II-J

Cost Estimation

II-J. Cost Estimation

Material & Construction Cost of Road, Bridge

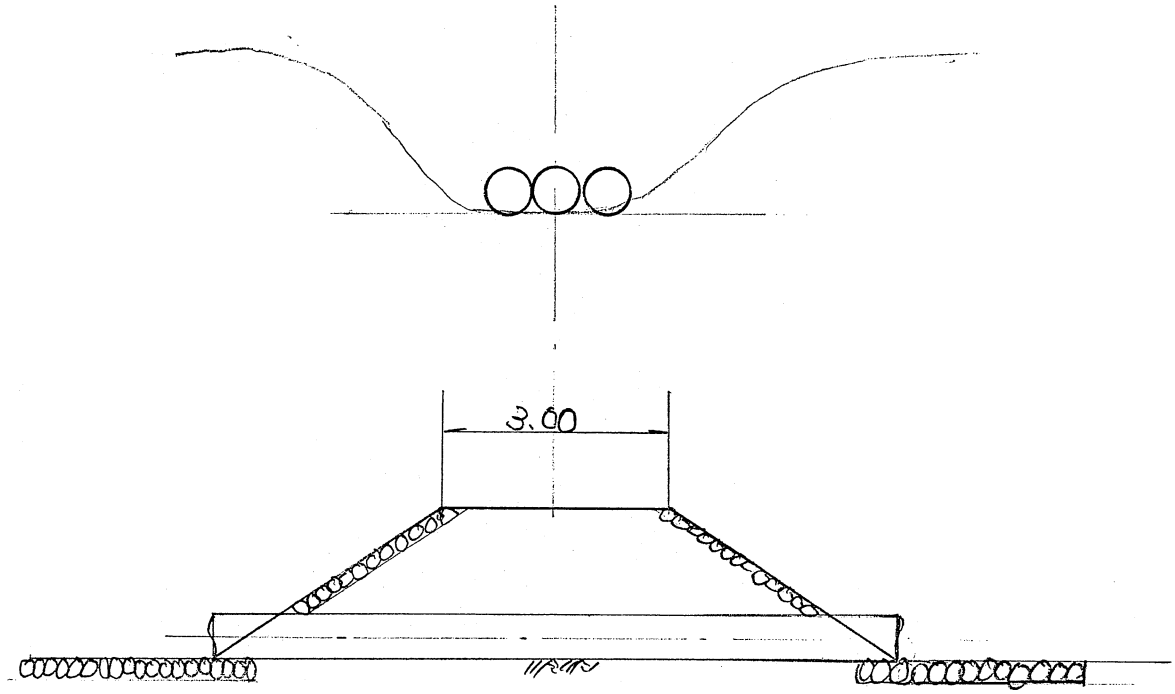
Supplier Name: Minitry of Public Works
Supplier Address:

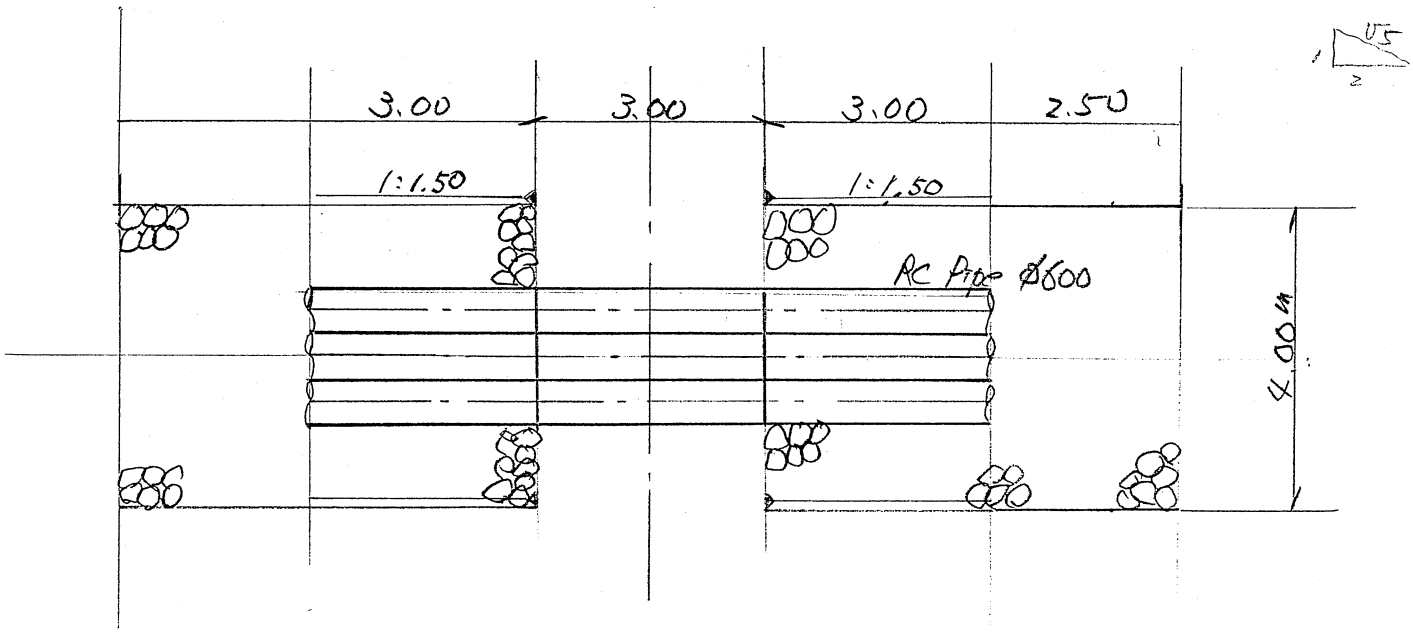
Date: July 31, 2000
Unit Price: (Malawi Kwacha)

No.	Description	Specifications	Unit	Unit Price	Remarks
Ministry of Water					
1	Construction Cost				
	1. Main road (M)	1. sholder 1.5m each	km	16-18 million	
		2. carriage 6.7m, bitmen			
		3. drain to drain: 6.7m+3m+3m			
	2. Secondary road	1. sholder 1.5m each	km	rehabilitation: 120,000	
	Tertially road	2, carriage 5.5m, earth			
	District road	3. Darin to drain: 8.5m			
	3. Concrete Bridge	for main road: approx. 5.0m width	m	48,000.00	
	4. Concrete Bridge	for S, T, D road: 3.8m width	m	32,000.00	
2	Gabion net	2m x 1m x 1m		3,400.00	
3	Cement	portland	50kg	400.00	
4	Concrete	ready mix	m3	5,000.00	
5	Crushed stone		m3	1,000.00	
6	Sand	5 ton rolley, 4.5m3		2,000.00	
7	Earth Work				
	Embankment	Dump & Roller	m3	200.00	
	Excavation	Backhoe	m3	50.00	
8	Milala Dam				(US$)
	1) Masonry	4x1x20	m3	2,500.00	200,000
	2) Dredging	1,000x2x5=10,000	m3	100.00	1,000,000
	3) Intake Pipe	RC300 dia. X 10m	m3	1,000.00	10,000
	4) Concrete	4 m3	m3	5,000.00	20,000
	5) Embarkment	2000	m3	200.00	400,000
	Sub-total				1,630,000
	6) Miscellaneous	20%			326,000
					39,120
	Total				40,000

* 1US$ = 50MK

Road Crossing

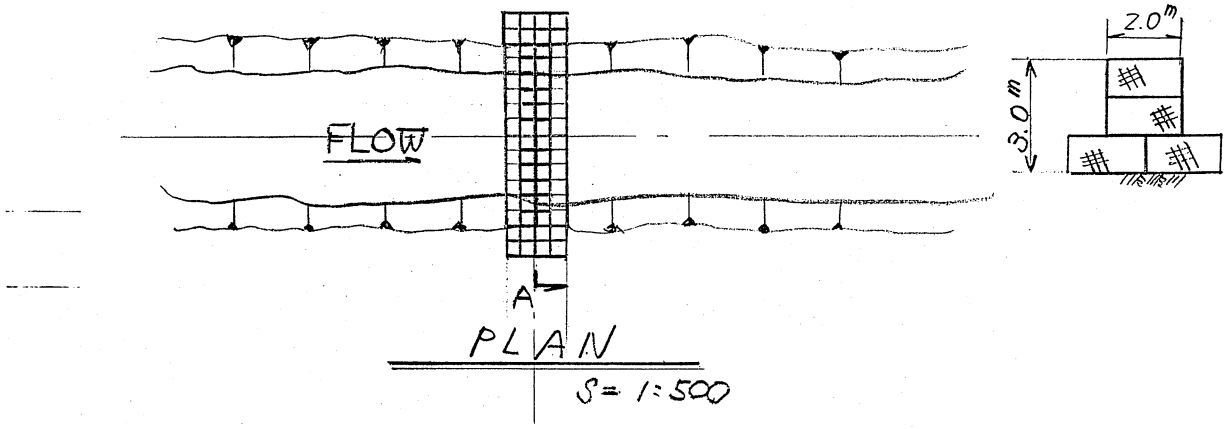




Pipe Ø 600	9.00 m × 3 Nos. × 1,400 MH × 1.50 =	56,700 MH
Gravel	3 × 4 × 2 × 0.50 = 12 m³	
	(3 × 4 − 3 × 1.8) √5 × 2 = 29.5	Total 42 m³
II-J-2	42 m³ × 1,000 MH × 1.50 =	63,000
Total	56,700 × 63,000 = 119,700 MH ≒	2400 US$

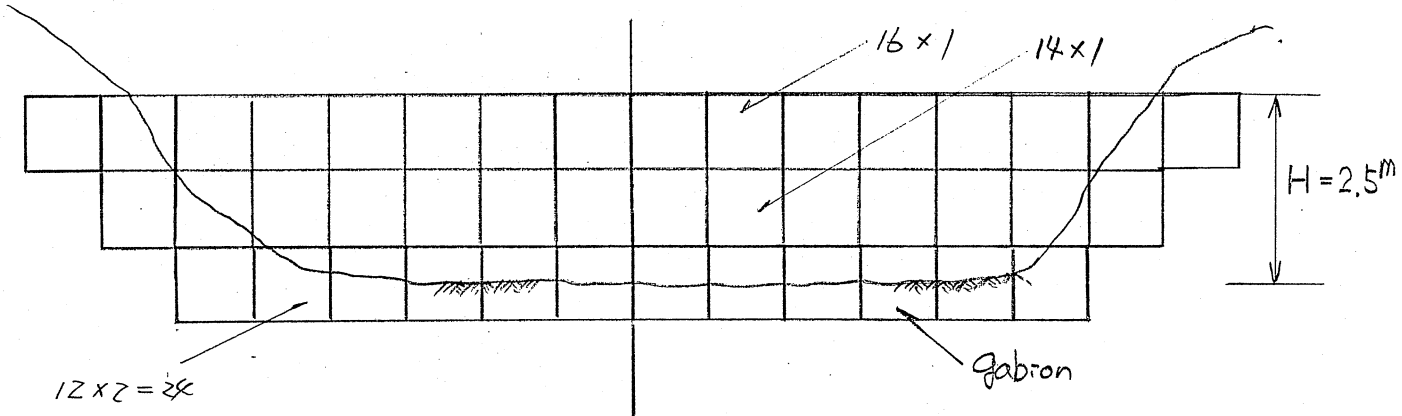
PLAN OF LARGE WEIR TYPE A

(for Lundzu and Nkokodzi Rivers)



PLAN

S= 1:500



SECTION A-A

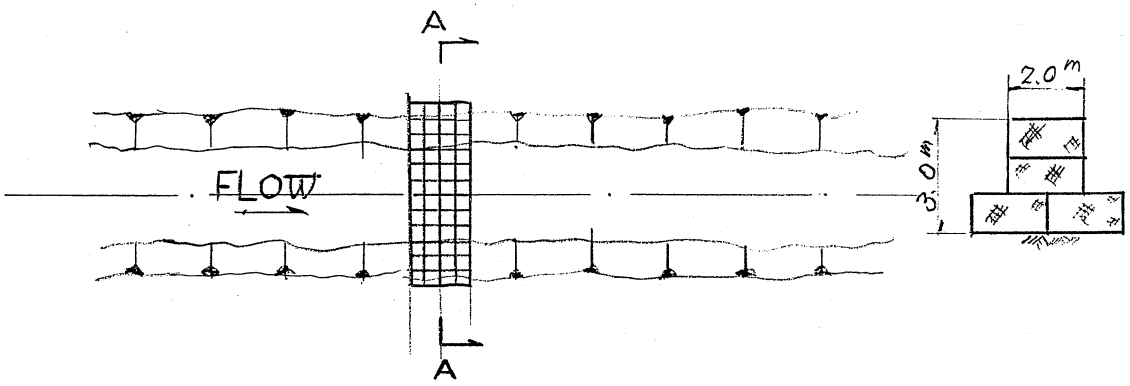
S= 1:100

Gabion Net	(16 + 14 + 24) x 1.10	x 3,400 MK	≒ 202,000 MK
Gravel	60 Nos x 2.0 x 1.0 x 1.0	x 1,000 MK	≒ 120,000 MK
Total			322,000 MK
Miscellaneous	25 %		80,500 MK
Grand - Total			402,500 MK
			≒ 8,050 U$

(1U$ = 50 MK)

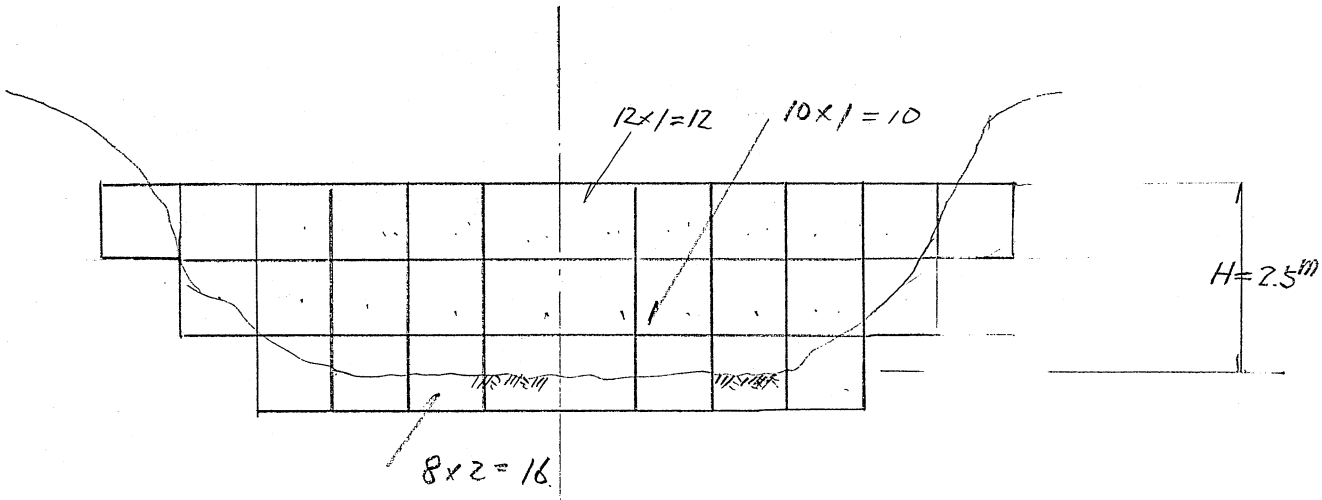
PLAN OF SMALL WEIR. TYPE B

(for Tributaries)



PLAN

S = 1:500



SECTION A-A

S=1:100

Gabion Net	$(12+10+16) \times 1.1 \times 3,400$ MK (42)	=	142,800 MK
Gravel	42 Nos × 2.0×1.0×1.0 × 1.000 MK	=	84,000 MK
Total			226,800 MK
Miscellaneous	25%		56,700 MK
Grand Total			283,500 MK
		≒	5,900
			(1 US$ = 50 MK)

Cost of IGAs Development Plan

Date: August 10, 2000
Price: Malawi Kwacha (MK)

Description	Specification	Unit	Required Q'ty	Unit Price	Amount
1 Dimba Development Plan (17 villages, 20 farmers/village)					
1 Input					
1 Seeds	vegetables, 10kinds	pack	200	30	6,000
2 Fertilizer	23-21+4S; 4bags/ha	50kg/bag	10	954	9,158
	CAN; 4bags/ha	50kg/bag	10	754	7,238
	Urea; 2 bags/ha	50kg/bag	5	800	3,840
3 Chemicals	2kinds	500ml/bottle	6	500	3,000
2 Agricultural tools					
1 Hoe	with handle	unit	20	125	2,500
2 Sickle	with handle	unit	20	100	2,000
3 Treadle pump	10m head, 25m discharge	set	20	4,350	87,000
4 Watering can	18 litre, tin made	unit	40	180	7,200
3 Harveting, Transportation					
1 Basket	bamboo, 40cm dia.	unit	40	250	10,000
2 Basket	bamboo, 60cm dia.	unit	40	350	14,000
3 Bicylce	heavy	unit	3	7,000	21,000
4 Materials for Retail Shop (3 shops); $3m^2$x2mH per shop					
1 Material for pole	wood pole, dia. 125cm, 10m	pc	6	120	720
2 Timber for base	wood, 8x1x5.4m	pc	18	176	3,168
3 Mat	straw, 1.2m x 1.8m	pc	6	55	330
Sub-total (per village)					177,155
1st Sub-total (3 villages)					531,464
2nd Sub-total (5 villages)					885,774
3rd Sub-total (2 villages)					354,310
4th Sub-total (3 villages)					531,464
5th Sub-total (4 villages)					708,619
Total (17 villages, 340 famrers)					3,011,632
2 Fowl Rearing (24 villages, 10farmers/village)					
1 Input					
1 Chicken	hen	head	4	100	400
	cock	head	1	140	140
2 Guenia fowl	hen	head	3	350	1,050
	cock	head	1	400	400
3 Feed	Growers mash	50kg	1	655	655
	Chick mash	50kg	1	810	810
	Layers mash	50kg	1	700	700
4 Vaccine	2 kinds	500ml/bottle	1	500	500
2 Chicken house					
1 Brick	30x10x15cm, for wall	pc	1,000	1.0	1,000
2 Thatch	for roof	bandle	5	20	100
3 Door	wood	unit	2	50	100
4 Window	bamboo, wood	unit	4	20	80
Sub-total (per farmer)					5,935
1st Sub-total (3 villages, 30 farmers)					178,050
2nd Sub-total (6 villages, 60 farmers)					356,100
3rd Sub-total (5 villages, 50 farmers)					296,750
4th Sub-total (5 villages, 50 farmers)					296,750
5th Sub-total (5 villages, 50 farmers)					296,750
Total (24 villages, 240 farmers)					1,424,400
3 Storage & Primary Processing (24 villages, 20 farmers/village)					
1 Input					
1 Hoe	with handle	unit	20	125	2,500
2 Sickle	with handle	unit	20	100	2,000
3 Shovel	with handle	unit	20	1,000	20,000
4 Mat for drying	straw or bamboo	unit	40	55	2,200
5 Pealing knife		unit	20	250	5,000
6 Kettle	for pressure	unit	4	600	2,400
7 Kettle	for boiling	unit	4	800	3,200
8 Squeezer	for sugar cane, manual type	unit	4	5,000	20,000
9 Vinyl bag (small)	product container	100pc	100	50	5,000

10 Cooking tools		set	4	3,000	12,000
2 Harveting, Transportation					
1 Basket	bamboo, 40cm dia.	unit	40	70	2,800
2 Basket	bamboo, 60cm dia.	unit	40	120	4,800
3 Bicylce	heavy	unit	2	7,000	14,000
3 Materials for Retail Shop (2 shops); $3m^2$x2mH per shop					
1 Material for pole	wood pole, dia. 125cm, 8m	pc	4	120	480
2 Timber for base	wood, 8x1x5.4m	pc	12	176	2,112
3 Mat	straw or bamboo	pc	4	55	220
Sub-total (per village)					98,712
1st Sub-total (3 villages)					296,136
2nd Sub-total (6 villages)					592,272
3rd Sub-total (5 villages)					493,560
4th Sub-total (5 villages)					493,560
5th Sub-total (5 villages)					493,560
Total (24 villages, 480 farmers)					2,369,088
4 Bee-keeping (11 villages, 10-20 farmers)					
1 Input Materials					
1 Bee hive	Kenyan type	unit	10	1,600	16,000
2 Bee suit		set	2	1,200	2,400
3 Harvesting knife		unit	2	80	160
4 Bee wax		kg	5	150	750
5 Wire		m	50	40	2,000
2 Carpenter Tools					
1 Saw	for wood, double brades	unit	2	1,500	3,000
2 Steel scale		pc	2	500	1,000
3 Ink pad	for carpenter	unit	2	1,000	2,000
4 Plumb		unit	2	250	500
5 Drill	for carpenter, large	unit	2	500	1,000
	for carpenter, small	unit	2	300	600
6 Hammer	1kg, iron	unit	2	660	1,320
	wood type	unit	2	300	600
7 Nail		kg	5	36	180
8 Chisel	for wood	set	2	2,500	5,000
9 Tape measure	steel, 5m	unit	2	150	300
Sub-total (per village)					36,810
1st Sub-total (3 villages)					110,430
2nd Sub-total (3 villages)					110,430
3rd Sub-total (0 villages)					0
4th Sub-total (3 villages)					110,430
5th Sub-total (0 villages)					0
Total (11 villages, 110-220 farmers)					331,290
Each Year & Five Years Total					
1st Sub-total					1,116,080
2nd Sub-total					1,944,576
3rd Sub-total					1,144,620
4th Sub-total					1,432,204
5th Sub-total					1,498,929
Total					7,136,410

Beneficiary	Number of village	Member of G	Total farmer	price per farmer (MK)
1 Dimba Divelopment	17	20	340	8,858
2 Fowl Rearing	24	10	240	5,935
3 Storage & Primary Proce	24	20	480	4,936
4 Bee-keeping	11	20	220	1,506
Total			1,280	5,575

1 US$ = 50 MK

Cost of Capacity Building & Technology Transfer

Date: August 10, 2000
Price: Malawi Kwacha (MK)

Description	Specifications	Unit	Required Q'ty	Unit Price	Amount
1. Dimba Development (17 villages)					
1 Selection of Dimba					
1 FA		M/D	3	100	300
2 RDP		M/D	1	150	150
3 ADD		M/D	1	200	200
2 Establishment of Group					
1 CDA		M/D	5	150	750
2 FA		M/D	5	100	500
3 Technology Transfer					
1 FA		M/D	15	100	1,500
2 RDP		M/D	3	150	450
3 ADD		M/D	3	200	600
4 Training of O&M		M/D			0
1 CDA		M/D	9	150	1,350
2 FA		M/D	9	100	900
Sub-total (per village)					6,700
1st Sub-total (3 villages)					20,100
2nd Sub-total (5 villages)					33,500
3rd Sub-total (2 villages)					13,400
4th Sub-total (3 villages)					20,100
5th Sub-total (4 villages)					26,800
Total (11 villages)					113,900
2. Fowl Rearing (24 villages)					
1 Selection of Village					
1 FA		M/D	2	100	200
2 RDP		M/D	1	150	150
3 ADD		M/D	1	200	200
2 Establishment of Group					
1 NGO		M/D	3	300	900
2 FA		M/D	3	100	300
3 Technology Transfer					
1 NGO		M/D	15	300	4,500
2 FA		M/D	15	100	1,500
4 Training of O&M					
1 NGO		M/D	3	300	900
2 FA		M/D	3	100	300
Sub-total (per village)					8,950
1st Sub-total (3 villages)					26,850
2nd Sub-total (6 villages)					53,700
3rd Sub-total (5 villages)					44,750
4th Sub-total (5 villages)					44,750
5th Sub-total (5 villages)					44,750
Total (24 villages)					214,800
3. Storage & Primary Processing (24 villages)					
1 Selection of Village					
1 HFA		M/D	2	100	200
2 RDP		M/D	1	150	150
3 ADD		M/D	1	200	200
2 Establishment of Group					
1 HFA		M/D	3	100	300
2 FA		M/D	3	100	300
3 Technology Transfer					
1 HFA		M/D	9	100	900
2 FA		M/D	9	100	900
4 Training of O&M					
1 HFA		M/D	3	100	300
2 FA		M/D	3	100	300
Sub-total (per village)					3,550

1st Sub-total (3 villages)					10,650
2nd Sub-total (6 villages)					21,300
3rd Sub-total (5 villages)					17,750
4th Sub-total (5 villages)					17,750
5th Sub-total (5 villages)					17,750
Total (24 villages)					85,200
4. Bee-keeping (11 villages)					
1 Selection of Village					
1 HFA		M/D	2	100	200
2 RDP		M/D	1	150	150
3 ADD		M/D	1	200	200
2 Establishment of Group					
1 HFA		M/D	3	100	300
2 FA		M/D	3	100	300
3 Technology Transfer					
1 HFA		M/D	9	100	900
2 FA		M/D	9	100	900
4 Training of O&M					
1 HFA		M/D	3	100	300
2 FA		M/D	3	100	300
Sub-total (per village)					3,550
1st Sub-total (3 villages)					10,650
2nd Sub-total (3 villages)					10,650
3rd Sub-total (0 villages)					0
4th Sub-total (3 villages)					10,650
5th Sub-total (0 villages)					0
Total (11 villages)					31,950
Each Year & Five Years Total					
1st Sub-total					68,250
2nd Sub-total					119,150
3rd Sub-total					75,900
4th Sub-total					93,250
5th Sub-total					89,300
Total					445,850

1 US$ = 50 MK

Cost Estimation for Education/Extension

Component	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
PRA/PCM	954,000	2,544,000	2,120,000	720,000	720,000	7,058,000
Leadership/Managerial						
Training	228,500	345,000	343,500	343,500	343,500	1,604,000
Study Tour	108,000	216,000	216,000	216,000	216,000	972,000
Extension Staff Training	1,796,160	-	-	-	-	1,796,160
Agroforestry Staff Train.	42,000	-	-	-	-	42,000
Self-Monitoring	15,000	30,000	25,000	25,000	25,000	120,000
Inter-Monitoring	84,000	252,000	336,000	336,000	336,000	1,344,000
Inter-Monitoring	126,000	126,000	126,000	126,000	126,000	630,000
Follow-up on Agroforest.	30,000	-	-	-	-	30,000
Education of Environmen.	71,000	-	35,500	35,500	35,500	177,500
Total (MK)	3,454,660	3,513,000	3,202,000	1,802,000	1,802,000	13,773,660
Total (U$)	69,093	70,260	64,040	36,040	36,040	275,473

Note: 1U$=MK50.0

Table II-I-1 Cost Estimation for PRA and PCM

Year	No. of village	Workshop Period (days/village)	Preparation (days/village)	Facilitator/ Modelator	Cost	Total (MK)
1st year (summary of RRA and PCM)	3	3	3	NGO	(8,000MKx5prs.+13,000(inc.trans))x6daysx3villages	954,000
2nd year	6	5	3	NGO	(8,000MKx5prs.+13,000(inc.trans))x8daysx6 villages	2,544,000
3rd year	5	5	3	NGO	(8,000MKx5prs.+13,000(inc.trans))x8daysx5 villages	2,120,000
4th year	5	5	3	Forestry Assistant/ Field Assistant	(1,000MKx5prs.+13,000(inc.trans))x8daysx5 villages	720,000
5th year	5	5	3	Forestry Assistant/ Field Assistant	(1,000MKx5prs.+13,000(inc.trans))x8daysx5 villages	720,000
	24	23	15		Total	7,058,000

Table II-I-2 Cost Estimation for Leadership and Managerial Training

Year	No. of village	Partici-pants/ village*	Total Partici-pants	No. of Course	Period (days/ village)	Prepa-ration (days/ village)	Facilitator/ Modelator	Cost		Total (MK)
								Facilitator / Modelator	Participants	
1st year	3	15	45	2	5	2	NGO	(8,000MKx2prs.x7daysx2times)	20MK(accomodation)x5daysx45prs.	228,500
2nd year	6	15	90	3	5	2	NGO	(8,000MKx2prs.x7daysx3times)	20MK(accomodation)x5daysx90prs.	345,000
3rd year	5	15	75	3	5	2	NGO	(8,000MKx2prs.x7daysx3times)	20MK(accomodation)x5daysx75prs.	343,500
4th year	5	15	75	3	5	2	Forestry Assistant/ Field Assistant	(8,000MKx2prs.x7daysx3times)	20MK(accomodation)x5daysx75prs.	343,500
5th year	5	15	75	3	5	2	Forestry Assistant/ Field Assistant	(8,000MKx2prs.x7daysx3times)	20MK(accomodation)x5daysx75prs.	343,500
	24	-	360	14	25	10		Total		1,604,000

Note: * ; 15 participants are consisted of Village Headman, 2 VC members, 2 leaders from each group. Number of group in each village was tentatively decided as 6.

Table II-I-3 Cost Estimation for Study Tour

Year	No. of village	No. of group / tour /village	No. of tour / village*	Total No. of tour	No. of total participants	Cost	Total (MK)
1st year	3	2	3	3	72	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 3 times	108,000
2nd year	6	2	3	6	144	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	216,000
3rd year	5	2	3	6	120	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	216,000
4th year	5	2	3	6	120	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	216,000
5th year	5	2	3	6	120	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	216,000
	24	-	-	27	576	Total	972,000

Table II-I-4 Cost Estimation for Extension Staff Training

Training Course	Participants	No. of Participants	No. of Class	Period (days)	Trainor	Cost		Total (MK)
						Trainor	Participants	
Basic Forestry	Forestry Guard and Patrol Man	87	3	5	RFO (S)	(MK830x5days+300)x2prsx3times	(MK500x5days+300)x87prs	270,300
Extension Methodologies	Forestry Guard and Patrol Man	87	3	5	RFO (S)	(MK830x5days+300)x2prsx3times	(MK500x5days+300)x87prs	270,300
Agroforestry	Forestry and Agriculture Extension Staff	145	5	5	International Organization	(MK4,500x5days+500)x2prsx5times	(MK500x5days+300)x145prs	636,000
Forestry	Forestry Extension Staff	98	4	5	RFO (S)	(MK830x5days+300)x2prsx4times	(MK500x5days+300)x98prs	310,000
Agriculture	Field Assistant	28	1	5	ADD	(MK830x5days+300)x2prsx1time	(MK500x5days+300)x28prs	87,300
IGA								
Bee-keeping	Field Assistant	28	1	3	ADD	(MK830x3days+300)x2prsx1time	(MK500x3days+300)x28prs	55,980
Guinea Fowl Rearing	Field Assistant	28	1	2	ADD	(MK830x2days+300)x2prsx1time	(MK500x2days+300)x28prs	54,320
Vegetable Growing	Field Assistant	28	1	3	ADD	(MK830x3days+300)x2prsx1time	(MK500x3days+300)x28prs	55,980
Food Processing	Field Assistant	28	1	3	ADD	(MK830x3days+300)x2prsx1time	(MK500x3days+300)x28prs	55,980
		557	20	36			Total	1,796,160

Table II-I-5 Cost Estimation for Technical Training on Agroforestry (Farmers and Extension Staff) (1st Year)

Training Course	Participants	No. of village	Period	Trainor	Cost	Total (MK)
Agroforestry (1st year only)	Farmers, Forestry and Agriculture Extension Staff	3	3 days/village	International Organization	(MK4,500x3days+500)x3 villages	42,000
		3			Total	42,000

Table II-I-6 Cost Estimation for Self-Monitoring

Year	No. of village	Cost	Total (MK)
1st year	3	5,000MK(material for bulletin board) x 3 villages	15,000
2nd year	6	5,000MK(material for bulletin board) x 6 villages	30,000
3rd year	5	5,000MK(material for bulletin board) x 5 villages	25,000
4th year	5	5,000MK(material for bulletin board) x 5 villages	25,000
5th year	5	5,000MK(material for bulletin board) x 5 villages	25,000
	24	Total	120,000

Table II-I-7 Cost Estimation for Inter-Monitoring (with project)

Year	No. of village	No. of group / tour /village	No. of tour / season	No. of tour / year / village	Total No. of tour	No. of total participants	Cost	Total (MK)
1st year	3	2	1	4	4	96	(2,500MK(rental fee)+3,000MK(km charge)+5,000(gas))x2 carsx 4 times	84,000
2nd year	9	2	3	4	12	288	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 12 times	252,000
3rd year	11	2	4	4	16	352	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 16 times	336,000
4th year	10	2	4	4	16	320	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 16times	336,000
5th year	10	2	4	4	16	320	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 16 times	336,000
	43	-	-	-	64	1,376	Total	1,344,000

Note: Number of group and participants from each village were tentatively decided as 6 and 8, respectively

Table II-I-8 Cost Estimation for Inter-Monitoring (without project)

Year	No. of target village	No. of participants/ village	No. of tour/year/ village	Total No. of tour	Total Participants	Cost	Total (MK)
1st year	6	8	3	6	144	(2,500MK(rental fee)+3,000MK(km charge)+5,000(gas))x2 carsx 6 times	126,000
2nd year	5	8	3	6	120	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	126,000
3rd year	5	8	3	6	120	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	126,000
4th year	5	8	3	6	120	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	126,000
5th year	-	-	-	-	-	(2,500MK(rental fee)+6,000MK(km charge)+9,500(gas))x2 carsx 6 times	126,000
	21	-	-	24	504	Total	630,000

Note: *Number of group in each village was tentatively decided as 6.

Table II-I-10 Cost Estimation for Environmental Education at School

Year	No. of school	Total No. of students	Facilitator/ Modelator	Cost	Total (MK)
1st year	2	15	NGO	(4,500MKx5prs.x13,000(running cost)) x 2 schools	71,000
2nd year	-	-	-	-	-
3rd year	1	15	NGO	(4,500MKx5prs.x13,000(running cost)) x 1 school	35,500
4th year	1	15	Forestry Assistant/ Field Assistant	(4,500MKx5prs.x13,000(running cost)) x 1 school	35,500
5th year	1	15	Forestry Assistant/ Field Assistant	(4,500MKx5prs.x13,000(running cost)) x 1 school	35,500
	3	45			177,500

Table II-I-9 Cost Estimation for Monitoring and Follow-up on Agroforestry Techniques (1st year only)

Participants	No. of village	Period	No. of visit/year	Trainor	Cost	Total (MK)
Farmers, Forestry and Agriculture Extension Staff	3	1 day / time	6	International Organization	(MK4,500 + 500) x 6 times	30,000
	3		6		Total	30,000