

SECTOR E

TABLES

Table E.3 Labor Wages

	Labor	Unit Price (Rs.)
		day
MP-01	Foreman	620.00
MP-02	Special Worker	360.00
MP-03	Skilled Worker	360.00
MP-04	Common Labor	210.00
MP-05	Erector	340.00
MP-06	Carpenter	360.00
MP-07	Reinforcing Steel Worker	340.00
MP-08	Welder	360.00
MP-09	Plasterer	340.00
MP-10	Mason	340.00
MP-11	Painter	340.00
MP-12	Electrician	360.00
MP-13	Mechanic	420.00
MP-14	Jumper	380.00
MP-15	Machine Operator (Light)	310.00
MP-16	Machine Operator (Heavy)	350.00

Table E.4 Unit Price of Typical Material

	Item	Specification	Unit	Unit Price (Rs.)
CP-01	Portland cement	50kg/bag	kg	4.20
CP-02	Aggregate/fine aggregate/sand		m ³	350.00
CP-03	Aggregate	5 ~ 15mm	m ³	420.00
CP-04	Aggregate	15 ~ 25mm	m ³	420.00
CP-05	Rubble	small size	m ³	210
CP-06	Rubble	more than 50kg	m ³	280
CP-07	Stone for river revetment		m ³	280
CP-08	Reinforced iron bar		ton	22,000
CP-09	Fuel	Gasoline	lit	35.05
CP-10	Fuel	diesel oil	lit	21.05
CP-11	Plywood	19mm 4'x 8'(121cm x 242cm)	m ²	336.00
CP-13	Asphalt mixture		ton	1,700.00
CP-14	Dense graded asphalt concrete		ton	1,900.00
CP-16	Bituminous material (tack coat PK-4)		lit	22.25
CP-20	Gabion mattress	2.1*1.05*0.8(150mm*150mm)	gage	900.00
CP-21	Top soil		m ³	80.00
CP-23	Seedling		tree	30.00
CP-24	Sod for sodding		m ²	20.00
CP-25	Lawn for garden		m ²	40.00
CP-26	Block for Pavement		m ²	850.00

Table E.5 Rent of Construction Equipment and Tools

	Item	Specification		Q'ty	Unit	Price (Rs.)
EQ-01	Excavator (backhoe)	0.7m ³	Excavation, Loading	1	h	1,200.00
EQ-02	Excavator (backhoe)	1.0m ³	Excavation, Loading	1	h	2,200.00
EQ-03	Wheel loader	1.4m ³	Excavation, Loading	1	h	800.00
EQ-07	Bulldozer Tractor	21 ton	Excavation	1	h	1,800.00
EQ-09	Bulldozer Tractor	32 ton	Excavation	1	h	2,000.00
EQ-11	Bulldozer Tractor	32 ton with ripper	Excavation	1	h	2,200.00
EQ-13	Dump truck	10ton	Carrying	1	h	900.00
EQ-14	Motor Grader	3.1m	Grading	1	h	1,200.00
EQ-15	Pneumatic Tire Roller	8 to 12 ton	Compaction	1	h	700.00
EQ-16	Vibratory Roller	8 to 18t	Compaction	1	h	1,000.00
EQ-17	Tamping Roller	20.7 to 34.5	Compaction	1	h	1,300.00
EQ-18	Road Roller (3 Wheel Roller)	10 to 12 ton	Compaction	1	h	600.00
EQ-19	Vibratory Plate Compactor	50 to 60 kg	Compaction	1	day	450.00
EQ-34	Concrete mixer, 1bag	0.16ms	Mixing concrete	1	h	200.00
EQ-35	Concrete mixer, 1bag	0.48ms	Mixing concrete	1	h	820.00
EQ-36	Concrete Plant (45m ³ /sec, 0.75m ³ *1)		Mixing concrete	1	h	2,500.00
EQ-37	Truck mixer	4.5m ³	Carrying concrete	1	h	1,300.00
EQ-43	Asphalt Finisher	2.4 to 4.5m		1	day	15,000.00
EQ-46	Generator	200KVA	Carrying	1	hr	1,800.00
EQ-47	4 Wheel drive car			1	day	3,100.00
EQ-52	Concrete pump car (90-110m ³ /h)		Placing concrete	1	hr	2,000.00
EQ-54	Vibratory Compactor (hand guide type)	0.8 to 1.1 ton	Placing concrete	1	hr	45.00

Not: Price is including operator and fuel cost.

Table E.6 Composition of Unit Cost

No	Item	Q'ty	Unit	Rs.
CC-01	Cleaning and Grubbing	1.00	m ²	16.91
CC-02	Common Excavation, Carrying(L=0.5km) and compaction	1.00	m ³	79.73
CC-03	Common Excavation, Carrying (L=8km) and compaction	1.00	m ³	156.23
CC-04	Common Excavation, Carrying(L=12km) and Compaction	1.00	m ³	214.73
CC-05	Foundation Excavation at Detention dam	1.00	m ³	156.23
CC-06	Deepening river bed in Lai Nullah(L=25km)	1.00	m ³	398.07
CC-07	Common Excavation, Carrying (L=25km) and Compaction	1.00	m ³	314.50
CC-08	Hard rock Excavation, carrying (L=25km) and compaction	1.00	m ³	508.11
CC-09	Dam Embankment	1.00	m ³	122.85
CC-10	Reinforced Concrete:210kgf/cm ² (Re-bar 50kg/m ³)	1.00	m ³	7,102.84
CC-11	Reinforced concrete:210kgf/cm ² (Re-Bar-20kg/m ³)	1.00	m ³	5,148.20
CC-12	Mass concrete:160kg/cm ²	1.00	m ³	3,270.82
CC-13	Cut-off concrete:160kg/cm ²	1.00	m ³	3,270.82
CC-14	Tennis Court at Community Pond	1.00	court	405,999.14
CC-15	Revetment type A (Wet masonry Pitching)	1.00	m ²	1,204.09
CC-16	Revetment type B (Wetmasonry Masonry)	1.00	m ²	1,670.01
CC-17	Wet Masonry Revetment in Lai Nulla	1.00	m ²	2,354.89
CC-24	Asphalt Pavement	1.00	m ²	327.20
CC-25	Block Pavement	1.00	m ²	1,208
CC-26	Multipurpose Ground	1.00	Place	1,468,291.50
CC-27	Tennis Court	1.00	Place	405,999.17
CC-28	Basket Court	1.00	Place	162,399.75
CC-29	Main road (W=16m)	1.00	m	6,493.48
CC-30	Service Road (W=6m)	1.00	m	2,443.51
CC-31	Demolition of Bridge Slab	1.00	m ³	1,642.85
CC-32	Demolition of Bridge Sub-structure	1.00	m ³	1,874.23
CC-33	Gabion Mattress W1.0m × B1.5m × T0.5m	1.00	m ³	1870.31
CC-34	Bridge	1.00	m ²	44,417.20
CC-35	Sodding	1.00	m ²	61.11
CC-36	Gardening	1.00	m ²	70.76
CC-37	Forestation	1.00	m ²	10.82
CC-38	Improvement of Existing Forest	1.00	m ²	3.61

Table E.7 Whole Project Cost

Item	Community Pond (1,000 Rs.)	Flood Diversion		Supplementary Works for River Improvement (1,000 Rs.)	Total (1,000 Rs.)
		Flood Diversion (1,000 Rs.)	Kurang Improvement (1,000 Rs.)		
I. Construction Cost	965,528	4,155,868	72,887	726,655	5,920,938
I.1 Direct Cost	670,826	2,457,978	44,807	469,930	3,643,541
I.2 Indirect Cost	165,962	608,104	11,085	116,262	901,413
I.2.1 Temporary Works: 5% of I.1	33,541	122,899	2,240	23,497	182,177
I.2.2 Site Expense: 10% of I.1 and I.2.1	70,437	258,088	4,705	49,343	382,573
I.2.3 Overhead: 8% of I.1, I.2.1 and I.2.2	61,984	227,117	4,140	43,422	336,663
I.3 Physical Contingency: 5% of I.1. and I.2.	41,839	153,304	2,795	29,310	227,248
I.4 Price Contingency: 4%/year	86,901	936,482	14,200	111,153	1,148,736
II. Compensation Cost	0	591,385	27,585	17,472	636,442
II.1 Compensation Cost	0	462,900	22,000	16,000	500,900
II.2 Physical Contingency: 5% of II.1	0	23,145	1,100	800	25,045
II.3 Price Contingency: 4%/year	0	105,340	4,485	672	110,497
III. Consultancy Service	94,155	407,743	7,221	71,277	580,396
III.1 Engineering Service: 10% of I.1 And I.2	83,679	306,608	5,589	58,619	454,495
III.2 Physical Contingency: 5% of III.1	4,184	15,330	279	2,931	22,724
III.3 Price Contingency: 4%/year	6,292	85,805	1,353	9,727	103,177
IV. Administration Cost	9,196	45,212	957	7,087	62,452
IV.1 Administration: 1% of I.1, I.2 and II.1	8,368	35,290	779	6,022	50,459
IV.2 Price Contingency: 4%/year	828	9,922	178	1,065	11,993
Sub Total	1,068,879	5,200,208	108,651	822,491	7,200,229
V. Tax and duties: (6.4% of I. and III.)	67,639	291,294	5,113	50,932	414,978
Total	1,136,518	5,491,502	113,764	873,423	7,615,207

Table E.8 Urgent Project Cost

Item	Community Pond (1,000 Rs.)	Supplementary Works for River Improvement (1,000 Rs.)	Total (1,000 Rs.)
I. Construction Cost	965,528	95,534	1,061,062
I.1 Direct Cost	670,826	66,114	736,940
I.2 Indirect Cost	165,962	16,357	182,319
I.2.1 Temporary Works: 5% of I.1	33,541	3,306	36,847
I.2.2 Site Expense: 10% of I.1 and I.2.1	70,437	6,942	77,379
I.2.3 Overhead: 8% of I.1, I.2.1 and I.2.2	61,984	6,109	68,093
I.3 Physical Contingency: 5% of I.1. and I.2.	41,839	4,124	45,963
I.4 Price Contingency: 4%/year	86,901	8,939	95,840
II. Compensation Cost	0	17,472	17,472
II.1 Compensation Cost	0	16,000	16,000
II.2 Physical Contingency: 5% of II.1	0	800	800
II.3 Price Contingency: 4%/year	0	672	672
III. Consultancy Service	94,155	9,370	103,525
III.1 Engineering Service: 10% of I.1 And I.2	83,679	8,247	91,926
III.2 Physical Contingency: 5% of III.1	4,184	412	4,596
III.3 Price Contingency: 4%/year	6,292	711	7,003
IV. Administration Cost	9,196	1,077	10,273
IV.1 Administration Cost: 1% of I.1, I.2 and II.1	8,368	985	9,353
IV.2 Price Contingency: 4%/year	828	92	920
Sub Total	1,068,879	123,453	1,192,332
V. Tax and duties: (6.4% of I. and III.)	67,639	6,696	74,335
Total	1,136,518	130,149	1,266,667

Table E.9 Short-term Project Cost

Item	Flood Diversion Channel		Supplementary Works for River Improvement (1,000 Rs.)	Total (1,000 Rs.)
	Flood Diversion Channel (1,000 Rs.)	Kurang Improvement (1,000 Rs.)		
I. Construction Cost	1,501,615	34,996	631,121	2,167,732
I.1 Direct Cost	979,508	22,391	403,816	1,405,715
I.2 Indirect Cost	242,329	5,540	99,905	347,774
I.2.1 Temporary Works: 5% of I.1	48,975	1,120	20,191	70,286
I.2.2 Site Expense: 10% of I.1 and I.2.1	102,848	2,351	42,401	147,600
I.2.3 Overhead: 8% of I.1, I.2.1 and I.2.2	90,506	2,069	37,313	129,888
I.3 Physical Contingency: 5% of I.1. and I.2.	61,092	1,397	25,186	87,675
I.4 Price Contingency: 4%/year	218,686	5,668	102,214	326,568
II. Compensation Cost	287,629	13,252	0	300,881
II.1 Compensation Cost	243,400	11,000	0	254,400
II.2 Physical Contingency: 5% of II.1	12,170	550	0	12,720
II.3 Price Contingency: 4%/year	32,059	1,702	0	33,761
III. Consultancy Service	147,289	3,433	61,907	212,629
III.1 Engineering Service: 10% of I.1 and I.2	122,184	2,793	50,372	175,349
III.2 Physical Contingency: 5% of III.1	6,109	140	2,519	8,768
III.3 Price Contingency: 4%/year	18,996	500	9,016	28,512
IV. Administration Cost	17,040	459	6,010	23,509
IV.1 Administration Cost: 1% of I.1, I.2 and II.1	14,652	389	5,037	20,078
IV.2 Price Contingency: 4%/year	2,388	70	973	3,431
Sub Total	1,953,573	52,140	699,038	2,704,751
			0	0
V. Tax and duties: (6.4% of I. and III.)	105,249	2,453	44,236	151,938
Total	2,058,822	54,593	743,274	2,856,689

Table E.10 Long-term Project Cost

Item	Flood Diversion		Total (1,000 Rs.)
	Flood Diversion (1,000 Rs.)	Kurang Improvement (1,000 Rs.)	
I. Construction Cost	2,654,253	37,891	2,692,144
I.1 Direct Cost	1,478,470	22,416	1,500,886
I.2 Indirect Cost	365,775	5,545	371,320
I.2.1 Temporary Works: 5% of I.1	73,924	1,120	75,044
I.2.2 Site Expense: 10% of I.1 and I.2.1	155,240	2,354	157,594
I.2.3 Overhead: 8% of I.1, I.2.1 and I.2.2	136,611	2,071	138,682
I.3 Physical Contingency: 5% of I.1. and I.2.	92,212	1,398	93,610
I.4 Price Contingency: 4%/year	717,796	8,532	726,328
II. Compensation Cost	303,756	14,333	318,089
II.1 Compensation Cost	219,500	11,000	230,500
II.2 Physical Contingency: 5% of II.1	10,975	550	11,525
II.3 Price Contingency: 4%/year	73,281	2,783	76,064
III. Consultancy Service	260,454	3,788	264,242
III.1 Engineering Service: 10% of I.1 And I.2	184,424	2,796	187,220
III.2 Physical Contingency: 5% of III.1	9,221	139	9,360
III.3 Price Contingency: 4%/year	66,809	853	67,662
IV. Administration Cost	28,172	498	28,670
IV.1 Administration Cost: 1% of I.1, I.2 and II.1	20,638	390	21,028
IV.2 Price Contingency: 4%/year	7,534	108	7,642
Sub Total	3,246,635	56,511	3,303,146
	0	0	0
V. Tax and duties: (6.4% of I. and III.)	186,045	2,660	188,705
Total	3,432,680	59,171	3,491,851

Table E.11 Disbursement Schedule of Urgent Project

Item	Year	(Unit:Rs.,1,000)										
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	Total	0	1	2	3	4	5	6	7	8	9	10
I. Construction Cost	919,259	0	0	543,308	375,951	0	0	0	0	0	0	0
II. Compensation Cost	16,000	0	16,000	0	0	0	0	0	0	0	0	0
III. Consultancy service (10% of Item I)	91,926	0	44,588	23,669	23,669	0	0	0	0	0	0	0
IV. Administration Cost (1% of Item I)	9,353	0	160	5,433	3,760	0	0	0	0	0	0	0
V. Sub-total (Item I to IV)	1,036,537	0	60,748	572,410	403,379	0	0	0	0	0	0	0
VI. Physical Contingency (5% of Item I to III)	51,359	0	3,029	28,349	19,981	0	0	0	0	0	0	0
VII. Sub-total (Item. V+VI)	1,087,897	0	63,778	600,759	423,360	0	0	0	0	0	0	0
VIII. Price Contingency (4%/year of Item I to IV)	104,435	0	2,551	49,022	52,862	0	0	0	0	0	0	0
IX. Total (Item VII+VIII)	1,192,332	0	66,329	649,781	476,222	0	0	0	0	0	0	0
X. Tax and Duties	74,335	0	3,108	41,100	30,127	0	0	0	0	0	0	0
XI. Grand Total (Item IX+X)	1,266,667	0	69,437	690,881	506,349	0	0	0	0	0	0	0
O. M. Cost (0.3%*Item I)	s	0	0	0	0	3,759	3,909	4,065	4,228	4,397	4,573	4,756
I. O.M. Cost		0	0	0	0	3,213	3,213	3,213	3,213	3,213	3,213	3,213
2. Price Contingency		0	0	0	0	546	696	852	1,015	1,184	1,360	1,543

*1) Price Level in November 2002

Table E.13 Disbursement Schedule of Urgent, Short-term and Long-term Project

Item	Year	(Unit:Rs.1,000)										
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	Total	0	1	2	3	4	5	6	7	8	9	10
I. Construction Cost	4,544,953	0	0	543,308	783,230	673,105	673,105	382,830	382,830	368,849	368,849	368,849
II. Compensation Cost	500,900	0	16,000	81,133	86,633	86,633	49,400	49,400	43,900	43,900	43,900	0
III. Consultancy service (10% of Item I)	454,495	0	44,588	48,105	78,046	54,377	72,896	32,135	32,135	30,737	30,737	30,737
IV. Administration Cost (1% of Item I)	50,459	0	160	6,244	8,699	7,597	7,225	4,322	4,267	4,127	4,127	3,688
V. Sub-total (Item I to IV)	5,550,807	0	60,748	678,792	956,608	821,712	802,626	468,687	463,132	447,614	447,614	403,275
VI. Physical Contingency (5% of Item I to III)	275,017	0	3,029	33,627	47,395	40,706	38,233	23,526	23,521	22,482	22,482	20,287
VII. Sub-total (Item. V + VI)	5,825,824	0	63,778	712,419	1,004,003	862,418	840,859	492,213	486,383	470,095	470,095	423,561
VIII. Price Contingency (4%/year of Item I to IV)	1,374,405	0	2,551	58,133	125,364	146,589	182,507	130,512	153,567	173,149	198,867	203,265
IX. Total (Item VII. + VIII)	7,200,229	0	66,329	770,552	1,129,367	1,008,907	1,023,366	622,725	639,950	643,245	668,962	626,827
X. Tax and Duties	414,978	0	3,108	42,872	64,931	57,038	60,732	35,210	36,618	36,671	38,137	39,661
XI. Grand Total (Item IX+X)	7,615,207	0	69,437	813,424	1,194,298	1,065,946	1,084,098	657,935	676,567	679,915	707,099	666,488
O. M. Cost (0.3% *Item I)		0	0	0	0	3,809	3,961	6,053	6,295	6,547	6,809	7,081
I. O.M. Cost		0	0	0	0	3,256	3,256	4,784	4,784	4,784	4,784	4,784
2. Price Contingency		0	0	0	0	553	705	1,269	1,511	1,763	2,025	2,297

*1) Price Level in 2002

Table E.14 Breakdown of Direct Cost for Community Pond

Item No.	Items	Unit	Quantity	Unit Cost	Cost
				(Rs./unit)	(Rs.)
UA	COMMUNITY POND				
UA1	DIVERSION FACILITIES				
UA1.1	Clearing and Grubbing	m ²	30,000	16.91	507,000
UA1.2	River Improvement				
UA1.2.1	Common Excavation	m ³	21,000	156.23	3,281,000
UA1.2.2	Embankment	m ³	4,800		0
UA1.2.3	Revetment (Wet Stone Pitching)	m ²	2,500	1,204.09	3,010,000
UA1.3	Fixed Weir (H=2.5m)				
UA1.3.1	Common Excavation	m ³	400	156.23	62,000
UA1.3.2	Reinforced Concrete	m ³	50	7,102.84	355,000
UA1.3.3	Mass Concrete	m ³	400	3,270.82	1,308,000
UA1.3.4	Slide Gate H 1.0m x B 1.0m with Screen (Manual Control)	gate	2	720,000.00	1,440,000
UA1.3.5	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ³	150	1,870.00	281,000
UA1.3.6	Cut-off Concrete	m ³	520	3,270.80	1,701,000
UA1.4	Diversion Weir with Orifice (H=5.2m)				
UA1.4.1	Common Excavation	m ³	9,000	156.23	1,406,000
UA1.4.2	Reinforced Concrete	m ³	750	7,102.84	5,327,000
UA1.4.2	Reinforced Concrete Wall (Reverse T Shape)	m ³	200	7,102.84	1,421,000
UA1.4.3	Slide Gate H 1.0m x B 1.0m (Manual Control)	gate	1	720,000.00	720,000
UA1.4.4	Slide Gate H 1.5m x B 1.5m (with Electric Motor)	gate	7	1,050,000.00	7,350,000
UA1.4.5	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ³	140	1,870.00	262,000
UA1.4.6	Cut-off Concrete	m ³	300	3,270.80	981,000
UA1.5	Diversion Channel				
UA1.5.1	Common Excavation	m ³	24,000	156.23	3,750,000
UA1.5.2	Revetment (Wet Stone Masonry)	m ²	2,800	1,670.01	4,676,000
UA1.5.3	Reinforced Concrete for Box Culvert	m ³	300	7,102.84	2,131,000
UA1.6	Box Culvert, etc.	L.S.			25,433,000
UA1.7	Miscellaneous Works	L.S.			6,540,000
Sub-total					71,942,000
UA2	DETENTION FACILITIES				
UA2.1	Clearing and Grubbing	m ²	485,000	16.91	8,201,000
UA2.2	Detention Dam (H=20m)				
UA2.2.1	Foundation Excavation	m ³	86,000	156.23	13,436,000
UA2.2.2	Mass Concrete	m ³	27,500	3,270.82	89,948,000
UA2.2.3	Reinforced Concrete	m ³	3,500	5,148.20	18,019,000
UA2.2.4	Dam Embankment (Homogeneous)	m ³	160,000	122.85	19,656,000
UA2.2.5	Embankment Slope Protection (Sodding)	m ²	46,000	61.11	2,811,000
UA2.2.6	Slide Gate H 1.0m x B 1.0m for Outlet with Screen (with Electric Winch)	gate	3	720,000.00	2,160,000
UA2.2.7	Crest Road Pavement	m ²	6,200	327.21	2,029,000
UA2.2.8	Crest Bridge	bridge	8	3,223,600.00	25,789,000
UA2.2.9	Revetment of Downstream Channel (Wet Stone Masonry)	m ²	500	1,670.01	835,000
UA2.2.10	Reinforced Concrete for Box Culvert	m ³	300	7,102.84	2,131,000
UA2.3	Reservoir Excavation				
UA2.3.1	Common Excavation	m ³	(1,940,000)		
UA2.3.1.1	Carrying soil to disposal site L=8km	m ³	775,200	156.23	121,109,000
UA2.3.1.2	Carrying soil within the park L=0.5km	m ³	1,004,800	79.73	80,113,000
UA2.3.1.3	Carrying soil to dam site L=0.5km	m ³	160,000		
UA2.3.2	Excavated Slope Protection (Sodding)	m ²	84,000	61.11	5,133,000
UA2.4	Miscellaneous Works	L.S.			39,137,000
Sub-total					430,507,000
UA3	FACILITIES FOR MULTIPLE USE OF COMMUNITY POND				
UA3.1	Public Facilities				
UA3.1.1	Entrance Gate with Gardening	place	4	500,000.00	2,000,000
UA3.1.2	Car Parking including Backfilling, Pavement and Gardening	m ²	(175,000)		
UA3.1.2.1	Backfilling for Low-lying Area	m ³	280,000		
UA3.1.2.2	Pavement	m ²	63,000	327.21	20,614,000
UA3.1.2.3	Gardening	m ²	35,000	70.76	2,477,000
UA3.1.3	Main Road with Roadside Trees	m	4,000	6,493.48	25,974,000
UA3.1.4	Service Road with Roadside Trees	m	1,900	2,443.51	4,643,000

Item No.	Items	Unit	Quantity	Unit Cost	Cost
				(Rs./unit)	(Rs.)
UA3.1.5	Bridge A with Piers and Abutments	bridge	1	28,013,000.00	28,013,000
UA3.1.6	Bridge B with Piers and Abutments	bridge	1	18,675,000.00	18,675,000
UA3.1.7	Backfilling for Low-lying Area	m ³	410,000		0
UA3.2	Sports and Recreation Facilities				
UA3.2.1	Multipurpose Ground (Cricket, Baseball, etc.)	place	2	1,468,291.50	2,937,000
UA3.2.2	Tennis Court	place	6	405,999.14	2,436,000
UA3.2.3	Basket Ball Court	place	4	162,399.75	650,000
UA3.3	Amenity and Landscape				
UA3.3.1	Water Front Open Space with Color Block Pavement	m ²	15,000	1,208.24	18,124,000
UA3.3.2	Entrance Plaza with Color Block Pavement	m ²	4,000	1,208.24	4,833,000
UA3.3.3	Miniature Mountain including Embankment and Sodding				
UA3.3.3.1	Embankment	m ³	310,000		0
UA3.3.3.2	Sodding	m ²	25,000	61.11	1,528,000
UA3.3.4	Gardening	m ²	50,000	70.76	3,538,000
UA3.3.5	Forestation	m ²	17,000	10.82	184,000
UA3.3.6	Improvement of Existing Forest	m ²	400,000	3.61	1,444,000
UA3.4	Provision of Maintenance Equipment :	L.S.	1	15,000,000.00	15,000,000
UA3.5	Miscellaneous Works	L.S.			15,307,000
Sub-total					203,841,000
Direct Cost Total					670,826,000

Table E.15 Breakdown of Compensation Cost for Community Pond

Item No	Items	Unit	Quantity	Unit Cost	Cost
				(Rs./unit)	(Rs.)
UAC1	COMMUNITY POND				
UAC1	LAND ACQUISITION				
UAC1.1	Residential Area A	m ²	0	11,000	0
UAC1.2	Residential Area B	m ²	0	5,500	0
UAC1.3	Residential Area C	m ²	0	3,000	0
UAC1.4	Agricultural Area A	m ²	0	2,000	0
UAC1.5	Agricultural Area B	m ²	0	1,600	0
UAC1.6	Bare Land A	m ²	0	2,000	0
UAC1.7	Bare Land B	m ²	0	1,600	0
UAC1.8	Forest	m ²	0	500	0
Sub-total					0
UAC2	HOUSE EVACUATION				
UAC2.1	House Type A	house	0	8,000,000	0
UAC2.2	House Type B	house	0	3,000,000	0
UAC2.3	House Type C	house	0	100,000	0
UAC2.4	House Type D	house	0	50,000	0
UAC2.5	Apartment House Type A	house	0	200,000,000	0
UAC2.6	Apartment House Type B	house	0	50,000,000	0
Sub-total					0
Total					0

Table E.16 Breakdown of Direct Cost for Supplementary Works for River improvement on Urgent Project

Item No.	Items	Unit	Quantity	Unit Cost (Rs./unit)	Cost (Rs.)
UB	LAI NULLAH IMPROVEMENT				
UB1	RIVER DEEPENING				
UB1.1	Excavation Works				
UB1.1.1	Common Excavation	m ³	0	398.07	0
UB1.1.2	Rock Excavation	m ³	0	508.11	0
UB1.2	Reconstruction of Existing Bridge				
UB1.2.1	Chaklala Bridge (Downstream)	L.S.	0	94,036,000.00	0
UB1.2.2	Chaklala Bridge (Upstream)	L.S.	0	51,275,000.00	0
UB1.2.3	Railway Bridge	L.S.	0	34,311,000.00	0
UB1.2.4	Murree Road Bridge	L.S.	0	63,096,000.00	0
UB1.2.5	City Sadar Bridge	L.S.	0	55,659,000.00	0
UB1.2.6	Ratta Amral Bridge	L.S.	0	22,801,000.00	0
UB1.2.7	Gunj Mandi Bridge	L.S.	0	34,082,000.00	0
UB1.2.8	Khayaban S.S. Bridge	L.S.	0	50,335,000.00	0
UB1.2.9	Parrian Bridge	L.S.	0	11,832,000.00	0
UB1.2.10	Kattarian Bridge	L.S.	0	21,081,000.00	0
UB1.2.11	T1 Bridge (Tenawali Kas)	L.S.	0	20,005,439.00	0
UB1.3	Reinforcement Works for Bridge Foundation				
UB1.3.1	Dhoke Chiragh Din Bridge	L.S.	0	355,142.00	0
UB1.3.2	Gawal Mandi Bridge	L.S.	0	355,142.00	0
UB1.3.3	Pir Wadhai Bridge	L.S.	0	355,142.00	0
UB1.4	Miscellaneous Works	L.S.			0
Sub-total					0
UB2	SLOPE PROTECTION				
UB2.1	Slope Protection				
UB2.1.1	Revetment (Wet Stone Pitching)	m ²	0	1,204.09	0
UB2.1.2	Sodding	m ²	0	61.11	0
UB2.2	Drainage Outlet	place	0	4,383.78	0
UB2.3	Miscellaneous Works	L.S.			0
Sub-total					0
UB3	DOWNSTREAM RIVER IMPROVEMENT WITH SHORT CUT CHANNEL				
UB3.1	Clearing and Grubbing	m ²	8,000	16.91	135,000
UB3.2	Excavation and Embankment Works				
UB3.2.1	Common Excavation	m ³	31,000	314.50	9,750,000
UB3.2.2	Rock Excavation	m ³	0	508.11	0
UB3.2.3	Dike Embankment	m ³	2,000	122.85	246,000
UB3.3	Slope Protection				
UB3.3.1	Revetment (Wet Stone Pitching)	m ²	41,000	1,204.09	49,368,000
UB3.3.2	Sodding	m ²	5,600	61.11	342,000
UB3.4	Drainage Outlet	place	30	8,767.56	263,000
UB3.5	Miscellaneous Works	L.S.			6,010,000
Sub-total					66,114,000
UB4	BACKWATER LEVEE FOR TRIBUTARY				
UB4.1	Clearing and Grubbing	m ²	0	16.91	0
UB4.2	Excavation and Embankment Works				
UB4.2.1	Common Excavation	m ³	0	398.07	0
UB4.2.2	Rock Excavation	m ³	0	508.11	0
UB4.2.3	Dike Embankment	m ³	0	122.85	0
UB4.3	Slope Protection				
UB4.3.1	Revetment (Wet Stone Pitching)	m ²	0	1,204.09	0
UB4.3.2	Sodding	m ²	0	61.11	0
UB4.4	Drainage Outlet	place	0	8,767.56	0
UB4.5	Gate Structure				
UB4.5.1	Roller Gate H 2.0m x B 2.0m (with Electric Winch)	gate	0	1,870,000.00	0
UB4.5.2	Reinforced Concrete for Box Culvert	m ³	0	7,102.84	0
UB4.6	Miscellaneous Works	L.S.			0
Sub-total					0
Direct Cost Total					66,114,000

Table E.17 Breakdown of Compensation Cost for Supplementary Works for River improvement on Urgent Project

Item No.	Items	Unit	Quantity	Unit Cost		Cost (Rs.)
				(Rs./unit)		
UBC	LAI NULLAH IMPROVEMENT					
UBC1	LAND ACQUISITION					
UBC1.1	Residential Area A	m ²	0	11,000		0
UBC1.2	Residential Area B	m ²	0	5,500		0
UBC1.3	Residential Area C	m ²	0	3,000		0
UBC1.4	Agricultural Area A	m ²	0	2,000		0
UBC1.5	Agricultural Area B	m ²	0	1,600		0
UBC1.6	Bare Land A	m ²	8,000	2,000		16,000,000
UBC1.7	Bare Land B	m ²	0	1,600		0
UBC1.8	Forest	m ²	0	500		0
Sub-total						16,000,000
UBC2	HOUSE EVACUATION					
UBC2.1	House Type A	house	0	8,000,000		0
UBC2.2	House Type B	house	0	3,000,000		0
UBC2.3	House Type C	house	0	100,000		0
UBC2.4	House Type D	house	0	50,000		0
UBC2.5	Apartment House Type A	house	0	200,000,000		0
UBC2.6	Apartment House Type B	house	0	50,000,000		0
Sub-total						0
Total						16,000,000

Table E.18 Breakdown of Direct Cost for Flood Diversion Channel on Short-term Project

Item No.	Items	Unit	Quantity	Unit Cost	Cost
				(Rs./unit)	(Rs.)
SC	DIVERSION CHANNEL				
SC1	Diversion Channel (Bedarawali Kas - Tenawali Kas)				
SC1.1	Clearing and Grubbing	m ²		16.91	0
SC1.2	Fixed Weir				
SC1.2.1	Common Excavation	m ³		214.73	0
SC1.2.2	Reinforced Concrete	m ³		7,102.84	0
SC1.2.3	Mass Concrete	m ³		3,270.82	0
SC1.2.4	Revetment (Wet Stone Pitching)	m ²		1,204.09	0
SC1.2.5	Slide Gate H 1.0m x B 1.0m (Manual Control)	gate		720,000.00	0
SC1.2.6	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ³		1,870.00	0
SC1.2.7	Cut-Off Concrete	m ³		3,270.80	0
SC1.2.8	Sodding	m ²		61.11	0
SC1.3	Diversion Weir				
SC1.3.1	Common Excavation	m ³		214.73	0
SC1.3.2	Reinforced Concrete	m ³		7,102.84	0
SC1.3.3	Mass Concrete	m ³		3,270.82	0
SC1.3.4	Revetment (Wet Stone Pitching)	m ²		1,204.09	0
SC1.3.5	Slide Gate H 1.0m x B 1.0m (Manual Control)	gate		720,000.00	0
SC1.3.6	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ³		1,870.00	0
SC1.3.7	Cut-Off Concrete	m ³		3,270.80	0
SC1.3.8	Sodding	m ²		61.11	0
SC1.4	Diversion Channel (L=2.450m)				
SC1.4.1	Common Excavation	m ³		214.73	0
SC1.4.2	Dike Embankment	m ³		122.85	0
SC1.4.3	Revetment (Wet Stone Masonry)	m ²		1,670.01	0
SC1.4.4	Revetment (Wet Stone Pitching)	m ²		1,204.09	0
SC1.4.5	Sodding	m ²		61.11	0
SC1.4.6	Reinforced Concrete	m ³		7,102.84	0
SC1.4.7	Floor Concrete	m ²		4,670.71	0
SC1.4.8	Drainage Outlet	place		29,225.20	0
SC1.5	Bridge				
SC1.5.1	Bridge BT1 with Piers and Abutments	m ²		44,464.26	0
SC1.5.2	Bridge BT2 with Piers and Abutments	m ²		44,464.26	0
SC1.5.3	Bridge BT3 with Piers and Abutments	m ²		44,464.26	0
SC1.5.4	Bridge BT4 with Piers and Abutments	m ²		44,464.26	0
SC1.6	Miscellaneous Works	L.S.			0
	Sub-total				0
SC2	Diversion Channel (Tenawali Kas - Saidpur Kas)				
SC2.1	Clearing and Grubbing	m ²	79,000	16.91	1,336,000
SC2.2	Hydraulic Drop (Tenawali Kas)			0.00	
SC2.2.1	Common Excavation	m ³	5,200	214.73	1,117,000
SC2.2.2	Mass Concrete	m ³	400	3,270.82	1,308,000
SC2.2.3	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ³	370	1,870.00	692,000
SC2.2.4	Revetment (Wet Stone Pitching)	m ²	2,960	1,204.09	3,564,000
SC2.3	Intake Weir (Tenawali Kas)				
SC2.3.1	Common Excavation	m ³	100	214.73	21,000
SC2.3.2	Reinforced Concrete	m ³	10	7,102.84	71,000
SC2.3.3	Mass Concrete	m ³	30	3,270.84	98,000
SC2.3.4	Revetment (Wet Stone Pitching)	m ²	680	1,204.09	819,000
SC2.3.5	Slide Gate H 1.0m x B 1.0m (Manual Control)	gate	1	720,000.00	720,000
SC2.4	Hydraulic Drop (Kanitawali Kas)				
SC2.4.1	Common Excavation	m ³	2,100	214.73	451,000
SC2.4.2	Mass Concrete	m ³	500	3,270.82	1,635,000
SC2.4.3	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ³	460	1,870.00	860,000
SC2.4.4	Revetment (Wet Stone Masonry)	m ²	970	1,670.01	1,620,000
SC2.5	Diversion Weir (Saidpur Kas)				
SC2.5.1	Common Excavation	m ³	4,100	214.73	880,000
SC2.5.2	Reinforced Concrete	m ³	250	7,102.84	1,776,000
SC2.5.3	Mass Concrete	m ³	2,500	3,270.82	8,177,000
SC2.5.4	Revetment (Wet Stone Masonry)	m ²	1,320	1,670.01	2,204,000
SC2.5.5	Slide Gate H 1.0m x B 1.0m (Manual Control)	gate	2	720,000.00	1,440,000
SC2.5.6	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ³	840	1,870.00	1,571,000
SC2.5.7	Aqueduct	m ³	150	53,421.00	8,013,000
SC2.6	Diversion Channel (L=2.150m)				
SC2.6.1	Common Excavation	m ³	184,000	214.73	39,510,000
SC2.6.2	Dike Embankment	m ³	26,000	122.85	3,194,000
SC2.6.3	Revetment (Wet Stone Masonry)	m ²	0	1,670.01	0

Item No.	Items	Unit	Quantity	Unit Cost	Cost
				(Rs./unit)	(Rs.)
SC2.6.4	Revetment (Wet Stone Pitching)	m ²	0	1,204.09	0
SC2.6.5	Sodding	m ²	46,000	61.11	2,811,000
SC2.6.6	Reinforced Concrete	m ³	0	7,102.84	0
SC2.6.7	Floor Concrete	m ³	0	4,670.71	0
SC2.6.8	Drainage Outlet	place	40	29,225.20	1,169,000
SC2.7	Bridge				
SC2.7.1	Bridge TS1 with Piers and Abutments	m ²	270	44,464.26	12,005,000
SC2.7.2	Bridge TS2 with Piers and Abutments	m ²	350	44,464.26	15,562,000
SC2.7.3	Bridge TS3 with Piers and Abutments	m ²	320	44,464.26	14,229,000
SC2.7.4	Bridge TS4 with Piers and Abutments	m ²	320	44,464.26	14,229,000
SC2.7.5	Bridge TS5 with Piers and Abutments	m ²	350	44,464.26	15,562,000
SC2.7.6	Bridge TS6 with Piers and Abutments	m ²	450	44,464.26	20,009,000
SC2.7.7	Bridge TS7 with Piers and Abutments	m ²	540	44,464.26	24,011,000
SC2.7.8	Bridge TS8 with Piers and Abutments	m ²	540	44,464.26	24,011,000
SC2.8	Miscellaneous Works	L.S.			22,468,000
Sub-total					247,143,000
SC3	Diversion Channel (Saidpur Kas - Kurang River)				
SC3.1	Clearing and Grubbing	m ²	362,000	16.91	6,121,000
SC3.2	Hydraulic Drop (Ojhri Kas 1)			0.00	
SC3.2.1	Common Excavation	m ³	3,800	214.73	816,000
SC3.2.2	Mass Concrete	m ³	500	3,270.82	1,635,000
SC3.2.3	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ²	440	1,870.00	823,000
SC3.2.4	Revetment (Wet Stone Pitching)	m ²	2,460	1,204.09	2,962,000
SC3.3	Hydraulic Drop (Ojhri Kas 2)				
SC3.3.1	Common Excavation	m ³	4,400	214.73	945,000
SC3.3.2	Mass Concrete	m ³	600	3,270.82	1,962,000
SC3.3.3	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ²	500	1,870.00	935,000
SC3.3.4	Revetment (Wet Stone Pitching)	m ²	2,460	1,204.09	2,962,000
SC3.4	Diversion Channel (L=5,126m)				
SC3.4.1	Common Excavation	m ³	1,542,000	214.73	331,114,000
SC3.4.2	Dike Embankment	m ²	69,000	122.85	8,477,000
SC3.4.3	Revetment (Wet Stone Masonry)	m ²	0	1,670.01	0
SC3.4.4	Revetment (Wet Stone Pitching)	m ²	0	1,204.09	0
SC3.4.5	Sodding	m ²	200,100	61.11	12,228,000
SC3.4.6	Reinforced Concrete	m ³	0	7,102.84	0
SC3.4.7	Floor Concrete	m ³	0	4,670.71	0
SC3.4.8	Drainage Outlet	place	110	29,225.20	3,215,000
SC3.5	Hydraulic Drop (Diversion Channel)				
SC3.5.1	Common Excavation	m ³	9,000	214.73	1,933,000
SC3.5.2	Mass Concrete	m ³	11,000	3,270.82	35,979,000
SC3.5.3	Gabion Mattress W 1.0m x B 1.5m x T 0.5m	m ²	11,300	1,870.00	21,131,000
SC3.6	Bridge				
SC3.6.1	Bridge SK1 with Piers and Abutments	m ²	590	44,464.26	26,234,000
SC3.6.2	Bridge SK2 with Piers and Abutments	m ²	660	44,464.26	29,346,000
SC3.6.3	Bridge SK3 with Piers and Abutments	m ²	900	44,464.26	40,018,000
SC3.6.4	Bridge SK4 with Piers and Abutments	m ²	900	44,464.26	40,018,000
SC3.6.5	Bridge SK5 with Piers and Abutments	m ²	660	44,464.26	29,346,000
SC3.6.6	Bridge SK6 with Piers and Abutments	m ²	620	44,464.26	27,568,000
SC3.6.7	Bridge SK7 with Piers and Abutments	m ²	620	44,464.26	27,568,000
SC3.6.8	Bridge SK8 with Piers and Abutments	m ²	280	44,464.26	12,450,000
SC3.7	Miscellaneous Works	L.S.			66,579,000
Sub-total					732,365,000
Direct Cost Total					979,508,000

Table E.19 Breakdown of Compensation Cost for Flood Diversion Channel
on Short-term Project

Item No.	Items	Unit	Quantity	Unit Cost (Rs./unit)	Cost (Rs.)
SCC	DIVERSION CHANNEL				
SCC1	LAND ACQUISITION				
SCC1.1	Residential Area A	m ²	0	11,000	0
SCC1.2	Residential Area B	m ²	4,500	5,500	24,750,000
SCC1.3	Residential Area C	m ²	0	3,000	0
SCC1.4	Agricultural Area A	m ²	0	2,000	0
SCC1.5	Agricultural Area B	m ²	65,000	1,600	104,000,000
SCC1.6	Bare Land A	m ²	0	2,000	0
SCC1.7	Bare Land B	m ²	39,000	1,600	62,400,000
SCC1.8	Forest	m ²	103,000	500	51,500,000
Sub-total					242,650,000
SCC2	HOUSE EVACUATION				
SCC2.1	House Type A	house	0	8,000,000	0
SCC2.2	House Type B	house	0	3,000,000	0
SCC2.3	House Type C	house	0	100,000	0
SCC2.4	House Type D	house	15	50,000	750,000
SCC2.5	Apartment House Type A	house	0	200,000,000	0
SCC2.6	Apartment House Type B	house	0	50,000,000	0
Sub-total					750,000
Total					243,400,000

Table E.20 Breakdown of Direct Cost for Supplementary Works for River improvement on Short Term Project

ITEM NO.	BQ-ITEMS	Unit	Quantity	Unit Cost	Cost
				(Rs./unit)	(Rs.)
SB	LAI NULLAH IMPROVEMENT				
SB1	RIVER DEEPENING				
SB1.1	Excavation Works				
SB1.1.1	Common Excavation	m ³	0	398.07	0
SB1.1.2	Rock Excavation	m ³	0	508.11	0
SB1.2	Reconstruction of Existing Bridge				
SB1.2.1	Chaklala Bridge (Downstream)	L.S.	0	94,036,000.00	0
SB1.2.2	Chaklala Bridge (Upstream)	L.S.	0	51,275,000.00	0
SB1.2.3	Railway Bridge	L.S.	0	34,311,000.00	0
SB1.2.4	Murree Road Bridge	L.S.	0	63,096,000.00	0
SB1.2.5	City Sadar Bridge	L.S.	0	55,659,000.00	0
SB1.2.6	Ratta Amral Bridge	L.S.	0	22,801,000.00	0
SB1.2.7	Gunj Mandi Bridge	L.S.	0	34,082,000.00	0
SB1.2.8	Khayaban S.S.Bridge	L.S.	0	50,335,000.00	0
SB1.2.9	Parrian Bridge	L.S.	0	11,832,000.00	0
SB1.2.10	Kattarian Bridge	L.S.	0	21,081,000.00	0
SB1.2.11	T1 Bridge (Tenawali Kas)	L.S.	0	20,005,439.00	0
SB1.3	Reinforcement Works for Bridge Foundation				
SB1.3.1	Dhoke Chiragh Din Bridge	L.S.	0	355,142.00	0
SB1.3.2	Gawal Mandi Bridge	L.S.	0	355,142.00	0
SB1.3.3	Pir Wadhai Bridge	L.S.	0	355,142.00	0
SB1.4	Miscellaneous Works	L.S.			0
Sub-total					0
SB2	SLOPE PROTECTION				
SB2.1	Slope Protection				
SB2.1.1	Revetment (Wet Stone Pitching)	m ²	302,000	1,204.09	363,635,000
SB2.1.2	Sodding	m ²	41,000	61.11	2,506,000
SB2.2	Drainage Outlet	place	220	4,383.78	964,000
SB2.3	Miscellaneous Works	L.S.			36,711,000
Sub-total					403,816,000
SB3	DOWNSTREAM RIVER IMPROVEMENT WITH SHORT CUT CHANNEL				
SB3.1	Clearing and Grubbing	m ²	8,000	16.91	135,000
SB3.2	Excavation and Embankment Works				
SB3.2.1	Common Excavation	m ³	31,000	314.50	9,750,000
SB3.2.2	Rock Excavation	m ³	0	508.11	0
SB3.2.3	Dike Embankment	m ³	2,000	122.85	246,000
SB3.3	Slope Protection				
SB3.3.1	Revetment (Wet Stone Pitching)	m ²	41,000	1,204.09	49,368,000
SB3.3.2	Sodding	m ²	5,600	61.11	342,000
SB3.4	Drainage Outlet	place	30	8,767.56	263,000
SB3.5	Miscellaneous Works	L.S.			6,010,000
Sub-total					66,114,000
SB4	BACKWATER LEVEE FOR TRIBUTARY				
SB4.1	Clearing and Grubbing	m ²	0	16.91	0
SB4.2	Excavation and Embankment Works				
SB4.2.1	Common Excavation	m ³	0	398.07	0
SB4.2.2	Rock Excavation	m ³	0	508.11	0
SB4.2.3	Dike Embankment	m ³	0	122.85	0
SB4.3	Slope Protection				
SB4.3.1	Revetment (Wet Stone Pitching)	m ²	0	1,204.09	0
SB4.3.2	Sodding	m ²	0	61.11	0
SB4.4	Drainage Outlet	place	0	8,767.56	0
SB4.5	Gate Structure				
SB4.5.1	Roller Gate H 2.0m x B 2.0m (with Electric Winch)	gate	0	1,870,000.00	0
SB4.5.2	Reinforced Concrete for Box Culvert	m ³	0	7,102.84	0
SB4.6	Miscellaneous Works	L.S.			0
Sub-total					0
Direct Cost Total					469,930,000