	0.4~1.3	0.5	0.8~4.5	0.6~1.0	0	1.2~2.7	0.9	0.2	0.6~2.2	0.3~0.9	0	2.0~4.6	0.4~2.2	0.4		
Groundnuts	0.5~1.6	0.2~0.3	0	0.4~0.9	0.2~0.4	0	0.2~0.5	0.1~0.3	0	0.5~1.4	0.3~0.9	0.2	0.2~1.0	0.1~0.4	0	0.4~1.0	0.4~0.6	0.3		
Rapoko	0.5~0.9	0.2~0.5	0.1	0.5~0.9	0.3~0.4	0	0.3~0.6	0.2~0.3	0	0.6~2.3	0.4~0.9	0.2	0.4~0.8	0.2~0.4	0	0.9~3.0	0.5~1.3	0.3		
Mhunga	0.7~0.9	0.3~0.4	0.1	0.9~1.5	0.6~0.8	0.2	-	-	-	0.6~1.4	0.5~0.9	0.5	0.5	0.3	0	0.9~1.4	0.6~1.2	0.5		
Sorghum	0.7	0.4	0.1	-	-	-	-	-	-	-	-	-	0.9	0.7	0.5	-	-	-		
Bambarabean	0.5	0.2	0	0.5~1.4	0.3~0.6	0.3	0.1~0.3	0.1	0	-	-	-	-	-	-	0.3	0.1	0		
Cotton	-	-	-	0.4	0.2	0	-	-	-	-	-	-	0.7	0.4	0	0.9	0.5	0.3		
Sunflower	0.9	0.5	0.2	0.3	0.2	0.1	-	-	-	-	-	-	-	-	-	-	-	-		

Note: C: Crop, Q: Quantity, R: Route of Marketing, K: Kind, T: Frequency of distribution, B: Bumper crop, O: Ordinary crop, P: Poor crop, Gr: Groundnuts, M: Maize, S: Sugarbeans. Source: interview survey results by the team

Table H-22 Results of Interview Survey 3) Household Budget and Assets

Unit : Z \$

Name of Village	Chingore (I-2-1)	Chimhunu (II-1-6)	Maziwa (II-2-1)	Ranga (IV-4-10)	Chikumba (V-3-3)	Mabvute (VII-1-12)
Remittance	0 ~ 2,400	240 ~ 570	0 ~ 960	340 ~ 1,080	240 ~ 1,200	0 ~ 1,080
Sales to G. M. B.	0 ~ 170	40 ~ 385	0 ~ 61	265 ~ 795	0 ~ 90	0 ~ 960
Home Beer Brewing	0 ~ 64	0	0 ~ 1,440	0 ~ 15	0 ~ 420	0 ~ 6,240*
Labour Work	0	0	0	0 ~ 20	0 ~ 180	0 ~ 182
Cattle Sales	0 ~ 376	140 ~ 180	0	0 ~ 54	0 ~ 780	0 ~ 1,200
Drought Relief.	0 ~ 80	0	0 ~ 60	0	80	80
Gardening etc.	0	0	0	0 ~ 80	0	0 ~ 400
Total Annual Income	80 ~ 2,570	460 ~ 1,015	100 ~ 1,561	674 ~ 1,446	600 ~ 2,060	682 ~ 7,920
Seed	48 ~ 98	12 ~ 91	48 ~ 100	26	15 ~ 70	41 ~ 80
Fertilizers	0 ~ 73	0 ~ 215	0 ~ 70	22 ~ 122	0 ~ 49	0 ~ 725
Farm Implement	0 ~ 29	0 ~ 8	0 ~ 5	9 ~ 140	0 ~ 10	13 ~ 35
Labour Hiring	0	0	0	0	0 ~ 140	0 ~ 960
General Expense	720 ~ 2,160	320 ~ 760	390 ~ 620	390 ~ 560	0 ~ 1,740	560 ~ 4,800*
Education	2 ~ 582	20 ~ 300	4 ~ 1,062	215 ~ 860	20 ~ 317	20 ~ 1,320
Total Annual Expense	770 ~ 2,840	540 ~ 1,155	460 ~ 1,561	674 ~ 1,446	655 ~ 2,060	682 ~ 7,920
Housing	800 ~ 1,700	500 ~ 4,700	600 ~ 3,000	600 ~ 6,300	300 ~ 1,000	700 ~ 3,100
Household Appliances	120 ~ 580	60 ~ 650	170 ~ 750	40 ~ 561	0 ~ 421	80 ~ 1,100
Blair Type Latrine	30 ~ 80	0 ~ 30	0 ~ 50	25	0 ~ 100	96 ~ 192
Oxen	600 ~ 5,100	2,100 ~ 3,000	0 ~ 9,000	1,800 ~ 3,300	0 ~ 4,600	1,800 ~ 13,500
Farm Implement	405 ~ 1,389	475 ~ 1,679	270 ~ 850	1,248 ~ 3,524	76 ~ 443	303 ~ 1,159
Kitchen Utensils etc.	340 ~ 420	100 ~ 420	180 ~ 600	150	260 ~ 500	340 ~ 740
Total Household Assets	3,525 ~ 8,751	4,686 ~ 9,486	1,680 ~ 14,040	5,426 ~ 11,584	636 ~ 6,812	3,889 ~ 19,791

Source : interview survey results by the team

* Commercial home-beer brewing sales and inputs

Table H-23 Results of Interview Survey

4) Farm Labour and Input Utilization

Unit : Labour Supply ; man-days, Input Supply ; Kg, Z\$

Name of Village	Chingore (1-2-1)	Chimhunu (11-1-6)	Maziwa (11-2-1)	Ranga (IV-4-10)	Chikumba (V-3-3)	Mabvute (VII-1-12)
Labour Supply / ha						
Maize : season	Nov. ~ Mid Jun.	Late Sept. ~ Jun.	Mid Oct. ~ Early Jun	Mid Oct. ~ Early May	Late Oct. ~ Jun.	Mid Oct. ~ Early Jun
man-days	80	95	114	92	98	120
Groundnuts season	Nov. ~ May	Oct. ~ May	Mid Oct. ~ May	Late Oct. ~ Mid Apr.	Nov. ~ May	Late Sept. ~ Mar.
man-days	92	116	117	98	112	126
Rapoko : season	Late Oct. ~ Mid Jun.	Late Sep. ~ Mid May	Late Oct. ~ May	Late Oct. ~ Mid Apr.	Late Sep. ~ Mid May	Nov. ~ Apr
man-days	88	96	102	92	94	120
Mhunga : season	Late Oct. ~ Mid Jun.	Oct. ~ Mid May	—	Mid Oct. ~ Early May	Late Oct. ~ Mid May	Oct. ~ Apr
man-days	76	84	—	84	100	114
Sorghum : season	Nov. ~ Jun	—	—	—	Oct. ~ Late May	—
man-days	72	—	—	—	94	—
Banborabean : season	Late Dec. ~ Mid Jun.	Late Oct. ~ Apr.	Dec. ~ Mid Jun.	—	—	Dec. ~ Mid May.
man-days	76	68	96	—	—	94
Cotton : season	—	Mid Sep. ~ mid Jun.	—	—	Late Nov. ~ Mid Jun.	Oct. ~ Mid Jun.
man-days	—	344	—	—	302	332
Sunflower : season	Dec. ~ May	Dec. ~ Late May	—	Ear. Dec. ~ Late May	—	Dec. ~ Apr.
man-days	84	98	—	90	—	84
Vegetables : season	—	—	—	Mid Apr. ~ Aug	—	—
man-days	—	—	—	2530	—	—
Input Supply { seed	50kg, 45z\$	70kg, 75z\$	50kg, 45z\$	50kg, 45z\$	40kg, 51z\$	60kg, 55z\$
per ha. { fertilizer	50kg, 24z\$	120kg, 64z\$	50kg, 23z\$	100kg, 53z\$	—	100kg, 46z\$
{ seed	—	10kg, 8z\$	—	—	10kg, 6z\$	10kg, 6z\$
Cotton { fertilizer	—	150kg, 77z\$	—	—	150kg, 72z\$	30kg, 126z\$
Groundnuts Seed	—	20kg, 10z\$	20kg, 10z\$	50kg, 26z\$	12kg, 6z\$	—
Sunflower Seed	seed 4kg, 6z\$	4kg, 6z\$	—	4kg, 6z\$	12kg, 15z\$	—

source : interview survey results by the team.

Table H-24 Estimated Improvement in Food Security

unit: ton, or ton/head

Site	Musaverema	Chinyamatumba	Mashoko	Munjanganja	Magudu	Mabvute	Total
Increased Grain Production (ton)							
Maize	110	88	48	85	159	189	-
Wheat	51	49	21	47	72	99	-
Groundnuts	26	19	11	17	37	37	-
Sugar beans	41	35	17	33	57	71	-
Decreased Grain Production (ton)							
Sorghum	1	1	2	0	2	2	-
Mhunga	1	4	1	3	1	3	-
Rapoko	1	2	1	3	2	8	-
Increment of Production	225	184	83	176	320	374	1 362
Registered Population Eligible for Relief Supply	2 481	5 991	4 524	4 230	2 709	5 562	25 497
Estimated Drought Relief Food Requirements	0.060	0.052	0.181	0.039	0.073	0.040	-
Coverable Population by the Production Increment	3 750	3 540	460	4 510	4 380	9 350	25 990
Estimated Milage (km) Saving in Drought Relief	12 600	4 200	2 600	4 200	9 000	7 500	40 100
Food Security: percapita Food Increase in the Ward	0.056	0.025	0.014	0.033	0.070	0.067	-

Table H-25 Costs in Economic Price

unit : thousand z\$

Site	Musaverema		Chinyamatunwa		Mashoko		Munjanganja		Magudu		Mabvute	
	Total	L/C*	Total	L/C	Total	L/C	Total	L/C	Total	L/C	Total	L/C
Dam Total	1,299	120	1,105	121	1,242	166	1,242	149	1,116	133	1,265	137
site preparation	62	6	53	6	59	8	59	7	53	6	60	6
foundation treatment	168	23	136	18	141	19	116	15	102	14	178	25
embankment	781	56	668	71	716	96	645	70	627	69	702	77
spillway	246	29	174	23	289	38	381	51	277	38	223	23
intake facility	42	6	74	3	37	5	41	6	57	6	102	6
Conveyance Total	264	22	885	43	51	5	229	19	423	34	1,215	53
site preparation	12	1	42	2	2	0	11	1	21	2	6	0
pump&pipeline	-	-	725	21	-	-	-	-	-	-	1,059	30
canal, pump installment	233	19	76	16	33	3	200	16	379	29	80	16
night storage	19	2	42	4	16	2	18	2	23	3	70	7
MEWRD Total	1,563	142	1990	164	1,293	171	1,471	168	1,539	167	2,480	190
Field Work Total	451	63	372	56	174	27	330	51	485	84	740	112
site preparation	22	3	18	3	8	1	15	4	35	16	35	5
land grading	103	10	21	2	10	1	20	2	31	4	44	5
distribution canal	111	14	121	15	35	4	99	12	180	22	288	35
drainage canal	74	13	60	10	21	4	50	9	71	13	147	26
farm road	82	16	90	17	44	9	78	15	101	20	154	31
farm facilities	59	7	62	9	56	8	68	9	67	9	72	10
Total Constr'Work(A)	2,014	205	2,362	220	1,467	198	1,801	219	2,024	251	3,220	302
Engineering etc(B)	488	257	454	219	418	208	440	234	456	253	524	308
(A)+(B)×1.1	2,752	508	3,097	483	2,074	447	2,465	498	2,728	554	4,118	671
O.M.total	741	123	953	174	152	66	274	76	219	74	1,995	261
staffing	55	55	119	119	55	55	55	55	55	55	119	119
equipment	43	5	393	37	30	4	38	3	43	7	1,215	117
fuel, etc	-	-	343	32	-	-	-	-	-	-	1,147	109
spareparts etc.	43	5	50	5	30	4	38	3	43	7	68	8
replacement	643	63	441	18	67	7	181	18	121	12	661	25
pumps etc.	-	-	381	12	-	-	-	-	-	-	588	18
silt removal	643	63	60	6	67	7	18	18	121	12	73	7

* F/C=Total-L/C(equal to F/C in Project Cost)

** a foreman and E.W. are financed for 5 years.