

TABLES

Table 1.1.1 Construction Works

	Unit	1st Stage			2nd Stage			3rd Stage			Total		
		D	H	T	D	H	T	D	H	T	D	H	T
1. UCCA													
1 UCCA Building	place	1	1	2			0			0	1	1	2
1 AMC	place	1	1	2			0			0	1	1	2
1 Inland Fish Center	place	1	1	2			0			0	1	1	2
1 Community Center with godown and rice mill	place	31	16	47	33	15	48	33	15	48	97	46	143
2. Infrastructure Development													
2 Irrigation													
2.1.1 Irrigation Canal	km	125	18	143			0			0	125	18	143
2.1.2 Drainage Canal	km			0		15	15			0	0	15	15
2.1.3 Low Lift Pump	Nos.	138	203	341			0			0	138	203	341
2.1.4 Floating Pump	Nos.	3	2	5			0			0	3	2	5
2.1.5 Buried Pipeline	place	20	15	35	20	14	34			0	40	29	69
2 Road													
2.2.1 Feeder A													
1) Road Body	km	13	5	18			0			0	13	5	18
2) Bridge	Nos.	3		3			0			0	3	0	3
2.2.2 Feeder B													
1) Road Body	km	35	26	61	42	7	49	30		30	107	33	140
2) Bridge	Nos.	17	15	32	28	5	33	16		16	61	20	81
2.2.3 Rural Road													
1) Road Body	km			0	12	32	44	23	16	39	35	48	83
2) Bridge	Nos.			0	5	26	31	17	12	29	22	38	60
2 Growth Center	place	3	2	5	2	1	3			0	5	3	8
2 Hat Market	place	9	3	12	9	3	12	9	1	10	27	7	34
3 Fish Pond	place	330	170	500	1000	500	1500	1670	830	2500	3000	1500	4500
3. Others													
3 High School	place	9	6	15	10	6	16			0	19	12	31
3 Drinking Water Supply	place	238	100	338	238	100	338			0	476	200	676
3 UHC	lot	1	1	2			0			0	1	1	2

Note: D= Daudkandi H= Homna T= Total
 AMC :Agriculture Modernization Center
 UHC: Upazila Health Center

Table 2.1.1 (1/2) List of Unit Construction Cost

(Unit: TK)

Item	Unit	Unit Rate	Remarks
I EARTHWORK			
I. 1 Canal re-excavation	Cu.m	15.54	LGEB 2.2.1
I. 2 Canal embankment	Cu.m	14.43	LGEB 2.1.2
I. 3 Road embankment	Cu.m	48.73	LGEB 2.3.1 & 2.1.6
I. 4 Tree planting	Nos.	261.00	LGEB 3.36 & M.Cost
I. 5 Turfing	Sq.m	4.66	LGEB 2.3.11
I. 6 Road pavement with bituminous material	Sq.m	260.00	Engineer's Estimate (E.E.)
I. 7 Drainage ditch	m	1,200.00	E.E.
II BRIDGE WORKS			
II. 1 144m (L) x 7.33m (W)	Nos.	17,480,000.00	E.E.
II. 2 96m (L) x 7.33m (W)	Nos.	12,134,000.00	E.E.
II. 3 84m (L) x 7.33m (W)	Nos.	10,797,000.00	E.E.
II. 4 36m (L) x 7.33m (W)	Nos.	5,446,000.00	E.E.
II. 5 24m (L) x 7.33m (W)	Nos.	4,110,000.00	E.E.
II. 6 12m (L) x 7.33m (W)	Nos.	2,770,000.00	E.E.
II. 7 96m (L) x 3.66m (W)	Nos.	6,938,000.00	E.E.
II. 8 84m (L) x 3.66m (W)	Nos.	6,223,000.00	E.E.
II. 9 36m (L) x 3.66m (W)	Nos.	3,365,000.00	E.E.
II. 10 24m (L) x 3.66m (W)	Nos.	2,651,000.00	E.E.
II. 11 12m (L) x 3.66m (W)	Nos.	1,936,000.00	E.E.
III BUILDING WORKS			
III. 1 Office, Laboratory, etc.			
a One story (RCC)	Sq.m	8,300.00	E.E.
b Two stories (RCC)	Sq.m	12,400.00	E.E.
III. 2 Shed for fish, meat, etc.			
a One story	Sq.m	2,100.00	E.E.
b Two stories	Sq.m	6,000.00	E.E.
III. 3 Gowdown	Sq.m	3,000.00	E.E.
III. 4 Community Center	Sq.m	4,500.00	E.E.
III. 5 Garage, Workshop	Sq.m	2,600.00	E.E.
III. 6 Slaughter shed	Place	32,000.00	E.E.
III. 7 Cow shed	Sq.m	2,000.00	E.E.
III. 8 Cold storage (200m ³)	Place	11,250,000.00	E.E.

Table 2.1.1 (2/2) List of Unit Construction Cost

(Unit: TK)

Item	Unit	Unit Rate	Remarks
IV EQUIPMENTS & FACILITIES			
IV. 1 Floating pump	Nos.	8,754,200.00	Supplier's Estimate
IV. 2 Low lift pump	Nos.	35,000.00	Market Price (M.P.)
IV. 3 Buried pipe line	Place	338,000.00	E.E.
IV. 4 Rice mill	Place	2,500,000.00	E.E.
IV. 5 Generator 40KVA	Nos.	220,000.00	M.P.
IV. 6 Tractor 50Hp	Nos.	475,000.00	M.P.
IV. 7 Power tiller 12Hp	Nos.	72,000.00	M.P.
IV. 8 Truck 5ton	Nos.	1,400,000.00	M.P.
IV. 9 Jeep type car	Nos.	800,000.00	M.P.
IV. 10 Auto-bike 80cc	Nos.	43,000.00	M.P.
IV. 11 Ambulance car	Nos.	1,400,000.00	E.E.
IV. 12 Motor boat	Nos.	500,000.00	E.E.
IV. 13 Laboratory equipment	L.S.	500,000.00	E.E.
IV. 14 TV & Video	Set	47,000.00	M.P.
V WATER SUPPLY & SANITATION			
V. 1 Deep tubewell	Place	222,000.00	E.E.
V. 2 Shallow tubewell - I	Place	51,000.00	E.E.
V. 3 Shallow tubewell - II	Place	17,700.00	E.E.
V. 4 Latrine	Place	136,000.00	E.E.
V. 5 Garbage pit	Place	2,000.00	E.E.
V. 6 Water supply system (Water tank and pipe)	Place	62,000.00	E.E.

Table 2.1.2 (1/3) Unit Rate in Comilla (1988-1989) prepared by LGEB

Item No.	Item	Unit	Unit Price	Remarks (LGEB Item No.)
1	Canal Re-excavation	Cu.m	15.54	LGEB 2.2.i
2	Embankment (Using Carted earth)	Cu.m	48.73	LGEB 2.3.i & LGEB 2.1.6
3	Embankment (Road, Bridge Approach and Irrigation)	Cu.m	14.43	LGEB 2.1.2
4	Compaction (Manual)	Cu.m	4.44	LGEB 2.1.6
5	Carted Earth	Cu.m	44.29	LGEB 2.3.1.ii
6	Earthwork in Box-cutting	Sq.m	8.52	LGEB 2.3.2.ii
7	Sand Filling in Sub-base	Sq.m	26.47	LGEB 3.1
8	Single Layer Brick Flat Soling	Sq.m	69.80	LGEB 3.12
9	Brick on End Edging	M	19.84	LGEB 3.16
10	50m Thick Compacted Premixed Bituminous Carpeting	Sq.m	145.68	LGEB 3.34
11	Cost of Collecting Sedling	Each	6.22	LGEB 3.36.i
12	Construction of Plant Bed	Each	5.33	LGEB 3.36.ii
13	Supply and Install of Bamboo Gabion	Each	75.92	LGEB 3.36.iii
14	Maintenance of Gabion, manuring, etc.	Each/Year	57.81	LGEB 3.36.v
15	Cement Concrete (1:3:6) in Foundation	Cu.m	1,564.91	LGEB 4.1
16	1st Class Brick Work in Cement Mortar (1:3)	Cu.m	1,399.38	LGEB 4.3
17	1st Class Brick Work in Abutment, Wingwalls, etc.	Cu.m	1,319.79	LGEB 4.5
18	1st Class Brick Work in Railing	Cu.m	1,342.55	LGEB 4.6
19	Flush Pointing to Brick Work	Cu.m	17.08	LGEB 4.8
20	RCC Work in Footing	Cu.m	2,397.99	LGEB 4.10.ii
21	RCC Work in Bottom Slab of Box Culvert	Cu.m	2,420.19	LGEB 4.10.iii
22	RCC Work in Vertical Members of Box Culvert	Cu.m	3,558.82	LGEB 4.10.iv
23	RCC Work in Top Slab of Box Culvert	Cu.m	3,589.82	LGEB 4.10.v
24	RCC Work in Wingwalls, Abutment, Beams, etc.	Cu.m	3,289.79	LGEB 4.10.viii
25	RCC Work in Girder, Cross Girder of Bridge (up to 10m)	Cu.m	3,288.02	LGEB 4.10.ix
26	RCC Work in Girder, Cross Girder of Bridge (beyond 10m)	Cu.m	3,332.42	LGEB 4.10.x
27	RCC Work in Deck Slab (up to 10m)	Cu.m	3,621.34	LGEB 4.10.xi
28	RCC Work in Deck Slab (beyond 10m)	Cu.m	3,654.64	LGEB 4.10.xii
29	RCC Work in Railing, Rail Post	Cu.m	3,389.10	LGEB 4.10.xiii

Table 2.1.2 (2/3) Unit Rate in Cornilla (1988-1989) prepared by LGEB

Item No.	Item	Unit	Unit Price	Remarks (LGEB Item No.)
30	6mm Thick Cement Plaster in Railing, Rail Post and elsewhere	Cu.m	55.23	LGEB 4.12
31	40mm Dia Rail Water Pipe	M	191.70	LGEB 4.13
32	Weep Hole in Wing Wall	Each	63.57	LGEB 4.18
33	M.S. Rod Reinforcement	Kg	23.10	LGEB 4.29
34	M.S. Rod Reinforcement (beyond 10m)	Kg	23.42	LGEB 4.30
35	1st Class Brick Bat Filling in Abutment, Wingwall Back Side	Cu.m	611.17	LGEB 4.34
36	Brick Matressing in Bridge Approachs	Sq.m	239.35	LGEB 4.35
37	Suppling Woodwn Piles	M	222.89	LGEB 4.38.ii
38	Labour for Driving Wooden Piles	M	55.68	LGEB 4.39
39	Single Layer Brick Flat Soling	Sq.m	69.80	LGEB 5.1
40	Mass Concrete (1:3:6) Work in Foundation and Floor	Cu.m	1,558.73	LGEB 5.2
41	1st Class Brick Work in Mortar (1:6)	Cu.m	1,225.73	LGEB 5.4
42	RCC work in Footing & Beam, etc. below plinth level	Cu.m	2,077.13	LGEB 5.6
43	Sand Filling in Foundation	Cu.m	150.58	LGEB 5.8
44	Damp Proof Course (DPC) 25mm Thick	Sq.m	69.03	LGEB 5.9
45	250mm Thick 1st Class Brick Work in Super Structure Wall	Cu.m	1,242.53	LGEB 5.11
46	125mm Thick Brick Work in Super Structure Wall	Cu.m	149.72	LGEB 5.18
47	Paten Stone Flooring (38mm)	Sq.m	107.29	LGEB 5.19
48	RCC Work	Cu.m	3,157.93	LGEB 5.27
49	M.S. Rod Reinforcement	Kg	23.22	LGEB 5.30
50	Sand Cement Plaster 19mm Thick	Sq.m	45.41	LGEB 5.31.i
51	Sand Cement Plaster 1:4, 13mm Thick	Sq.m	35.68	LGEB 5.32
52	Sand Cement Plaster 1:6, 13mm Thick	Sq.m	30.89	LGEB 5.33
53	Sand Cement Plaster 1:4, 8mm Thick	Sq.m	30.26	LGEB 5.34
54	Lime Terracing	Sq.m	235.14	LGEB 5.35
55	Timber Frames	Cu.m	19,857.47	LGEB 5.37.i
56	Wooden Panelled Shutters 40mm Thick in Doors	Sq.m	963.40	LGEB 5.39.iii
57	Wooden Panelled Shutters 40mm Thick in Windows	Sq.m	1,080.35	LGEB 5.40.i
58	Glass Panes in Door, Window (3mm)	Sq.m	384.99	LGEB 5.44

Table 2.1.2 (3/3) Unit Rate in Comilla (1988-1989) prepared by LGEB

Item No.	Item	Unit	Unit Price	Remarks (LGEB Item No.)
59	M.S. Grills in Windows	Sq.m	665.86	LGEB 5.48
60	Steel Gate	Sq.m	932.54	LGEB 5.56
61	White Washing two Coats	Sq.m	4.11	LGEB 5.66.i
62	Colour Washing Two Coats	Sq.m	5.11	LGEB 5.66.2
63	Two Coat of Synthetic enamel Paint	Sq.m	38.30	LGEB 5.68
64	Two Coat of Synthetic enamel Paint to GI Sheet	Sq.m	41.92	LGEB 5.69
65	Galvanized Iron Sheet	Sq.m	224.22	LGEB 5.74
66	Surface Drain	M	214.21	LGEB 5.86
67	Steel Work for Roof Trusses	Ton	24,345.30	LGEB 5.101
68	Supply, Fitting & Fixing of G.I Pipe (ø 50mm)	M	200.91	LGEB 7.1.1.i
69	Supply, Fitting & Fixing of G.I Pipe (ø 38mm)	M	114.55	LGEB 7.1.1.ii
70	Supply, Fitting & Fixing of G.I Pipe (ø 20mm)	M	83.05	LGEB 7.1.1.iv
71	400 Gallons Capacity G.I Tank	Each	5,921.41	LGEB 7.1.4
72	Ideal Standard Indian Type W.C.	Each	1,961.51	LGEB 7.2.1.1
73	Wash Hand Basin	Each	1,433.90	LGEB 7.2.2
74	H.C.I. Pipe (100mm)	M	268.50	LGEB 7.3.1.i
75	H.C.I. Pipe (50mm)	M	187.45	LGEB 7.3.1.ii
76	H.C.I. Floor Trap	Each	144.75	LGEB 7.3.3
77	Supplying, Laying & Joining RCC Pipe	M	104.67	LGEB 7.4.1.i
78	Construction of Inspection Pit	Each	1,619.53	LGEB 7.4.2
79	Construction of Septic Tank	Each	19,333.07	LGEB 7.4.4.i
80	Construction of Soak Well	Each	8,653.22	LGEB 7.4.5
81	Supplying and Fixing Pump No.6	Each	641.03	LGEB 7.5.2
82	Supplying G.I Pipe	M	111.56	LGEB 7.5.3.i
83	Strainer 75mm, Supplying and Fixing	Each	735.93	LGEB 7.5.4
84	Labour for Sinking G.I Pipe	M	86.58	LGEB 7.5.5.iii

Table 2.1.3 Labor Charge & Low Material Cost in Comila

(Unit : TK)			
	Item	Unit	Price
I.	Labour Charge		
1- 1	Common Labour	TK/Day	40.0
1- 2	Skilled Labour	TK/Day	45.0
1- 3	Carpenter	TK/Day	80.0
1- 4	Head Mason	TK/Day	90.0
1- 5	Mason	TK/Day	80.0
1- 6	Plumber	TK/Day	90.0
1- 7	Painter	TK/Day	90.0
1- 8	Blacksmith	TK/Day	60.0
1- 9	Welder	TK/Day	80.0
1- 10	Barder	TK/Day	50.0
II	Low Materials		
2- 1	Cement	Bag	150.0
2- 2	White Cement	Bag	500.0
2- 3	Stone Boulder	Cu.m	750.0
2- 4	Stone Shingle	Cu.m	650.0
2- 5	Pea Gravel	Cu.m	530.0
2- 6	Sand FM 2.5	Cu.m	500.0
2- 7	Sand FM 1.8	Cu.m	200.0
2- 8	Sand FM 0.8	Cu.m	90.0
2- 9	MS Rod	Kg	20.0
2- 10	MS Angle, Flat Bar	Kg	21.0
2- 11	Corrugated Iron Sheet (24 B.W.G.)	Bundle	3,200.0
2- 12	Corrugated Iron Sheet (26 B.W.G.)	Bundle	2,600.0
2- 13	Brick (1st Class)	Each	1.8
2- 14	Nails, Nutbolt	Kg	35.0
2- 15	G.I.Pipe 13mm	M	48.0
2- 16	G.I.Pipe 19mm	M	67.0
2- 17	G.I.Pipe 25mm	M	88.5
2- 18	G.I.Pipe 38mm	M	94.0
2- 19	G.I.Pipe 50mm	M	170.0
2- 20	G.I.Pipe 75mm	M	216.0
2- 21	PVC Pipe 100mm	M	115.0
2- 22	PVC Pipe 38mm	M	39.0
2- 23	PVC Pipe 31mm	M	23.0
2- 24	PVC Pipe 20mm	M	14.0
III	FUEL		
3- 1	Petrol	Liter	13.5
3- 2	Diesel	Liter	7.5

Table 2.2.1 Direct Construction Cost

(Unit: million TK)

Item	Daudkandi	Homna	Total
1. UCCA	570.8	294.9	865.7
1 UCCA Building	18.4	18.4	36.8
1 AMC	24.4	24.4	48.8
1 Inland Fish Center	7.1	5.0	12.1
1 Godown cum Community Center	520.9	247.1	768.0
2. Infrastructure Development	1,186.7	501.6	1,688.3
2 Irrigation	77.1	38.1	115.2
2.1.1 Re-excavation of Irrigation Canal	(32.4)	(2.7)	(35.1)
2.1.2 Re-excavation of Drainage Canal	()	(0.9)	(0.9)
2.1.3 Low Lift Pump	(4.8)	(7.1)	(11.9)
2.1.4 Floating Pump	(26.3)	(17.5)	(43.8)
2.1.5 Buried Pipeline	(13.6)	(9.9)	(23.5)
2 Road	527.5	289.5	817.0
2.2.1 Feeder A	(55.7)	(6.0)	(61.7)
1) Road Body	(16.6)	(6.0)	(22.6)
2) Bridge	(39.1)	(-)	(39.1)
2.2.2 Feeder B	(374.3)	(131.0)	(505.3)
1) Road Body	(183.9)	(54.2)	(238.1)
2) Bridge	(190.4)	(76.8)	(267.2)
2.2.3 Rural Road	(97.5)	(152.5)	(250.0)
1) Road Body	(49.9)	(66.1)	(116.0)
2) Bridge	(47.6)	(86.4)	(134.0)
2 Growth Center	49.0	33.0	82.0
2 Hat Market	95.9	27.5	123.4
3 Fishery Pond Improvement	437.2	113.5	550.7
3. Others	121.4	72.4	193.8
3 High School	95.0	60.0	155.0
3 Drinking Water Supply	24.2	10.2	34.4
3 UHC	2.2	2.2	4.4
Total	1,878.9	868.9	2,747.8

Table 2.2.2 Construction Cost

Items	(Unit: million TK)					
	1st Stage		2nd Stage		3rd Stage	
	Daudkandi	Homna	Daudkandi	Homna	Daudkandi	Homna
	Total		Total		Total	
1. Direct Construction Cost						
1. UCCA	216.4	133.7	177.2	80.6	177.2	80.6
1) UCCA	(18.4)	(18.4)	()	()	()	()
2) AMC	(24.4)	(24.4)	()	()	()	()
4) Inland Fish Center	(7.1)	(5.0)	()	()	()	()
3) Community Centre with Godt and Rice Mill	(166.5)	(85.9)	(177.2)	(80.6)	(177.2)	(80.6)
2. Infrastructure Development	344.9	180.8	395.3	205.8	446.5	115.0
1) Irrigation	(70.3)	(32.4)	(6.8)	(5.7)	()	()
2) Road	(159.4)	(95.2)	(189.4)	(146.0)	(178.7)	(48.3)
3) Growth Center	(31.9)	(28.5)	(17.1)	(4.5)	()	()
4) Hat Market	(35.2)	(11.8)	(36.3)	(11.8)	(24.4)	(3.9)
5) Fish Pond	(48.1)	(12.9)	(145.7)	(37.8)	(243.4)	(62.8)
3. Others	59.3	37.3	62.1	35.1	0.0	0.0
1) High School	(45.0)	(30.0)	(50.0)	(30.0)	()	()
2) Drinking Water Supply	(12.1)	(5.1)	(12.1)	(5.1)	()	()
3) UHC	(2.2)	(2.2)	()	()	()	()
Sub-total	620.6	351.8	634.6	321.5	623.7	195.6
2. Land Acquisition	31.0	17.6	31.8	16.1	31.2	9.8
3. Administration	31.0	17.6	31.8	16.1	31.2	9.8
4. Physical Contingency	93.0	52.8	95.2	48.2	93.6	29.4
5. Engineering Services	93.0	52.8	95.2	48.2	93.6	29.4
Total	868.6	492.6	888.6	450.1	873.3	274.0
6. Price Contingency	171.0	97.5	543.7	276.0	1,004.0	314.0
Grand Total	1,039.6	590.1	1,432.3	726.1	1,877.3	588.0
					4,349.2	1,904.2
						6,253.4

Table 2.2.3 (1/3) Breakdown of Direct Construction Cost
(UCCA: DAUDIKANDI UPAZILA)

Item	Unit	Q'ty	Unit Price (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				216.3
I-1 UCCA Facilities				18.4
I-1.1 Building				<u>11.57</u>
a Hall and Storage	Sq.m	900	8,300	7.47
b Office	Sq.m	500	4,100	2.05
c Training room	Sq.m	500	4,100	2.05
I-1.2 Facilities				<u>3.00</u>
a Training equipment				
i TV & Video	Set	1	43,000	0.04
ii Furniture	L.S.	1	457,000	0.46
b Agricultural input	L.S.	1	500,000	0.50
c Cottage industry input	L.S.	1	500,000	0.50
d Water supply	Set	1	62,000	0.06
e Deep Tubewell	Place	1	222,000	0.22
f Miscellaneous	L.S.	1	1,216,000	1.22
I-1.3 Vehicles				<u>2.46</u>
a Jeep type car	Nos.	2	800,000	1.60
b Auto-bike	Nos.	20	43,000	0.86
I-1.4 Access Road (120m)	Sq.m	720	480	<u>0.35</u>
I-1.5 Livestock Office				<u>1.00</u>
a Poultry office	Sq.m	20	2,000	0.04
b Facilities				
i Incubator	Unit	2	25,000	0.05
ii Other equipment	L.S.	1	125,000	0.13
iii Truck	Nos.	1	700,000	0.70
iv Auto-bike	Nos.	2	43,000	0.09

Table 2.2.3 (2/3) Breakdown of Direct Construction Cost
(UCCA : DAUDIKANDI UPAZILA)

Item	Unit	Q'ty	Unit Price (TK)	Amount (Million TK)
I-2 AMC				24.4
I-2.1 Buildings				<u>11.4</u>
a Office, Laboratory, etc.	Sq.m	1,050	8,300	8.72
b Store	Sq.m	100	3,000	0.30
c Workshop	Sq.m	400	2,600	1.04
d Garage	Sq.m	500	2,600	1.30
I-2.2 Facilities				<u>0.5</u>
a Shallow Tubewell	Set	1	51,000	0.05
b Water tank & pipe line	Set	1	62,000	0.06
c Generator	Nos.	1	220,000	0.22
d Miscellaneous	L.S.	1	167,000	0.17
I-2.3 Farm				<u>0.7</u>
a Farm construction	Sq.m	14,400	26	0.37
b Irrigation facilities				
i Buried pipe line	ha	2	6,100	0.01
ii Deep Tubewell	Set	1	222,000	0.22
iii Miscellaneous	L.S.	1	48,600	0.05
I-2.4 Equipment & machinery				<u>9.9</u>
a Tractor 50Hp	Nos.	5	475,000	2.38
b Power tiller 12Hp	Nos.	10	72,000	0.72
c Irrigation pump	Nos.	10	35,000	0.35
d Truck 5ton	Nos.	3	1,400,000	4.20
e Auto-bike	Nos.	5	43,000	0.22
f Machinery tool	L.S.	1	1,500,000	1.50
g Motor boat	Nos.	1	500,000	0.50
I-2.5 Road Construction				<u>2.0</u>
a Main road 700m	Sq.m	4,200	480	2.02
I-3 Inland Fish Culture Center				7.1
I-3.1 Buildings				<u>4.2</u>
a Office	Sq.m	100	8,300	0.83
b Laboratory	Sq.m	200	8,300	1.66
c Training room	Sq.m	100	8,300	0.83
d Dormitory	Sq.m	100	8,300	0.83
e Water supply system	Sq.m	1	62,000	0.06
I-3.2 Fish farm				<u>0.1</u>
a Excavation	Cu.m	1,800	16	0.03
b Embankment	Cu.m	1,800	14	0.03
c Miscellaneous	L.S.	1	54,000	0.05

Table 2.2.3 (3/3) Breakdown of Direct Construction Cost
(UCCA : DAUDIKANDI UPAZILA)

Item	Unit	Q'ty	Unit Price (TK)	Amount (Million TK)
I-3.3 Equipments				<u>2.7</u>
a Generator 40KVA	Set	1	220,000	0.22
b Deep tubewell	Place	1	222,000	0.22
c Drainage pump	Set	3	35,000	0.11
d Water delivery pipe	m	1,000	201	0.20
e Aeration system	Set	3	500,000	1.50
f Testing equipment	Set	1	500,000	0.50
I-4 Community Center cum Godown	Place	31	5,370,000	166.5
I-4.1 Community Center				<u>1.25</u>
a Building	Sq.m	200	4,500	0.90
b Facilities				<u>0.35</u>
i Training facilities	L.S.	1	200,000	0.20
ii Water supply	Set	1	62,000	0.06
iii Shallow tubewell - I	Set	1	51,000	0.05
iv Miscellaneous	L.S.	1	37,000	0.04
I-4.2 Godown & Rice Mill				<u>4.12</u>
a Building	Sq.m	540	3,000	1.62
b Rice Mill	Set	1	2,500,000	2.50
II SECOND STAGE WORKS				177.2
II-1 Community Center cum Godown	Place	33	5,370,000	177.21
III THIRD STAGE WORKS				177.2
III-1 Community Center cum Godown	Place	33	5,370,000	177.21

Table 2.2.4 Breakdown of Direct Construction Cost
(IRRIGATION: DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				<u>70.3</u>
I-1 Irrigation Canal Re-excavation(125.4km)	Cu.m	2,085,400	16	32.41
I-2 Supplying of Floating Pump (12.5 Cusec)	Nos.	3	8,754,200	26.26
I-3 Supplying of Low Lift Pump (2.0 Cusec)	Nos.	138	35,000	4.83
I-4 Construction of Buried Pipe-line System	Place	20	338,000	6.76
II SECOND STAGE WORKS				<u>6.8</u>
II-1 Construction of Buried Pipe-line System	Place	20	338,000	6.76

Table 2.2.5 (1/4) Breakdown of Direct Construction Cost
(ROAD : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				159.4
I-1 Feeder A (Gouripur-Batakandi)				55.72
a Earthwork				<u>16.65</u>
i Filling	Cu.m	46,400	49	2.26
ii Pavement	Cu.m	49,700	260	12.92
iii Tree planting	Nos.	4,500	261	1.17
iv Turfing	Sq.m	61,700	5	0.29
b Bridge Construction				<u>39.07</u>
i 144m x 7.33m	Nos.	2	17,480,000	34.96
ii 24m x 7.33m	Nos.	1	4,110,000	4.11
I-2 Feeder B				103.6
I-2.1 D-3 (Gouripur-kachua)				30.70
a Earthwork				<u>19.62</u>
i Filling	Cu.m	129,400	49	6.31
ii Pavement	Cu.m	44,000	260	11.44
iii Tree planting	Nos.	4,800	261	1.25
iv Turfing	Sq.m	134,200	5	0.63
b Bridge Construction				<u>11.08</u>
i 12m x 7.33m	Nos.	4	2,770,000	11.08
I-2.2 D-4 (Pannai-Sree - Raiyercher)				51.41
a Earthwork				<u>29.25</u>
i Filling	Cu.m	193,000	49	9.40
ii Pavement	Cu.m	65,500	260	17.03
iii Tree planting	Nos.	7,200	261	1.88
iv Turfing	Sq.m	200,100	5	0.93
b Bridge Construction				<u>22.16</u>
i 12m x 7.33m	Nos.	8	2,770,000	22.16
I-2.3 D-8 (Daudkandi - Goalmoni)				21.53
a Earthwork				<u>7.68</u>
i Filling	Cu.m	50,700	49	2.47
ii Pavement	Cu.m	17,200	260	4.47
iii Tree planting	Nos.	1,900	261	0.50
iv Turfing	Sq.m	52,500	5	0.24
b Bridge Construction				<u>13.85</u>
i 12m x 7.33m	Nos.	5	2,770,000	13.85

Table 2.2.5 (2/4) Breakdown of Direct Construction Cost
(ROAD : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
II SECOND STAGE WORKS				189.2
II-1 Feeder B				162.9
II-1.1 D-2 (Gouripur - Ashmania)				29.69
a Earthwork				<u>13.07</u>
i Filling	Cu.m	86,200	49	4.20
ii Pavement	Cu.m	29,300	260	7.62
iii Tree planting	Nos.	3,200	261	0.84
iv Turfing	Sq.m	89,400	5	0.42
b Bridge Construction				<u>16.62</u>
i 12m x 7.33m	Nos.	6	2,770,000	16.62
II-1.2 D-7 (Shahidnagar - Goalmari)				15.00
a Earthwork				<u>9.46</u>
i Filling	Cu.m	62,500	49	3.05
ii Pavement	Cu.m	21,200	260	5.51
iii Tree planting	Nos.	2,300	261	0.60
iv Turfing	Sq.m	64,800	5	0.30
b Bridge Construction				<u>5.54</u>
i 12m x 7.33m	Nos.	2	2,770,000	5.54
II-1.3 D-9 (Elliotgonji - Mohammedpur)				44.84
a Earthwork				<u>17.14</u>
i Filling	Cu.m	113,200	49	5.52
ii Pavement	Cu.m	38,400	260	9.98
iii Tree planting	Nos.	4,200	261	1.10
iv Turfing	Sq.m	117,400	5	0.55
b Bridge Construction				<u>27.70</u>
i 12m x 7.33m	Nos.	10	2,770,000	27.70
II-1.4 D-17 (Batakandi - Rumpur)				73.37
a Earthwork				<u>33.43</u>
i Filling	Cu.m	284,600	49	13.87
ii Pavement	Cu.m	64,400	260	16.74
iii Tree planting	Nos.	7,000	261	1.83
iv Turfing	Sq.m	212,400	5	0.99
b Bridge Construction				<u>39.74</u>
i 96m x 7.33m	Nos.	1	12,134,000	12.13
ii 36m x 7.33m	Nos.	1	5,446,000	5.45
iii 12m x 7.33m	Nos.	8	2,770,000	22.16
c Ferry	Nos.	1	200,000	<u>0.20</u>

Table 2.2.5 (3/4) Breakdown of Direct Construction Cost
(ROAD : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
II-2 Rural Road				26.3
II-2.1 D-6 (Batakandi - Kalir)				16.59
a Earthwork				<u>10.78</u>
i Filling	Cu.m	75,000	49	3.65
ii Pavement	Cu.m	22,900	260	5.95
iii Tree planting	Nos.	3,000	261	0.78
iv Turfing	Sq.m	83,900	5	0.39
b Bridge Construction				<u>5.81</u>
i 12m x 3.66m	Nos.	3	1,936,000	5.81
II-2.2 D-13,14 (Ruhulania - Hassanpur)				9.75
a Earthwork				<u>5.88</u>
i Filling	Cu.m	41,000	49	2.00
ii Pavement	Cu.m	12,500	260	3.25
iii Tree planting	Nos.	1,600	261	0.42
iv Turfing	Sq.m	45,800	5	0.21
b Bridge Construction				<u>3.87</u>
i 12m x 3.66m	Nos.	2	1,936,000	3.87
III THIRD STAGE WORKS				171.7
III-1 Feeder B				107.5
III-1.1 D-5 (Batakandi - Raipur)				43.08
a Earthwork				<u>23.69</u>
i Filling	Cu.m	156,300	49	7.62
ii Pavement	Cu.m	53,100	260	13.81
iii Tree planting	Nos.	5,800	261	1.51
iv Turfing	Sq.m	162,100	5	0.76
b Bridge Construction				<u>19.39</u>
i 12m x 7.33m	Nos.	7	2,770,000	19.39
III-1.2 D-10 (Kalasona - Barkota)				24.47
a Earthwork				<u>10.62</u>
i Filling	Cu.m	70,100	49	3.42
ii Pavement	Cu.m	23,800	260	6.19
iii Tree planting	Nos.	2,600	261	0.68
iv Turfing	Sq.m	72,700	5	0.34
b Bridge Construction				<u>13.85</u>
i 12m x 7.33m	Nos.	5	2,770,000	13.85

Table 2.2.5 (4/4) Breakdown of Direct Construction Cost
(ROAD : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
III-1.3 D-15 (Daudkandi - Mohanpur)				39.99
a Earthwork				<u>19.55</u>
i Filling	Cu.m	190,900	49	9.30
ii Pavement	Cu.m	33,700	260	8.76
iii Tree planting	Nos.	3,700	261	0.97
iv Turfing	Sq.m	111,000	5	0.52
b Bridge Construction				<u>20.44</u>
i 96m x 7.33m	Nos.	1	12,134,000	12.13
ii 12m x 7.33m	Nos.	3	2,770,000	8.31
III-2 Rural Road				64.1
III-2.1 D-11 (Elliotgonji - Panchau)				19.01
a Earthwork				<u>9.33</u>
i Filling	Cu.m	65,000	49	3.17
ii Pavement	Cu.m	19,800	260	5.15
iii Tree planting	Nos.	2,600	261	0.68
iv Turfing	Sq.m	72,700	5	0.34
b Bridge Construction				<u>9.68</u>
i 12m x 3.66m	Nos.	5	1,936,000	9.68
III-2.2 D-12 (Goalmari - Mollakandi)				12.27
a Earthwork				<u>6.46</u>
i Filling	Cu.m	45,000	49	2.19
ii Pavement	Cu.m	13,700	260	3.56
iii Tree planting	Nos.	1,800	261	0.47
iv Turfing	Sq.m	50,300	5	0.23
b Bridge Construction				<u>5.81</u>
i 12m x 3.66m	Nos.	3	1,936,000	5.81
III-2.3 D-16 (Goalmari - Sreerayerchar)				21.37
a Earthwork				<u>9.75</u>
i Filling	Cu.m	68,000	49	3.31
ii Pavement	Cu.m	20,700	260	5.38
iii Tree planting	Nos.	2,700	261	0.70
iv Turfing	Sq.m	76,000	5	0.35
b Bridge Construction				<u>11.62</u>
i 12m x 3.66m	Nos.	6	1,936,000	11.62
III-2.4 D-18 (Gouripur - Lalpur)				11.49
a Earthwork				<u>7.62</u>
i Filling	Cu.m	53,000	49	2.58
ii Pavement	Cu.m	16,200	260	4.21
iii Tree planting	Nos.	2,100	261	0.55
iv Turfing	Sq.m	59,300	5	0.28
b Bridge Construction				<u>3.87</u>
i 96m x 3.66m	Nos.	1	6,938,000	6.94
ii 12m x 3.66m	Nos.	2	1,936,000	3.87

Table 2.2.6 (1/2) Breakdown of Direct Construction Cost
(GROWTH CENTER : DAUDKANDI UPAZILA)

	Item	Unit	Q'ty	Unit Rate (TK.)	Amount (Million TK)
I	FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				
I-1	Daudkandi Bazar				<u>9.76</u>
	Shed for fish, meat, rice, etc.	Sq.m	450	6,000	2.70
	Slaughter Shed	Place	1	32,000	0.03
	Internal road pavement	Sq.m	9,150	260	2.38
	Drain ditch	m	1,550	1,200	1.86
	Deep tubewell	Place	1	222,000	0.22
	Latrine	Place	10	136,000	1.36
	Gowdown	Sq.m	340	3,000	1.02
	Electric line extension	m	500	300	0.15
	Garbage pit	Place	10	2,000	0.02
	Shallow tubewell-II	Place	1	17,700	0.02
I-2	Gouripur Bazar				<u>10.56</u>
	Shed for fish, meat, rice, etc.	Sq.m	590	6,000	3.54
	Slaughter Shed	Place	1	32,000	0.03
	Cow shed	Sq.m	110	2,000	0.22
	Internal road pavement	Sq.m	6,400	260	1.66
	Drain ditch	m	1,100	1,200	1.32
	Deep tubewell	Place	1	222,000	0.22
	Latrine	Place	10	136,000	1.36
	Gowdown	Sq.m	670	3,000	2.01
	Electric line extension	m	500	300	0.15
	Garbage pit	Place	10	2,000	0.02
	Shallow tubewell-II	Place	1	17,700	0.02
I-3	Elliotgonji Bazar				<u>11.58</u>
	Shed for fish, meat, rice, etc.	Sq.m	590	6,000	3.54
	Slaughter Shed	Place	1	32,000	0.03
	Cow shed	Sq.m	110	2,000	0.22
	Internal road pavement	Sq.m	10,700	260	2.78
	Drain ditch	m	1,850	1,200	2.22
	Deep tubewell	Place	1	222,000	0.22
	Latrine	Place	10	136,000	1.36
	Gowdown	Sq.m	340	3,000	1.02
	Electric line extension	m	500	300	0.15
	Garbage pit	Place	10	2,000	0.02
	Shallow tubewell-II	Place	1	17,700	0.02

Table 2.2.6 (2/2) Breakdown of Direct Construction Cost
(GROWTH CENTER : DAUDKANDI UPAZILA)

	Item	Unit	Q'ty	Unit Rate (TK.)	Amount (Million TK)
II.	SECOND STAGE WORKS				<u>17.06</u>
II-1	Batakandi Bazar				<u>10.24</u>
	Shed for fish, meat, rice, etc.	Sq.m	590	6,000	3.54
	Slaughter Shed	Place	1	32,000	0.03
	Cow shed	Sq.m	110	2,000	0.22
	Internal road pavement	Sq.m	8,550	260	2.22
	Drain ditch	m	1,200	1,200	1.44
	Deep tubewell	Place	1	222,000	0.22
	Latrine	Place	10	136,000	1.36
	Gowdown	Sq.m	340	3,000	1.02
	Electric line extension	m	500	300	0.15
	Garbage pit	Place	10	2,000	0.02
	Shallow tubewell-II	Place	1	17,700	0.02
II-2	Goarmari Bazar				<u>6.82</u>
	Shed for fish, meat, rice, etc.	Sq.m	190	6,000	1.14
	Slaughter Shed	Place	1	32,000	0.32
	Internal road pavement	Sq.m	6,400	260	1.66
	Drain ditch	m	1,100	1,200	1.32
	Shallow tubewell-I	Place	10	51,000	0.51
	Latrine	Place	5	136,000	0.68
	Gowdown	Sq.m	340	3,000	1.02
	Garbage pit	Place	10	2,000	0.02
	Shallow tubewell-II	Place	1	17,700	0.02
	Shed for cloth	Sq.m	60	2,100	0.13

Table 2.2.7 (1/6) Breakdown of Direct Construction Cost
(HAT MARKET: DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				35.2
I-1 Rampur Bazar				<u>3.92</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,200	260	0.83
Drain ditch	m	400	1,200	0.48
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
I-2 Khirachaik Bazar				<u>2.82</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	540	260	0.14
Drain ditch	m	60	1,200	0.07
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
I-3 Baiddhanathpur Bazar				<u>3.79</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	2,800	260	0.73
Drain ditch	m	380	1,200	0.46
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
I-4 Seennagar Bazar				<u>3.96</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,200	260	0.83
Drain ditch	m	430	1,200	0.52
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
I-5 Dashkandi Bazar				<u>3.11</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	3,200	260	0.83
Drain ditch	m	430	1,200	0.52
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10

Table 2.2.7 (2/6) Breakdown of Direct Construction Cost
(HAT MARKET : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I-6 Asmania Bazar				<u>3.95</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,100	260	0.81
Drain ditch	m	450	1,200	0.54
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
I-7 Sree Raiyerchar Bazar				<u>2.89</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	2,560	260	0.67
Drain ditch	m	380	1,200	0.46
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.01
Shallow tubewell-I	Place	2	51,000	0.10
I-8 Paler Bazar				<u>5.38</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	6,400	260	1.66
Drain ditch	m	920	1,200	1.10
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
I-9 Barkota Bazar				<u>5.38</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	6,400	260	1.66
Drain ditch	m	920	1,200	1.10
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
II SECOND STAGE WORKS				<u>36.3</u>
II-1 Mohammedpur Bazar				<u>2.82</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	540	260	0.14
Drain ditch	m	60	1,200	0.07
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15

Table 2.2.7 (3/6) Breakdown of Direct Construction Cost
(HAT MARKET : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
II-2 Kalir Bazar				<u>4.08</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,400	260	0.88
Drain ditch	m	490	1,200	0.59
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
II-3 Machinpur Bazar				<u>5.38</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	6,400	260	1.66
Drain ditch	m	920	1,200	1.10
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
II-4 Naiyer Bazar				<u>5.38</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	6,400	260	1.66
Drain ditch	m	920	1,200	1.10
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
II-5 Sundarpur Bazar				<u>5.38</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	6,400	260	1.66
Drain ditch	m	920	1,200	1.10
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
II-6 Raypur Bazar				<u>4.45</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	4,270	260	1.11
Drain ditch	m	610	1,200	0.73
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15

Table 2.2.7 (4/6) Breakdown of Direct Construction Cost
(HAT MARKET: DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
II-7 Juranpur Bazar				<u>3.92</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,200	260	0.83
Drain ditch	m	400	1,200	0.48
Latrine	Place	3	136,000	0.41
Garbage pit	Place	3	2,000	0.01
Shallow tubewell-I	Place	3	51,000	0.15
II-8 Gobindapur Bazar				<u>2.92</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	2,700	260	0.70
Drain ditch	m	380	1,200	0.46
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
II-9 Karaikandi Bazar				<u>2.02</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	650	260	0.17
Drain ditch	m	80	1,200	0.10
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III THIRD STAGE WORKS				24.3958
III-1 Uzirakandi Bazar				<u>1.97</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	540	260	0.14
Drain ditch	m	60	1,200	0.07
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III-2 Lalpur Bazar				<u>2.01</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	650	260	0.17
Drain ditch	m	70	1,200	0.08
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10

Table 2.2.7 (5/6) Breakdown of Direct Construction Cost
(HAT MARKET: DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
III-3 Hasanabad Bazar				<u>3.19</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	3,650	260	0.95
Drain ditch	m	400	1,200	0.48
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III-4 Kawadi azar				<u>2.50</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	1,710	260	0.44
Drain ditch	m	250	1,200	0.30
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III-5 Shahidnagar Bazar				<u>1.97</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	540	260	0.14
Drain ditch	m	60	1,200	0.07
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III-6 Mazidpur Bazar				<u>4.53</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	6,400	260	1.66
Drain ditch	m	920	1,200	1.10
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III-7 Hat Khola Bazar				<u>2.69</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	2,140	260	0.56
Drain ditch	m	310	1,200	0.37
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10

Table 2.2.7 (6/6) Breakdown of Direct Construction Cost
(HAT MARKET : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
III-8 Kalasona Bazar				<u>1.94</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	430	260	0.11
Drain ditch	m	60	1,200	0.07
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III-9 Mohammedpur Bazar				<u>3.60</u>
Sales shed	Sq.m	230	6,000	1.38
Internal road pavement	Sq.m	4,270	260	1.11
Drain ditch	m	610	1,200	0.73
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10

Table 2.2.8 Breakdown of Direct Construction Cost
(IMPROVEMENT OF FISH POND : DAUDKANDI UPAZILA)

	Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I	FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				48.1
I-1	Improvement of fish pond	Place	330	145,743	48.10
	a Re-excavation	Cu.m	5,200	16	80,808
	b Embankment	Cu.m	4,500	14	64,935
	Unit Cost (TK/Place)				145,743
II	SECOND STAGE WORKS				145.7
II-1	Improvement of fish pond	Place	1,000	145,743	145.74
III	THIRD STAGE WORKS				243.4
III-1	Improvement of fish pond	Place	1,670	145,743	243.39

Table 2.2.9 Breakdown of Direct Construction Cost
(OTHERS : DAUDKANDI UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				59.3
I-1 High School Improvement	Place	9	5,000,000	<u>45.0</u>
I-2 Drinking Water Supply	Place	238	51,000	<u>12.1</u>
I-3 UHC (Upazila health complex)				<u>2.2</u>
a Ambulance car	Nos.	1	1,400,000	1.40
b Jeep type car	Nos.	1	800,000	0.80
II SECOND STAGE WORKS				62.1
I-1 High School Improvement	Place	10	5,000,000	<u>50.0</u>
I-2 Drinking Water Supply	Place	238	51,000	<u>12.1</u>

Table 2.2.10 (1/3) Breakdown of Direct Construction Cost
(UCCA : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Price (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				
I-1 UCCA Facilities				18.4
I-1.1 Building				11.57
a Hall and Storage	Sq.m	900	8,300	7.47
b Office	Sq.m	500	4,100	2.05
c Training room	Sq.m	500	4,100	2.05
I-1.2 Facilities				3.00
a Training equipment				0.04
i TV & Video	Set	1	43,000	
ii Furniture	L.S.	1	457,000	0.46
b Agricultural input	L.S.	1	500,000	0.50
c Cottage industry input	L.S.	1	500,000	0.50
d Water supply	Set	1	62,000	0.06
e Deep Tubewell	Place	1	222,000	0.22
f Miscellaneous	L.S.	1	1,216,000	1.22
I-1.3 Vehicles				2.46
a Jeep type car	Nos.	2	800,000	1.60
b Auto-bike	Nos.	20	43,000	0.86
I-1.4 Access Road (120m)	Sq.m	720	480	0.35
I-1.5 Livestock Office				1.00
a Poultry office	Sq.m	20	2,000	0.04
b Facilities				
i Incubator	Unit	2	25,000	0.05
ii Other equipment	L.S.	1	125,000	0.13
iii Truck	Nos.	1	700,000	0.70
iv Auto-bike	Nos.	2	43,000	0.09

Table 2.2.10 (2/3) Breakdown of Direct Construction Cost
(UCCA : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Price (TK)	Amount (Million TK)
I-2 AMC				24.4
I-2.1 Buildings				<u>11.4</u>
a Office, Laboratory, etc.	Sq.m	1,050	8,300	8.72
b Store	Sq.m	100	3,000	0.30
c Workshop	Sq.m	400	2,600	1.04
d Garage	Sq.m	500	2,600	1.30
I-2.2 Facilities				<u>0.5</u>
a Shallow Tubewell	Set	1	51,000	0.05
b Water tank & pipe line	Set	1	62,000	0.06
c Generator	Nos.	1	220,000	0.22
d Miscellaneous	L.S.	1	167,000	0.17
I-2.3 Farm				<u>0.7</u>
a Farm construction	Sq.m	14,400	26	0.37
b Irrigation facilities				
i Buried pipe line	ha	2	6,100	0.01
ii Deep Tubewell	Set	1	222,000	0.22
iii Miscellaneous	L.S.	1	48,600	0.05
I-2.4 Equipment & machinery				<u>9.9</u>
a Tractor 50Hp	Nos.	5	475,000	2.38
b Power tiller 12Hp	Nos.	10	72,000	0.72
c Irrigation pump	Nos.	10	35,000	0.35
d Truck 5ton	Nos.	3	1,400,000	4.20
e Auto-bike	Nos.	5	43,000	0.22
f Machinery tool	L.S.	1	1,500,000	1.50
g Motor boat	Nos.	1	500,000	0.50
I-2.5 Road Construction				<u>2.0</u>
a Main road 700m	Sq.m	4,200	480	2.02
I-3 Inland Fish Culture Center				4.9
I-3.1 Buildings				<u>2.1</u>
a Office	Sq.m	50	8,300	0.42
b Laboratory	Sq.m	100	8,300	0.83
c Training room	Sq.m	50	8,300	0.42
d Dormitory	Sq.m	50	8,300	0.42
e Water supply system	Sq.m	1	62,000	0.06
I-3.2 Fish farm				<u>0.1</u>
a Excavation	Cu.m	900	16	0.01
b Embankment	Cu.m	900	14	0.01
c Miscellaneous	L.S.	1	27,000	0.03

Table 2.2.10 (3/3) Breakdown of Direct Construction Cost
(UCCA : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Price (TK)	Amount (Million TK)
I-3.3 Equipments				<u>2.7</u>
a Generator 40KVA	Set	1	220,000	0.22
b Deep tubewell	Place	1	220,000	0.22
c Drainage pump	Set	3	35,000	0.11
d Water delivery pipe	m	1,000	201	0.20
e Aeration system	Set	3	500,000	1.50
f Testing equipment	Set	1	500,000	0.50
I-4 Community Center cum Godown	Place	16	5,370,000	85.9
I-4.1 Community Center				<u>1.25</u>
a Building	Sq.m	200	4,500	0.90
b Facilities				<u>0.35</u>
i Training facilities	L.S.	1	200,000	0.20
ii Water supply	Set	1	62,000	0.06
iii Shallow tubewell - I	Set	1	51,000	0.05
iv Miscellaneous	L.S.	1	37,000	0.04
I-4.2 Godown & Rice Mill				<u>4.12</u>
a Building	Sq.m	540	3,000	1.62
b Rice Mill	Set	1	2,500,000	2.50
II SECOND STAGE WORKS				80.6
II-1 Community Center cum Godown	Place	15	5,370,000	80.55
III THIRD STAGE WORKS				80.6
III-1 Community Center cum Godown	Place	15	5,370,000	80.55

Table 2.2.11 Breakdown of Direct Construction Cost
(IRRIGATION : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				<u>32.4</u>
I-1 Irrigation Canal Re-excavation(125.4km)	Cu.m	173,600	16	2.70
I-2 Supplying of Floating Pump (12.5 Cusec)	Nos.	2	8,754,200	17.51
I-3 Supplying of Low Lift Pump (2.0 Cusec)	Nos.	203	35,000	7.11
I-4 Construction of Buried Pipe-line System	Place	15	338,000	5.07
II SECOND STAGE WORKS				<u>5.7</u>
II-1 Construction of Buried Pipe-line System	Place	14	338,000	4.73
II-2 Drainage Canal Re-excavation (15.2km)	Cu.m	59,000	16	0.92

Table 2.2.12 (1/3) Breakdown of Direct Construction Cost
(ROAD : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				95.0
I-1 Feeder A (Homna - Gouripur)				6.0
a Earthwork				<u>5.95</u>
i Filling	Cu.m	7,200	49	0.35
ii Pavement	Cu.m	19,300	260	5.02
iii Tree planting	Nos.	1,900	261	0.50
iv Turfing	Sq.m	19,200	5	0.09
I-2 Feeder B				89.1
I-2.1 H-3 (Homna - Manikerchar)				32.63
a Earthwork				<u>16.01</u>
i Filling	Cu.m	105,600	49	5.15
ii Pavement	Cu.m	35,900	260	9.33
iii Tree planting	Nos.	3,900	261	1.02
iv Turfing	Sq.m	109,600	5	0.51
b Bridge Construction				<u>16.62</u>
i 12m x 7.33m	Nos.	6	2,770,000	16.62
c Ferry	Nos.	1	200,000	<u>0.20</u>
I-2.2 H-4 (Sreemodi - Ragunathpur)				56.44
a Earthwork				<u>26.15</u>
i Filling	Cu.m	172,500	49	8.41
ii Pavement	Cu.m	58,600	260	15.24
iii Tree planting	Nos.	6,400	261	1.67
iv Turfing	Sq.m	178,900	5	0.83
b Bridge Construction				<u>30.29</u>
i 24m x 7.33m	Nos.	4	4,110,000	16.44
ii 12m x 7.33m	Nos.	5	2,770,000	13.85
II SECOND STAGE WORKS				146.0
II-1 Feeder B				41.8
II-1.1 H-2 (Homna - Dulapur)				41.82
a Earthwork				<u>11.91</u>
i Filling	Cu.m	78,700	49	3.84
ii Pavement	Cu.m	26,700	260	6.94
iii Tree planting	Nos.	2,900	261	0.76
iv Turfing	Sq.m	81,600	5	0.38
b Bridge Construction				<u>29.90</u>
i 84m x 7.33m	Nos.	2	10,797,000	21.59
ii 12m x 7.33m	Nos.	3	2,770,000	8.31

Table 2.2.12 (2/3) Breakdown of Direct Construction Cost
(ROAD : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
II-2 Rural Road				104.2
II-2.1 H-5 (Ghagutia - Baluakandi)				35.60
a Earthwork				<u>19.69</u>
i Filling	Cu.m	137,000	49	6.68
ii Pavement	Cu.m	41,800	260	10.87
iii Tree planting	Nos.	5,500	261	1.44
iv Turfing	Sq.m	153,200	5	0.71
b Bridge Construction				<u>15.90</u>
i 84m x 3.66m	Nos.	1	6,223,000	6.22
ii 12m x 3.66m	Nos.	5	1,936,000	9.68
II-2.2 H-7 (Operchar - Manipur)				24.33
a Earthwork				<u>10.78</u>
i Filling	Cu.m	75,000	49	3.65
ii Pavement	Cu.m	22,900	260	5.95
iii Tree planting	Nos.	3,000	261	0.78
iv Turfing	Sq.m	83,900	5	0.39
b Bridge Construction				<u>13.55</u>
i 12m x 3.66m	Nos.	7	1,936,000	13.55
II-2.3 H-8 (Oprechar - Mashishmari)				26.27
a Earthwork				<u>10.07</u>
i Filling	Cu.m	70,000	49	3.41
ii Pavement	Cu.m	21,400	260	5.56
iii Tree planting	Nos.	2,800	261	0.73
iv Turfing	Sq.m	78,300	5	0.36
b Bridge Construction				<u>16.20</u>
i 24m x 3.66m	Nos.	1	2,651,000	2.65
ii 12m x 3.66m	Nos.	7	1,936,000	13.55
II-2.4 H-10 (Dulalpur - Ramkrishnapur)				17.98
a Earthwork				<u>3.30</u>
i Filling	Cu.m	23,000	49	1.12
ii Pavement	Cu.m	7,000	260	1.82
iii Tree planting	Nos.	900	261	0.23
iv Turfing	Sq.m	25,700	5	0.12
b Bridge Construction				<u>14.68</u>
i 96m x 3.66m	Nos.	1	6,938,000	6.94
ii 12m x 3.66m	Nos.	4	1,936,000	7.74

Table 2.2.12 (3/3) Breakdown of Direct Construction Cost
(ROAD : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
III THIRD STAGE WORKS				48.3
III-1 Rural Road				48.3
III-1. H-6 (Bagmara - Sovarampur)				35.94
a Earthwork				<u>15.66</u>
i Filling	Cu.m	109,000	49	5.31
ii Pavement	Cu.m	33,200	260	8.63
iii Tree planting	Nos.	4,400	261	1.15
iv Turfing	Sq.m	121,900	5	0.57
b Bridge Construction				<u>20.28</u>
i 36m x 3.66m	Nos.	2	3,365,000	6.73
ii 12m x 3.66m	Nos.	7	1,936,000	13.55
III-1. H-9 (Chandrapur - Manikerchar)				12.40
a Earthwork				<u>6.59</u>
i Filling	Cu.m	46,000	49	2.24
ii Pavement	Cu.m	14,000	260	3.64
iii Tree planting	Nos.	1,800	261	0.47
iv Turfing	Sq.m	51,400	5	0.24
b Bridge Construction				<u>5.81</u>
i 12m x 3.66m	Nos.	3	1,936,000	5.81

Table 2.2.13 Breakdown of Direct Construction Cost
(GROWTH CENTER : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				28.5
I-1 Homna Bazar				17.83
Shed for fish, meat, rice, etc.	Sq.m	590	6,000	3.54
Slaughter Shed	Place	1	32,000	0.03
Cow shed	Sq.m	110	2,000	0.22
Internal road pavement	Sq.m	3,500	260	0.91
Drain ditch	m	1,000	1,200	1.20
Deep tubewell	Place	1	222,000	0.22
Latrine	Place	2	136,000	0.27
Cold Storage (200 m3)	Place	1	11,250,000	11.25
Electric line extension	m	500	300	0.15
Garbage pit	Place	8	2,000	0.02
Shallow tubewell-II	Place	1	17,700	0.02
I-2 Dularpur Bazar				10.69
Shed for fish, meat, rice, etc.	Sq.m	590	6,000	3.54
Slaughter Shed	Place	1	32,000	0.03
Cow shed	Sq.m	110	2,000	0.22
Internal road pavement	Sq.m	3,500	260	0.91
Drain ditch	m	1,000	1,200	1.20
Deep tubewell	Place	1	222,000	0.22
Latrine	Place	2	136,000	0.27
Bridge (24m x 7.33m)	Place	1	4,110,000	4.11
Electric line extension	m	500	300	0.15
Garbage pit	Place	8	2,000	0.02
Shallow tubewell-II	Place	1	17,700	0.02
II SECOND STAGE WORKS				4.5
II-1 MANIKERCHAR BAZAR				4.46
Shed for fish, meat, rice, etc.	Sq.m	230	6,000	1.38
Slaughter Shed	Place	1	32,000	0.03
Cow shed	Sq.m	60	2,000	0.12
Internal road pavement	Sq.m	3,500	260	0.91
Drain ditch	m	1,000	1,200	1.20
Deep tubewell	Place	1	222,000	0.22
Latrine	Place	2	136,000	0.27
Garbage pit	Place	4	2,000	0.01
Shallow tubewell-II	Place	1	17,700	0.02
Shed for cloth	Place	140	2,100	0.29

Table 2.2.14 (1/2) Breakdown of Direct Construction Cost
(HAT MARKET : HOMNA UPAZILA)

	Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I	FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				11.8
I-1	Chaudanpur Bazar				<u>3.93</u>
	Sales shed	Sq.m	340	6,000	2.04
	Internal road pavement	Sq.m	3,500	260	0.91
	Drain ditch	m	500	1,200	0.60
	Latrine	Place	2	136,000	0.27
	Garbage pit	Place	2	2,000	0.00
	Shallow tubewell-I	Place	2	51,000	0.10
I-2	Taker Bazar				<u>3.93</u>
	Sales shed	Sq.m	340	6,000	2.04
	Internal road pavement	Sq.m	3,500	260	0.91
	Drain ditch	m	500	1,200	0.60
	Latrine	Place	2	136,000	0.27
	Garbage pit	Place	2	2,000	0.00
	Shallow tubewell-I	Place	2	51,000	0.10
I-3	Taltali Bazar				<u>3.93</u>
	Sales shed	Sq.m	340	6,000	2.04
	Internal road pavement	Sq.m	3,500	260	0.91
	Drain ditch	m	500	1,200	0.60
	Latrine	Place	2	136,000	0.27
	Garbage pit	Place	2	2,000	0.00
	Shallow tubewell-I	Place	2	51,000	0.10
II	SECOND STAGE WORKS				<u>11.8</u>
II-1	Ramkrishnapur Bazar				<u>3.93</u>
	Sales shed	Sq.m	340	6,000	2.04
	Internal road pavement	Sq.m	3,500	260	0.91
	Drain ditch	m	500	1,200	0.60
	Latrine	Place	2	136,000	0.27
	Garbage pit	Place	2	2,000	0.00
	Shallow tubewell-I	Place	2	51,000	0.10

Table 2.2.14 (2/2) Breakdown of Direct Construction Cost
(HAT MARKET : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
II-2 Chatpur Bazar				<u>3.93</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,500	260	0.91
Drain ditch	m	500	1,200	0.60
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
II-3 Kashipur Bazar				<u>3.93</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,500	260	0.91
Drain ditch	m	500	1,200	0.60
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10
III THIRD STAGE WORKS				3.9
III-1 Miras Bazar				<u>3.93</u>
Sales shed	Sq.m	340	6,000	2.04
Internal road pavement	Sq.m	3,500	260	0.91
Drain ditch	m	500	1,200	0.60
Latrine	Place	2	136,000	0.27
Garbage pit	Place	2	2,000	0.00
Shallow tubewell-I	Place	2	51,000	0.10

Table 2.2.15 Breakdown of Direct Construction Cost
(IMPROVEMENT OF FISH POND : HOMNA UPAZILA)

	Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I	FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				12.9
I-1	Improvement of fish pond	Place	170	75,635.40	12.86
	a Re-excavation	Cu.m	3,400	15.54	52,836
	b Embankment	Cu.m	1,580	14.43	22,799
	Unit Cost (TK/Place)				75,635
II	SECOND STAGE WORKS				37.8
II-1	Improvement of fish pond	Place	500	75,635.40	37.82
III	THIRD STAGE WORKS				62.8
III-1	Improvement of fish pond	Place	830	75,635.40	62.78

Table 2.2.16 Breakdown of Direct Construction Cost
(OTHERS : HOMNA UPAZILA)

Item	Unit	Q'ty	Unit Rate (TK)	Amount (Million TK)
I FIRST STAGE WORKS (PRIORITY PROJECT WORKS)				37.3
I-1 High School Improvement	Place	6	5,000,000	<u>30.0</u>
I-2 Drinking Water Supply	Place	100	51,000	<u>5.1</u>
I-3 UHC (Upazila health complex)				<u>2.2</u>
a Ambulance car	Nos.	1	1,400,000	1.40
b Jeep type car	Nos.	1	800,000	0.80
II SECOND STAGE WORKS				35.1
I-1 High School Improvement	Place	6	5,000,000	<u>30.0</u>
I-2 Drinking Water Supply	Place	100	51,000	<u>5.1</u>

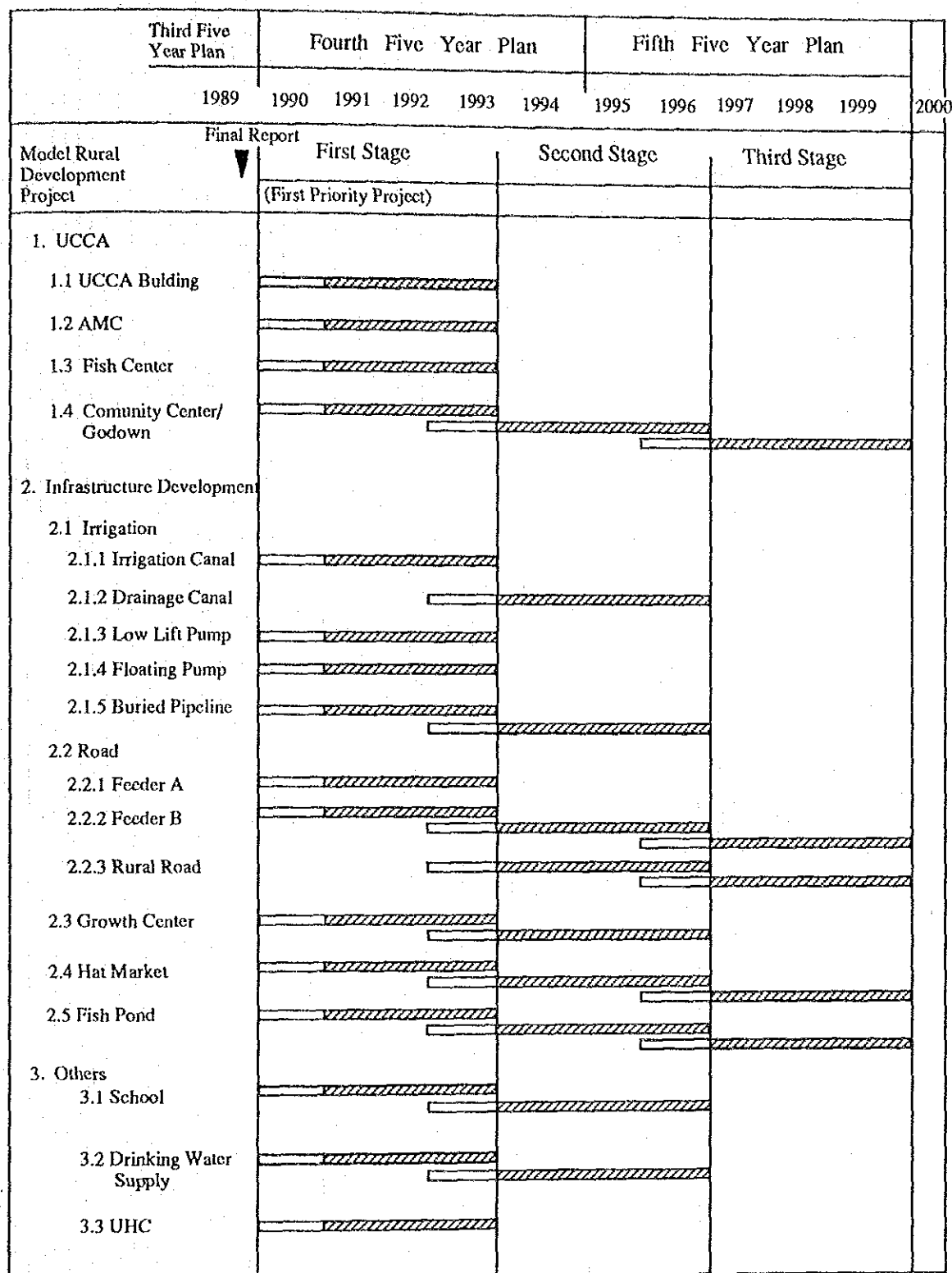
Table 2.2.17 Construction Cost of Priority Projects

	Work Items	Daudkandi	Homna	Total	
I.	DIRECT CONSTRUCTION				
1.	UCCA Building	216.4	133.7	350.1	
1.1	UCCA	18.4	18.4	36.8	
1.2	AMC	24.4	24.4	48.8	
1.3	Inland Fish Culture	7.1	5.0	12.1	
1.4	Community Center cum Godown	166.5	85.9	252.4	
2.	Infrastructure Development	344.9	180.8	525.7	
2.1	Irrigation	70.3	32.4	102.7	
2.2	Road	159.4	95.2	254.6	
2.3	Growth Center	31.9	28.5	60.4	
2.4	Hat Market	35.2	11.8	47.0	
2.5	Pond Improvement	48.1	12.9	61.0	
3.	Others	59.3	37.3	96.6	
3.1	High School	45.0	30.0	75.0	
3.2	Drinking Water Supply	12.1	5.1	17.2	
3.3	UHC	2.2	2.2	4.4	
3.4					
	Sut-total	620.6	351.8	972.4	
II.	LAND ACQUISITION	5% of I	31.0	17.6	48.6
III.	ADMINISTRATION	5% of I	31.0	17.6	48.6
IV.	PHYSICAL CONTINGENCY	15% of I	93.0	52.8	145.8
V.	ENGINEERING SERVICES	15% of I	93.0	52.8	145.8
	Sub-total	868.6	492.6	1,361.2	
VI.	PRICE CONTINGENCY	171.9	97.5	269.4	
	Total	1,040.5	590.1	1,630.6	

Table 2.2.18 Operation Cost for Priority Projects

		Personnel Cost		Operation Cost		Total	
		Daudkandi	Homna	Daudkandi	Homna	Daudkandi	Homna
1.	UCCA	5.2	2.8	-	-	5.2	2.8
2.	Godowns	2.2	1.1	132.4	68.3	134.6	69.4
3.	Rice Mills	2	1.2	10.4	5.4	12.4	6.6
4.	Inland Fishery	0.1	0.1	3.8	3.8	3.9	3.9
5.	AMC	0.8	0.8	1.6	1.6	2.4	2.4
Total		10.3	6	148.2	79.1	158.5	85.1

FIGURES



Design Construction



Figure 1.1.1 Provisional Project Implementation Schedule

THE PEOPLE'S REPUBLIC OF BANGLADESH

MODEL RURAL DEVELOPMENT PROJECT PLAN

FOR

HOMNA AND DAUDKANDI UPAZILA

JAPAN INTERNATIONAL COOPERATION AGENCY

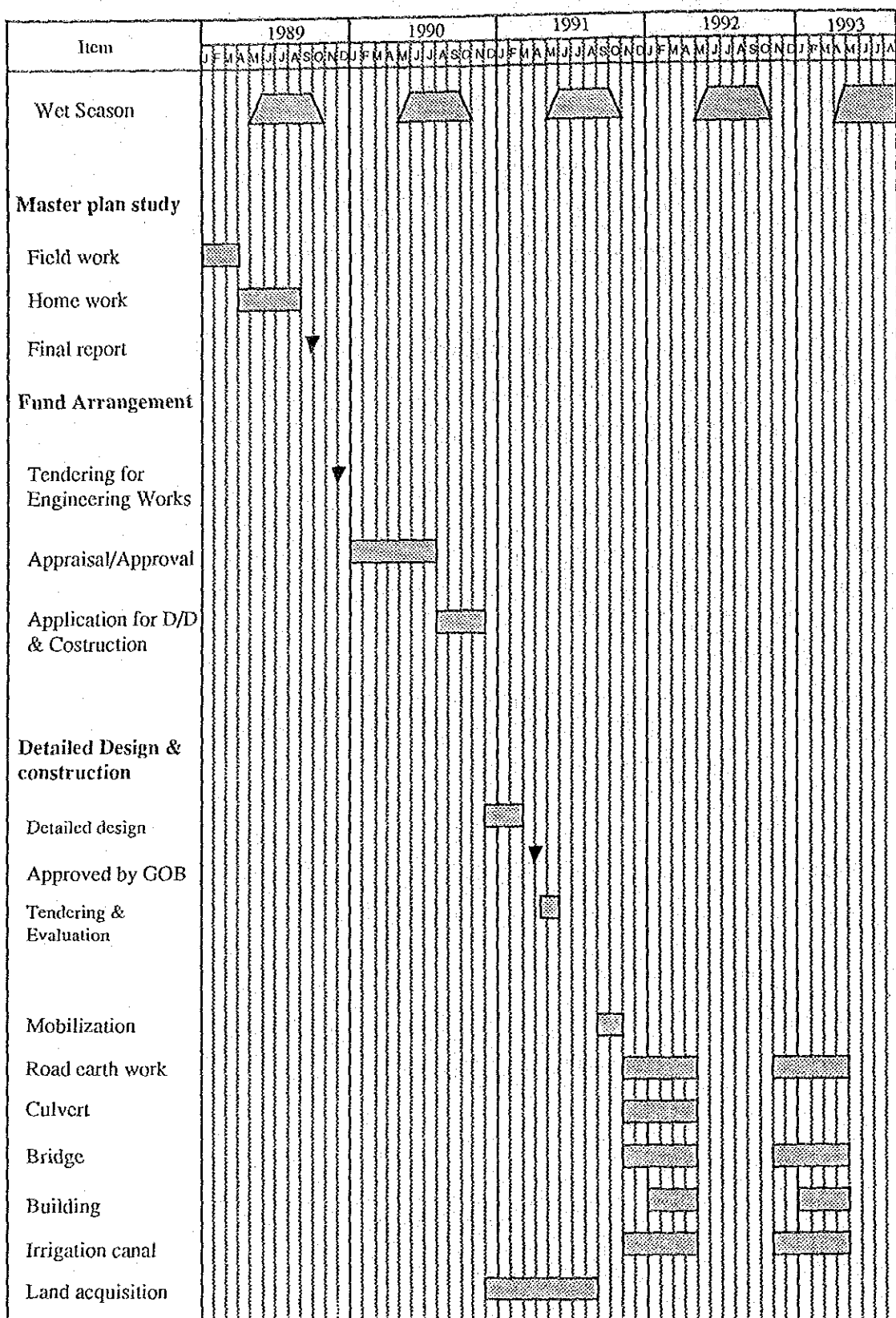
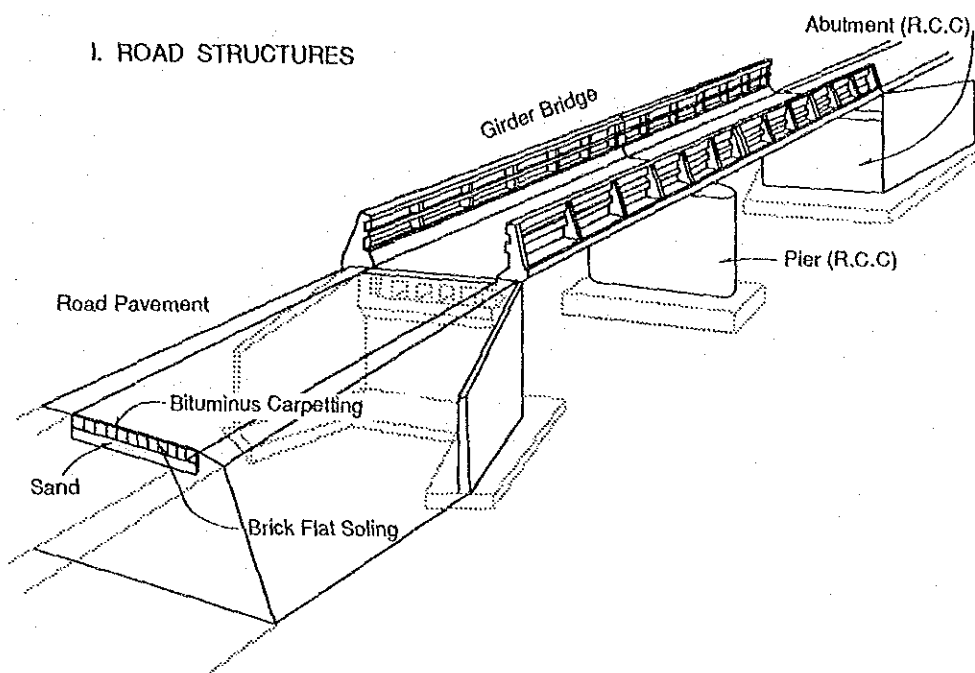


Figure 1.2.1 Provisional Construction Schedule for Priority Projects

THE PEOPLE'S REPUBLIC OF BANGLADESH
MODEL RURAL DEVELOPMENT PROJECT PLAN
FOR
HOMNA AND DAUDKANDI UPAZILA
JAPAN INTERNATIONAL COOPERATION AGENCY

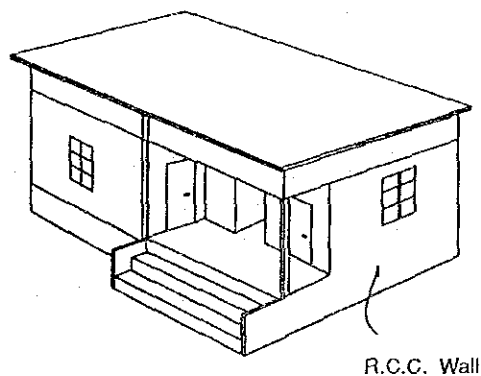
I. ROAD STRUCTURES



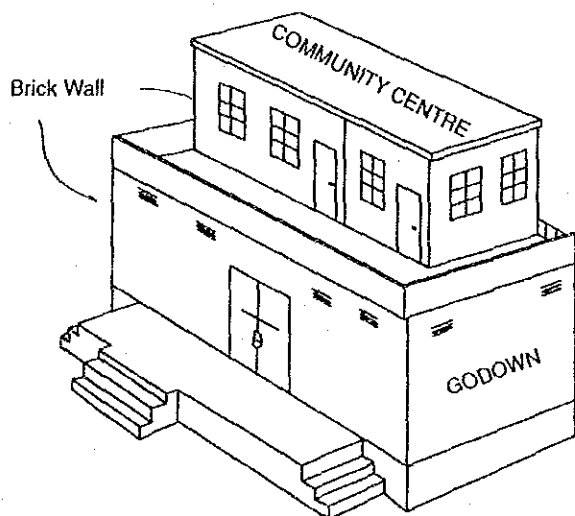
II. BUILDINGS

OFFICE BUILDING

Purpose:
Office, Laboratory, Training Room, etc.
Building Site:
AMC, Inland Fish Culture Center and UCCA



GODOWN CUM COMMUNITY CENTRE

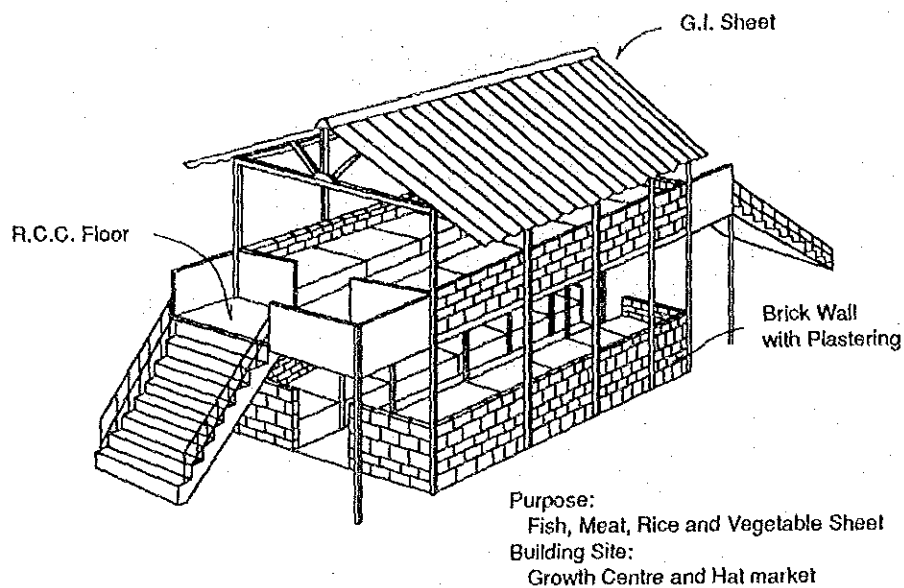


Purpose:
Godown and Community Centre

Figure 2.1.1 (1/2) Image Sketch of Structures,
Buildings and Facilities

THE PEOPLE'S REPUBLIC OF BANGLADESH
MODEL RURAL DEVELOPMENT PROJECT PLAN
FOR
HOMNA AND DAUDKANDI UPAZILA
JAPAN INTERNATIONAL COOPERATION AGENCY

MARKET SHED



DRINKING WATER SUPPLY

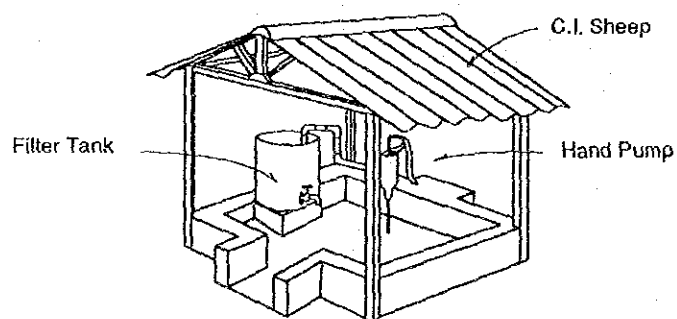


Figure 2.1.1 (2/2) Image Sketch of Structures, Buildings and Facilities

THE PEOPLE'S REPUBLIC OF BANGLADESH
MODEL RURAL DEVELOPMENT PROJECT PLAN
FOR
HOMNA AND DAUDKANDI UPAZILA
JAPAN INTERNATIONAL COOPERATION AGENCY

ANNEX D
PROJECT MANAGEMENT

ANNEX D

PROJECT MANAGEMENT

CONTENTS

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3. Facilities Installation	D-5
4. UCCA Activities and Organization	D-7
5. Management Framework	D-13

TABLES

Table 1.1	Godown Annual Operation Capacity (1999)
Table 1.2	Cash Flow of Rice mills cum Godowns
Table 1.3	AMC Cost and Benefit Evaluation (Daudkandi and Homna)

1. General

Main aspects in the project management are basically noted in the Main Report which important directives can be summarized in the following points.

- a. Construction works will be managed by LGEB as main responsible excepts UCCA Centers to be done by BRDB's construction division.
- b. Functional works will be managed by BRDB as main responsible.
- c. Upazila Parishad will be in full cooperation with LGEB and BRDB for a smooth implementation of the two above works.
- d. Local inhabitants of the technical group, specially low-income landless people will be intensively mobilized to understand and participate in all project works for their beneficiary.
- e. Foreign experts, in case of foreign financial source(s), will be placed in the echelon of supervisory for monitoring,controlling and adjusting all aspects in the project implementation.
- f. The MRDPP should be managed to make benefits firstly from UCCA related facilities with project business purposes and for financing UCCA activities, mainly programs for landless people.

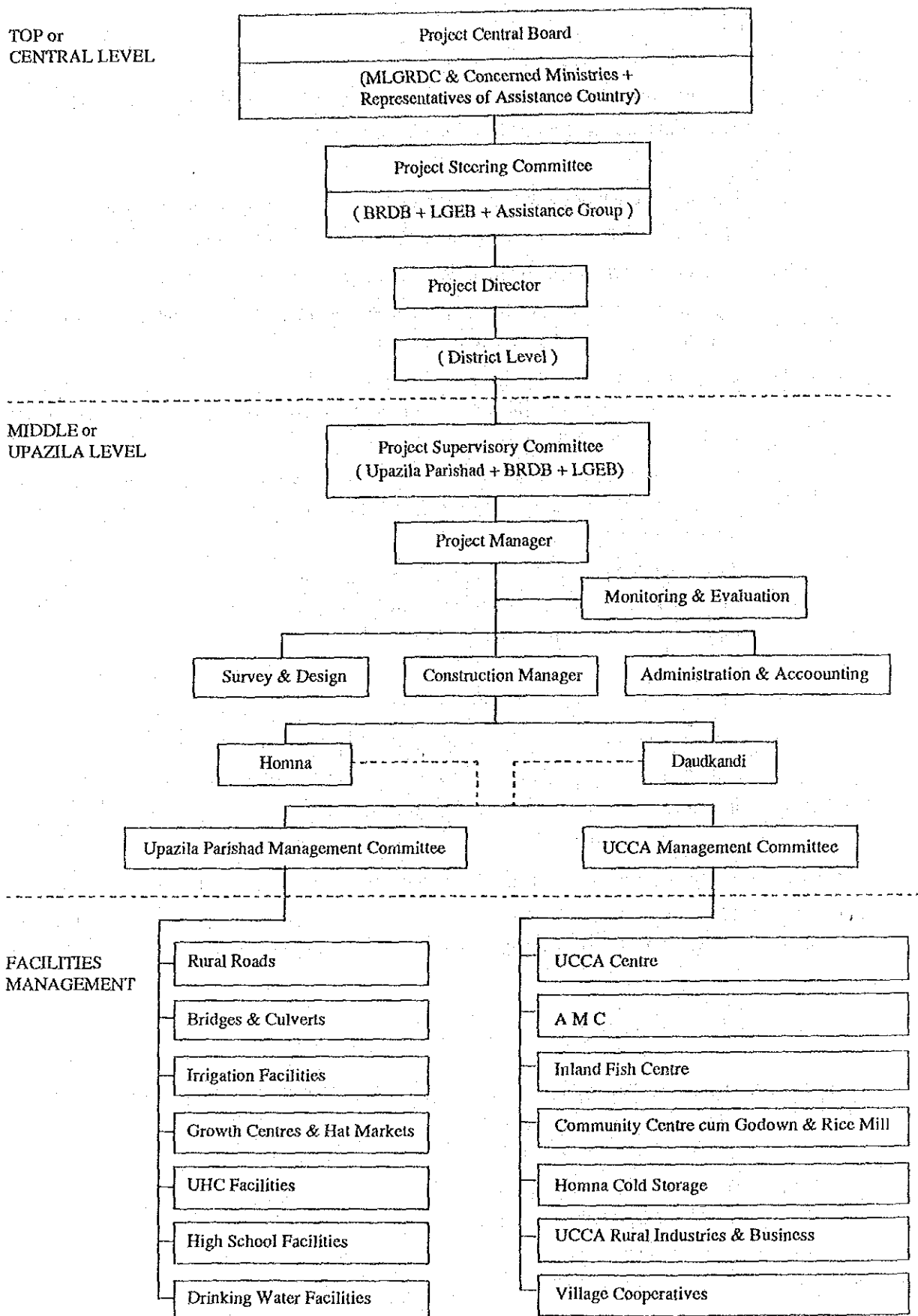
In order to realize these above directives, basic understandings between both governments, Bangladesh and the assistance offering country, should be obtained on the concrete basis of making this project into a successful model for solving the rural low-income problem, a crucial issue in basic national economic development of this country.

This means, during the process of project implementation, if any governmental administrative practices regulations obstructing the smooth realization of some project portion(s) the Government of Bangladesh will offer the project with preferential treatments.

2. Management Methodology

In its structural aspect, the management system for this project will have 3 following levels with specific management organizations.

- a. Top or central level management
- b. Middle or Upazila level management
- c. Facilities Management



(1) Top or central-level management

At this level, the project management will be carried out by a Project Supervisory Board with a Project Steering Committee.

The Project Central Board will be composed of 2 sides, Bangladesh and the assistance offering country, under the chairmanship of Ministry of LGRD and Cooperatives. In the Bangladesh side, participants would be Ministry of LGRD & Cooperatives, BRDB, LGEB and concerned Ministries such as Planning Commission, Ministry of Law and Justice, Ministry of Agriculture, Ministry of Fisheries and Livestock, Ministry of Social Welfare and Women Affairs, etc.

The Project Steering Committee is a permanently administrative staff at top level for this project, mainly consisting of assigned officials from BRDB and LGEB. Its main functions are to assist the Project Central Board in deciding project-directives.

The Project Steering Committee will have 3 following functions.

- a. Ordering the project implementation
- b. Controlling and adjusting the implementation procedure and direction
- c. Solving problems occurred during the project implementation which could not be solved at Upazila or middle level

The Project Central Board will have regular meetings i.e. at bi-monthly period and special meetings in case of urgent emergency for hearing reports from the Project Steering Committee controlled by a Project Director.

The Project Central Board and the Project Steering Committee will perform their functions until the project completion.

The top level management is shown by its organizational chart.

(2) Upazila or middle level management

At Upazila or middle level, the project management will be carried out by a management organization responsible for construction works and functional works in 1999.

This organization will be established at Upazila level with a Project Supervisory Committee controlled by a Project Manager.

This organization as shown by its organizational chart will be maintained until the project completion.

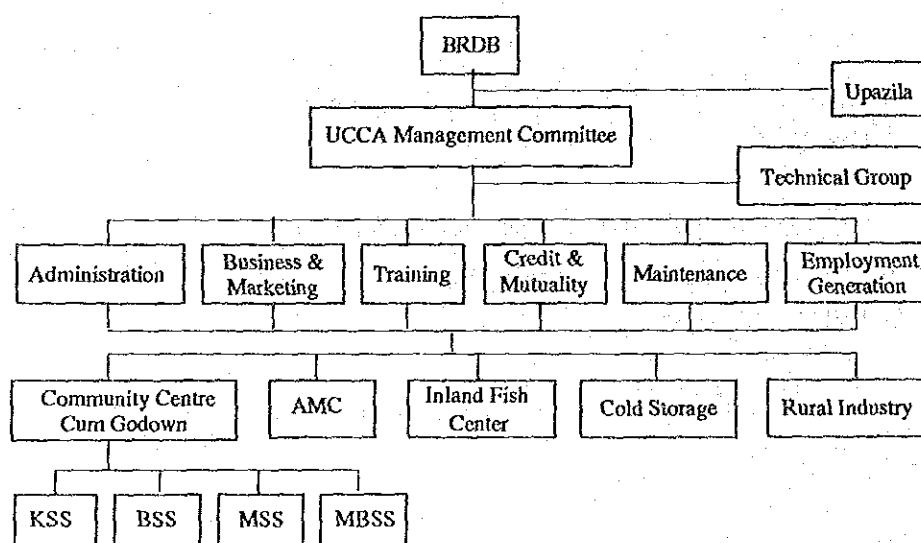
(3) Facilities management

There are 2 categories of facilities which will be managed by different organizations.

Facilities such as irrigation structures, Growth Centres, Hat Markets, health & sanitation facilities, education facilities and other infrastructures (rural roads, bridges, etc.) will be managed by Upazila Parishad chaired by Upazila Chairman as up to now.

But facilities such as UCCA Centers, AMC, Community Centers and the newly constructed Homna Cold Storage will be managed by sub-organizations of UCCA.

First, the management of UCCA Centre would be organized as follows:



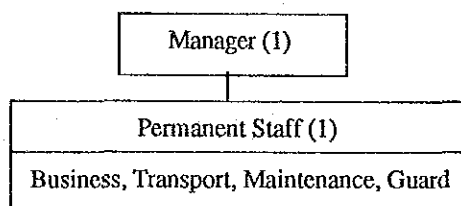
From UCCA works, the control of management to each related facility such as AMC, Community Center cum Godown, Inland Fish Centre, Homna Cold Storage will be maintained in order to perform a strict mutual support system.

The management of UCCA Center (Administration, Business & Marketing, Training, Credit, Maintenance, Employment Generation and Rural Industry) will be made by its corresponding staff as shown below.

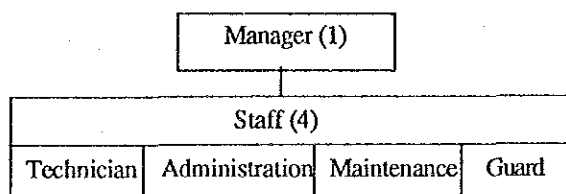
The management of AMC will be made by 5-10 persons as permanent staff and a number of labours:

Manager	(1)
Administration	(1 - 2)
Farm Staff	(1 - 3)
Machinery Staff	(2 - 4)
Labour (unspecified)	

The Management of Community Centre cum Godown will be done by a Manager and 1 permanent staff as follows:



The Management of Hornna Cold Storage will be done by a Manager and 4 persons as follows:



3. Facilities Installation

(1) UCCA Center

In each Upazila, a new UCCA Center will be constructed. It consists of following items:

- a. Office space (UCCA office, Bank and offices for rent)
- b. Hall for Conference and Cultural services, and Shops
- c. Training rooms
- d. Dormitory

- e. Canteen
- f. Nursery & First-Aid Clinic, Tele-Post-Office
- g. Marketing Space (Coop Market and Shops for Rent)
- h. Storage, etc.

(2) AMC

In each Upazila, an AMC will be constructed. It consists of following items:

- a. Office, Show Room, Store
- b. Training Room, Laboratory
- c. Workshop, Garage
- d. Machinery (5 tractors, 10 power tillers, 34 irrigation pumps, 341 LLP (Daudkandi: 138, Homna: 203), 3 trucks and 5 bikes)

(3) Inland Fish Centre

In each Upazila, an Inland Fish Centre will be constructed. It consists of following items:

- a. Fish Seed Multiplication Farm (Hatchery)
- b. Office, Training Room and Laboratory

(4) Community Centre cum Godown and Rice Mill

In each Upazila, a Community Centre cum Godown as Rice Mill will be constructed. The Community Centre consists of following items:

- a. UCCA Office cum Store and Rice Mill
- b. Conference Room with Audio-Video Equipments
- c. First Aid Clinic, Tele-Post-Office

(5) Cold Storage

In Homna Upazila, a cold storage will be new constructed as follows:

- a. Control room with platform
- b. Machinery room
- c. Storage room

4. UCCA Activities and Organization

(1) UCCA activities

In this project, UCCA is proposed to be the main institution for functioning MRDPP. In MRDPP, UCCA will handle various activities for the purpose of improvement in services to its members. UCCA should strengthen its financial resources for performing the framework of proposed activities by its own budget.

It is strongly proposed that UCCA undertakes income and profit oriented businesses, of which the most promising one is the sale and purchase business of paddy, wheat, fertilizer, necessities of life, etc. For this purpose, MRDPP will construct 143 units of community centre-godown-rice mill complex.

UCCA activities are proposed as follows:

i) Sale business

Sale of agricultural inputs (fertilizer, insecticides, seeds, etc.) to members with a nominal profit-commission of 2-3% of purchase-price.

ii) Purchase business

Basically UCCA will purchase agricultural products from members with on-season prices during harvest seasons and will sell them, especially in off-seasons, with higher prices after milling.

Main products will be foodgrains such as rice, wheat, etc. With this establishment, 2 channels of foodgrain distribution, governmental and private will be available. It is recommended that the channel of UCCA with complex of godown and rice mill will be officially approved.

By the purchase and sale business, processing of white rice and wheat, UCCA can make a significant profit for covering its rural development activities.

Apart from the purchase business, UCCA will undertake the market information service to farmers.

With completion of bridges over the Meghna River and improvement of road network in the Study Area, the distribution of foodgrains and vegetables to Dhaka for its inhabitants consumption will be considered with high prospects.

Information on Dhaka marketing and production and distribution techniques of vegetables will be supplied by UCCA to members for this business to be smoothly carried out.

Besides, a cold storage will be established in Homna under the UCCA management, for the development of potato production and fishery.

iii) Joint use of equipment

This is performed by agricultural supporting facilities and equipment, AMC is established for this purpose. This is under the control of UCCA. Its business plan is shown in Section 5, Management Frame Work.

iv) Extension services

A main objective in rural development is for higher production which require the introduction of modern techniques for production.

With the improvement in financial condition, UCCA will form a competent staff for performing services to members through community centers at village level.

This will be used as a channel for supplying techniques, inputs, etc. and marketing management.

v) Credit supply

Up to now, 2 kinds of rural credits, short-term and term credits, have been supplied. Short-term credits are aimed at agricultural inputs such as fertilizer purchase; and term credits are for irrigation pump(s).

These credit supplies should be carried out in large scale. Low interests are also subjected to be taken into account. Saving accounts of members should be promoted as a measure for promoting operation capital.

vi) Employment generation

The operation and maintenance of UCCA related facilities will be mainly shared by landless people, except some specific jobs. With the establishment of various sections for programs such as Business Marketing, Extension, Credit, Cooperative Members' Mutuality, Training, etc. an employment program will be generated.

Besides, UCCA related business such as rice mills, oil mills, construction materials, etc. will generate also the employment program. UCCA Center will have 1 office working for people looking for jobs.

vii) Training

This is a main and important subject. Training should be carried out for members including women. Education and vocational training for their self-reliance, therefore, should be performed accordingly. These training activities will be done in the UCCA Center and community centers in villages.

viii) Regional development

The Upazila regional development programs, especially FFW, RWP, etc. will be applied for the participation of cooperative members.

ix) Others

Cultural and recreational programs are also subjects to be performed for the beneficiary of members in villages. In the future, with the abundant budget realized, UCCA will work for realizing wide-range programs.

(2) UCCA organization

In order to realize the above UCCA activities, strengthening of UCCA organization should be done at first.

UCCA would need sections to undertake Administration, Business, Training, Credit & Mutuality, Maintenance and Employment Generation.

A technical group would be needed consisting of technical experts. At village level, UCCA activities will be carried out at community centers cum godowns.

A staff of 2 persons is subjected to the management of each community center cum godown. Besides, UCCA related facilities such as AMCs, and Homna Cold Storage have its own staff for their facility management. The total UCCA staff would be as follows:

	Daudkandi	Homna	Total
Business Marketing	15	8	23
Training (including Inland Fish Center)	10	5	15
Credit	10	5	15
Maintenance	5	3	8
Employment Generation	10	5	15
Rural Industry	10	10	20
Administration	10	5	15
Community Center cum Godown	194	92	286
Rice Mills			
AMC	10	5	15
Cold Storage	-	5	5
Total	277	146	423

For these staffs, the personnel cost will be paid by profits from UCCA business plans after an initial period of 3 years to be borne by project-cost.

This personnel cost is estimated at 16,920,000 Tk. per annum (423 persons x 40,000 Tk./year).

(3) UCCA training programs

In this project of Model Rural Development, therefore, UCCA is proposed to be the Central Institution for Institutional Development e.g. planning, training, implementing, evaluating and adjusting all rural development programs at the Upazila level for 2 following ultimate purposes:

- Periodically income generation for local inhabitants, especially the landless through various technical assistance and production programs.
- Concrete works for improving living conditions of local inhabitants through various educational, training and implementation programs.

This UCCA institutional system, therefore, could perform these programs directly to members at union level for up-grading production-distribution techniques as well as living conditions in order to put all aspects in the rural life. At union level, one staff of UCCA will be located at the Community Center, as the UCCA terminal unit, for promoting UCCA activities at grass root level.

Training programs, therefore, are considered as a very important activity conducted by UCCA.

A. Main Training Programs

In order to expand UCCA Activities in production techniques as well as rural development programs 3 main training programs are subjected to be considered accordingly.

i) Programs for UCCA Youth Cadres

Young students of Secondary School e.g. 14 to 18 years old shall be selected from villages and sent to UCCA for basic training of agricultural technique programs for a specific period e.g. 1 to 3 months to be UCCA Young Cadres.

After completion, these UCCA Youth Cadres shall return to their villages for providing their technical knowledge to local inhabitants in production and upgrading living conditions.

These UCCA Youth Cadres, therefore, shall be trained with a curriculum of related general and basic subjects.

ii) Specific Vocational Training Programs

These training programs are subjected to vocational training of some specific techniques such as aquaculture, modern poultry/cattle raising, farm machinery application, rural/cottage industry and business, etc.

These subject are basically considered necessary for largely expanding to root grass level in the purpose of increasing production and income for local inhabitants.

Participants will be selected people subjected to self-reliant programs, graduated UCCA Youth Cadres and relevantly concerned/professional people in Upazila for fruitful implementation in final extension programs at union and village levels.

These programs are carried out at UCCA Center with cooperation of concerned experts.

iii) Training Programs at Union/Village Level

These programs shall be performed mainly by UCCA Youth Cadres in coordination with UCCA's Union Branches with materials and cost supplied by UCCA's budget.

UCCA Youth Cadres shall promote these programs to local inhabitants through UCCA members at union/village level with efforts to introduce their new knowledge or rural development.

There are two kinds of Training Programs at Union/village level to be carried out by UCCA Youth Cadres:

- Basic Agricultural Works and Rural Life
- Specific Vocational Programs

The latter is carried out in cooperation of technical experts in each specific field

B. Other Training Activities

Some special kinds of training concerning the new life system such as women's studies, sports, cultural activities, family planning, nursing, first-aid, nutritional diet are also subjected to UCCA's annual periodic training programs designated for concerned people in Upazila, unions and villages for upgrading rural living conditions at grass root level.

All these above programs are recommended to be mainly supported by UCCA's budget.

5. Management Framework

From the management system mentioned above, important points would be summarized as follows:

- a. Introduction of a new system to UCCA cooperative for the rural development task
- b. Making profits from UCCA related facilities as revolving funds for covering finances of UCCA welfare activities, particularly programs for landless people.
- c. The management of profitable UCCA related facilities i.e. AMC, Inland Fish Centre, Godown cum Rice Mill and Homna Cold Storage, therefore, should be performed properly for this purpose.
- d. Based on expected profits from the operation of these UCCA facilities, UCCA activities, especially welfare programs for landless people, will be formulated accordingly.
- e. The UCCA Centre basically, should make specific profits from its business/marketing programs and rentals of spaces in UCCA Centre for covering some portions of the UCCA budget.

References on Cost and Benefit Evaluation of profitable UCCA related facilities are as follows:

A. Godowns and Rice Mills

At village level, UCCA activities will be performed at the Community Center. In order to support these activities, Community Centers will have an operational finance to be made by profits from godowns and rice mills constructed as a combined structure with each Community Center.

Items subjected to godown storage are rice, wheat, production materials such as fertilizers, etc., in which 70% of storage capacity is for rice. Besides, in order to improve product cost, rice mills will be installed.

UCCA will purchase surplus paddy from producers and store it in godowns for making perboiled rice for selling to market.

Approved paddy price is 5,800 Tk./ton (or 7,571 Tk./ton for making into white rice). While price of white rice in market is 12,000 Tk./ton. For godown storage, the commission is 3% of purchase price.

(1) Godowns management

1) Installation planning

The operational area for 1 unit is 4 km². This is based on rationalization of transportation cost and logistical planning.

97 units in Daudkandi (22 unions) and 46 units in Homna (10 unions) will be installed (total in 143 units). Installation schedule is as follows:

Project Year	Units	Project Year	Units
1	0	6	16
2	15	7	16
3	16	8	16
4	16	9	16
5	16	10	16
Total			143

2) Capacity

The annual storage planning is shown in Table 1.1 which is based on the following local production.

1st Harvest (March - April) : Boro, Wheat
 2nd Harvest (October - November) : Aman

Aus is a minor harvest which is not subject to storage. First harvest would be 113,800 tons, in which 50% (56,900 tons) will be subjected to storage. Fertilizer storage will be down in October - November.

(Unit: 1,000 ton)			
	Foodgrain	Fertilizer	Total
1st Harvest	56.9	0	56.9
2nd Harvest	34.9	16.4	51.3
Total	91.8	16.4	108.2

From the above, an average capacity of 57,000 tons for twice per year is required which each unit of godown should be a 400 m³ capacity.

$$57,000 \text{ ton} / 143 \text{ units} = 400 \text{ m}^3/\text{unit}$$

3) Cost

Construction Cost : 143 units x 1.62 million Tk. = 231.7 million Tk.

Operation Costs :

a. Expense for operation

561 million Tk. (purchase cost for 108,200 tons)

b. Expenses for storage

530 Tk./ton

(10% of operation expenses including transportation, packaging, personnel fee and godown maintenance fee)

(2) Rice mills management

1) Construction planning

At present, 147 units of rice mills are existing in the Study Area, which total processing capacity is approx. 55,000 tons. This capacity is equivalent to the present production of rice in the Study Area.

But with the increase in rice production, 143 units of rice mills will be subjected to new installation in combination with godowns.

Each processing capacity which is made by 90% of the capacity of stored paddy, will be as follows:

$$77,200 \text{ ton} \times 0.9 + 143 = 500 \text{ ton/year/unit}$$

Assuming 250 operation days per year the daily processing capacity is 2 ton/day of paddy or 1.4 ton/day of white rice.

2) Cost

Investment : 143 units x 2.5 million Tk. = 357.5 million Tk.
 Operation Cost : 1,200 Tk./ton of white rice

(3) Business planning for godown and rice mills

The cashflow table of Godowns cum Rice Mills is shown in the following table. Its FIRR is 23.4%. From this calculation, the business operation of godowns cum rice mills is feasible.

The investment cost is as follows:

Initial Cost : 589.2 million Tk. (231.7 million Tk. for Godowns and 357.5 million Tk. for rice mills)
 Purchase of rice, fertilizers : 564.1 million Tk.

With the installation of godowns and rice mills, the employment generation program is observed accordingly.

Concerning the operation cost, approx. 70% in case of godowns and approx. 50% in case of rice mills are for personnel fee. The employment generation is as follows:

Godowns	:	56,410,000 x 0.70/30	=	1,316,000 man.days
Rice Mills	:	60,100,000 x 0.50/30	=	1,001,000 man.days
Total				2,317,000 man.days

Main employments in godowns and rice mills are labours in transportation, packaging, miscellaneous works, etc.

Especially labours in rice mills will be constant, even in flood seasons, offering a proper measure for employing landless people in the Study Area.

Notes:

1) O & M cost

a. Godown (Tk./ton of paddy)

1. Transportation	200 Tk./ton	Ricksha, Boat, 45 Tk./225 kg/10 km
2. Sack	167 Tk./ton	Jute, 20 Tk./60 kg/2 times
3. Labour	94 Tk./ton	
4. Maintenance	41 Tk./ton	
5. Miscellaneous	28 Tk./ton	
Total	530 Tk./ton	

where; 3. Labour cost

$$30 \text{ Tk.} \times 10 \text{ persons} \times 250 \text{ days} = 75,000 \text{ Tk./year}$$

$$75,000/400 \times 2 = 41 \text{ Tk./ton}$$

4. Maintenance cost

$$(1.62 \text{ M.Tk./50}) \times 1,005/400 \times 2 = 41 \text{ Tk./ton}$$

Life time is 50 years and 0.3%/year of repair cost.

From the above, O & M cost was estimated as 10% of procurement cost.

b. Rice Mill (Tk./ton of perboiled rice)

1. Transportation	100 Tk./ton	Ricksha, to market, 45 Tk./225 kg/5 km
2. Sack	167 Tk./ton	
3. Labour	214 Tk./ton	
4. Power & Fuel	334 Tk./ton	
5. Maintenance	326 Tk./ton	
6. Miscellaneous	59 Tk./ton	
Total	1,250 Tk./ton	

where; 3. Labour cost

$$30 \text{ Tk.} \times 100 \text{ persons} \times 250 \text{ days} = 75,000 \text{ Tk./year}$$

$$75,000 \text{ Tk./350 ton} = 214 \text{ Tk./ton}$$

4. Power & fuel cost

$$4\% \text{ of procurement cost}$$

$$8,351 \times 0.04 = 334 \text{ Tk./ton}$$

5. Maintenance cost

$$\text{Buil. } (2.5 \text{ M.Tk.} \times 0.7/50) \times (1,005/350) = 101 \text{ Tk./ton}$$

$$\text{Equi. } (2.5 \text{ M.Tk.} \times 0.3/10) \times (1.05/350) = 326 \text{ Tk./ton}$$

$$\text{Life time : building} = 50 \text{ years}$$

$$\text{equipment} = 10 \text{ years}$$

$$\text{Repair cost : building} = 0.5\%/\text{year}$$

$$\text{equipment} = 5.0\%/\text{year}$$

Total construction cost
building (70%) + equipment (30%)

(2) Inland Fish Centre

1) O & M cost

a. Godown (Tk./ton of paddy)

1. Labour	4,032 Tk./ton
2. Procurement of eggs	49,065 Tk./ton
3. Food & Chemicals	49,065 Tk./ton
4. Maintenance	21,101 Tk./ton
5. Miscellaneous	2,737 Tk./ton
<u>Total</u>	<u>126,000 Tk./ton</u>

where; 1. Labour cost

	<u>Person</u>	<u>Tk./year</u>
Specialist	1	50,000
Guard	2	30,000
Labour	6	45,000 (30 Tk. x 6 x 250 days)

2. Procurement cost of eggs

9% of selling price

3. Food and chemicals cost

9% of selling price

4. Maintenance cost

Buil. $(12.1 \text{ M.Tk.} \times 0.60/50) \times (1.05/31) = 4,707 \text{ Tk./ton}$

Equi. $(12.1 \text{ M.Tk.} \times 0.40/10) \times (1.05/31) = 16,394 \text{ Tk./ton}$

Life time : building = 50 years
 equipment = 10 years

Repair cost : building = 0.5%/year
 equipment = 5.0%/year

Total construction cost
building (60%) + equipment (40%)

B. Inland Fish Center

In order to implement the fisheries development plan, especially aqua-culture by pond fishery of carps and shrimps, an Inland Fish Center is subjected to be established in each upazila for producing fries and related services.

The construction and installation would be completed in 1991 for starting operation in 1992.

(1) Business plan

1) Capital investment

	(Unit: million Tk.)		
	Daudkandi	Homna	Total
Construction & Installation Cost	7.1	5.0	12.1

Note: The construction and installation cost of Inland Fish Centre in Homna is 70% of the centre in Daudkandi.

2) Operation cost

The operational business plan is as follows:

	Fish Production ('000 ton)	Seed Fish Production (ton)	Market Price (Tk./kg)	Sale (million Tk.)
Carps	10.3	20.6	250	5.2
Shrimps	5.2	10.4	1,125	11.7
Total	15.5	31.0	-	16.9

Note: 2 kg of seed fish for 1 ton of fish. Mortality rate: 5%

From the above calculation, the annual sale from the Center to fish culturists is 16.9 million Tk. (market price).

The financial plan of the Centre is as follows:

	Year	Production (ton)	Production Cost (million Tk.)	Annual Sale (million Tk.)
1	1990	0	0	0
2	1991	0	0	0
3	1993	3.4	0.4	1.9
5	1994	6.9	0.9	3.8
6	1995	13.8	1.7	7.5
7	1996	17.2	2.2	9.4
8	1997	20.7	2.6	11.3
9	1998	24.1	3.0	13.1
10	1999	27.6	3.5	15.0
11	2000	31.0	3.9	16.9
12	2001	31.0	3.9	16.9

3) FIRR

From the above, FIRR is 39.9%, showing a high value for project feasibility.

(2) Employment generation

With the operation of the Centre, the employment generation would be as follows:

Centre Staff	6 x 250 days	=	1,500 man.day/year
Other labours	31,000 x 298/30 x 0.5	=	154,000 man.day/year

Expenses of other labours are calculated on the bases of 50 percents of daily labours.

C. AMC management

In order to implement mechanization and irrigation system for modernizing agricultural techniques, an AMC is subjected to be installed in each upazila.

The management of AMC is to control the leaning business of LLP and other agricultural equipments (tractors, power tillers, etc.)

The construction and installation of AMC would be completed in 1991 for starting operation in 1992.

The business plan is proposed as follows:

(1) Business plan

1) Capital investment

The capital invested for construction an installation of 2 AMCs is as follows:

(Unit: million Tk.)			
	Daudkandi	Homna	Total
Construction	14.0	14.0	28.0
Equipment Installation	20.4	10.4	20.8
Total	24.4	24.4	48.8

Project life is 50 years for construction items and 20 years for equipments.
Annual maintenance fee is 0.5% for construction items and 2% for equipments.

2) O.M cost

i) Personnel cost

In order to perform administration accounting, business farming and machinery jobs, the following staff and fee are required.

	Person	Tk./year/person	Tk./year
Manager	1	40,000	40,000
Accounting	2	40,000	80,000
Administration	2	40,000	80,000
Farm staff	3	40,000	120,000
Farm labour	10	7,500	75,000
Machinery staff	6	40,000	240,000
Machinery labour	20	7,000	150,000
Total			785,000

ii) Maintenance cost

For Construction Items :

$$14,000,000/50 \times (1 + 0.005) = 280,560 \text{ Tk./year}$$

For Equipments :

$$10,400,000/20 \times (1 + 0.02) = 530,440 \text{ Tk./year}$$

Total	811,000 Tk./year
-------	------------------

iii) Others

For electric power, fuel, miscellaneous materials, etc.

240,000 Tk./year

Total Expenditure :	785,000 Tk./year
	811,000 Tk./year
	240,000 Tk./year
	<u>1,836,000 Tk./year</u>

(3) Incomes

Incomes for both AMCs are as follows:

	<u>Unit</u>	<u>Daily Rental</u>	<u>Days/months</u>
LLP	341	200 Tk.	15 x 6 = 6,138,000
Tractors	5 x 2	100 Tk.	15 x 6 = 90,000
Power Tillers	10 x 2	100 Tk.	15 x 6 = 180,000
Total			6,408,000

(4) Financial balance

The financial balance per 1 AMC is as follows:

Expenditure:

Capital Investment	24.4 million Tk.
Annual O.M Cost	1.8 million Tk.
Sub-total	26.2 million.Tk.

Income:

Annual Income	3.2 million Tk.
---------------	-----------------

(5) Employment generation

The employment generated per 1 AMC is as follows:

$$30 \text{ men} \times 250 \text{ days} = 7,500 \text{ man.day/year}$$

TABLES

Table 1.1 Godown Annual Operational Capacity (1999)

	Daudkandi	Homna	Total
1. Consumption			
Paddy grain	105.0	49.4	154.4
Wheat grain	19.0	10.0	29.0
Sub-total	124.0	59.4	183.4
2. Production			
Paddy grain	115.2	50.0	165.2
Wheat grain	16.6	7.6	24.2
Sub-total	131.8	57.6	189.4
3. To Market Paddy Grain	10.2	-	10.2
4. Inputs Fertilizer	21.8	10.9	21.7
5. Storage Volume			
Paddy (from inside)	52.5	24.7	77.2
(from outside)	0	0	0
Wheat (from inside)	8.3	3.8	12.1
(from outside)	1.2	1.3	2.5
Sub-total	62.0	29.8	91.8
Inputs (from outside)	10.9	5.5	16.4
Total	72.9	35.4	108.2
6. Procurement Cost			
Paddy (inside)	278.3	130.9	409.2
(outside)	0	0	0
Wheat (inside)	41.5	19.0	60.5
(outside)	6.0	6.5	12.5
Inputs (outside)	54.5	27.4	81.9
Total	380.3	183.8	564.1

Note: Procurement prices are as follows: Sales prices
Paddy = 5.3 TK/kg, Wheat = 5.0 TK/kg Rice= 12Tk/kg
Fertilizer = 5.0 TK/kg Fertilizer= 5.15Tk/kg
Wheat= 5.15Tk/kg

Table 1.2 Cash Flow of Rice Mills Cum Godowns

Year	Unit: Million TAKA								
	Investment					Benefit			
	Initial investment		O & M		Total	Replacement		Godown	Rice Mill
	Godown	Rice Mill	Godown	Rice Mill		Godown	Rice Mill		
1	0.0	0.0	0.0	0.0	0.0			0.0	0.0
2	24.3	37.5	0.0	0.0	61.8			0.0	0.0
3	25.9	40.0	68.9	6.4	141.2		26.7	63.6	90.3
4	25.9	40.0	137.6	13.1	216.6		50.7	130.8	181.5
5	25.9	40.0	206.5	19.8	292.2		74.9	198.0	272.9
6	25.9	40.0	275.2	26.5	367.6		98.9	265.2	364.1
7	25.9	40.0	344.1	33.2	443.2		123.1	332.4	455.5
8	25.9	40.0	412.9	40.0	518.8		147.2	399.6	546.8
9	25.9	40.0	481.7	46.7	594.3		171.3	466.8	638.1
10	25.9	40.0	550.6	53.4	669.9		195.5	534.0	729.5
11			620.5	60.1	680.6		220.7	601.2	821.9
12			620.5	60.1	691.9	11.3	220.7	601.2	821.9
13			620.5	60.1	692.6	12.0	220.7	601.2	821.9
14			620.5	60.1	692.6	12.0	220.7	601.2	821.9
15			620.5	60.1	692.6	12.0	220.7	601.2	821.9
16			620.5	60.1	692.6	12.0	220.7	601.2	821.9
17			620.5	60.1	692.6	12.0	220.7	601.2	821.9
18			620.5	60.1	692.6	12.0	220.7	601.2	821.9
19			620.5	60.1	692.6	12.0	220.7	601.2	821.9
20			620.5	60.1	692.6	12.0	220.7	601.2	821.9
21			620.5	60.1	680.6		220.7	601.2	821.9
22			620.5	60.1	691.9	11.3	220.7	601.2	821.9
23			620.5	60.1	692.6	12.0	220.7	601.2	821.9
24			620.5	60.1	692.6	12.0	220.7	601.2	821.9
25			620.5	60.1	692.6	12.0	220.7	601.2	821.9
26			620.5	60.1	692.6	12.0	220.7	601.2	821.9
27			620.5	60.1	692.6	12.0	220.7	601.2	821.9
28			620.5	60.1	692.6	12.0	220.7	601.2	821.9
29			620.5	60.1	692.6	12.0	220.7	601.2	821.9
30			620.5	60.1	692.6	12.0	220.7	601.2	821.9
31			620.5	60.1	680.6		220.7	601.2	821.9
32			620.5	60.1	691.9	11.3	220.7	601.2	821.9
33			620.5	60.1	692.6	12.0	220.7	601.2	821.9
34			620.5	60.1	692.6	12.0	220.7	601.2	821.9
35			620.5	60.1	692.6	12.0	220.7	601.2	821.9
36			620.5	60.1	692.6	12.0	220.7	601.2	821.9
37			620.5	60.1	692.6	12.0	220.7	601.2	821.9
38			620.5	60.1	692.6	12.0	220.7	601.2	821.9
39			620.5	60.1	692.6	12.0	220.7	601.2	821.9
40			620.5	60.1	692.6	12.0	220.7	601.2	821.9
41			620.5	60.1	680.6		220.7	601.2	821.9
42			620.5	60.1	691.9	11.3	220.7	601.2	821.9
43			620.5	60.1	692.6	12.0	220.7	601.2	821.9
44			620.5	60.1	692.6	12.0	220.7	601.2	821.9
45			620.5	60.1	692.6	12.0	220.7	601.2	821.9
46			620.5	60.1	692.6	12.0	220.7	601.2	821.9
47			620.5	60.1	692.6	12.0	220.7	601.2	821.9
48			620.5	60.1	692.6	12.0	220.7	601.2	821.9
49			620.5	60.1	692.6	12.0	220.7	601.2	821.9
50			620.5	60.1	692.6	12.0	220.7	601.2	821.9

Note : Selling price of perboiled rice = 12TK/kg

IRR = 23.43%

Table 1.3 AMC Cost and Benefit Evaluation
(Daudlandi and Homna)

(Unit: 000 Tk.)

Year	Cost					Benefit			B-C
	Const.	Inst.	O.M	Others	Sub-total	Lease	Others	Sub-total	
1 1990	0	0	0	0	0	0	0	0	0
2 1991	9,500	7,000	0	500	17,000	0	0	0	-17,000
3 1992	9,500	7,000	0	500	17,000	0	0	0	-17,000
4 1993	9,000	7,000	0	500	16,500	0	0	0	-16,500
5 1994	0		1,600	500	2,100	6,400	600	7,000	4,900
6 1995	0		1,600	500	2,100	6,400	600	7,000	4,900
7 1996	0		1,600	500	2,100	6,400	600	7,000	4,900
1997	0		1,600	500	2,100	6,400	600	7,000	4,900
1998	0		1,600	500	2,100	6,400	600	7,000	4,900
1999	0		1,600	500	2,100	6,400	600	7,000	4,900
2000	0		1,600	500	2,100	6,400	600	7,000	4,900
2001	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2002	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2003	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2004	0		1,600	500	2,100	6,400	600	7,000	4,900
2005	0		1,600	500	2,100	6,400	600	7,000	4,900
2006	0		1,600	500	2,100	6,400	600	7,000	4,900
2007	0		1,600	500	2,100	6,400	600	7,000	4,900
2008	0		1,600	500	2,100	6,400	600	7,000	4,900
2009	0		1,600	500	2,100	6,400	600	7,000	4,900
2010	0		1,600	500	2,100	6,400	600	7,000	4,900
2011	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2012	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2013	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2014	0		1,600	500	2,100	6,400	600	7,000	4,900
2015	0		1,600	500	2,100	6,400	600	7,000	4,900
2016	0		1,600	500	2,100	6,400	600	7,000	4,900
2017	0		1,600	500	2,100	6,400	600	7,000	4,900
2018	0		1,600	500	2,100	6,400	600	7,000	4,900
2019	0		1,600	500	2,100	6,400	600	7,000	4,900
2020	0		1,600	500	2,100	6,400	600	7,000	4,900
2021	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2022	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
20 2023	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
21 2024	0		1,600	500	2,100	6,400	600	7,000	4,900
22 2025	0		1,600	500	2,100	6,400	600	7,000	4,900
23 2026	0		1,600	500	2,100	6,400	600	7,000	4,900
2027	0		1,600	500	2,100	6,400	600	7,000	4,900
2028	0		1,600	500	2,100	6,400	600	7,000	4,900
2029	0		1,600	500	2,100	6,400	600	7,000	4,900
40 2030	0		1,600	500	2,100	6,400	600	7,000	4,900
41 2031	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
42 2032	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
43 2033	0	7,000	1,600	500	9,100	6,400	600	7,000	-2,100
2034	0		1,600	500	2,100	6,400	600	7,000	4,900
2035	0		1,600	500	2,100	6,400	600	7,000	4,900
2036	0		1,600	500	2,100	6,400	600	7,000	4,900
2037	0		1,600	500	2,100	6,400	600	7,000	4,900
2038	0		1,600	500	2,100	6,400	600	7,000	4,900
50 2039	0	0	1,600	500	2,100	6,400	600	7,000	4,900
Total	28,000	105,000	73,600	24,500	231,100	294,400	27,600	322,000	90,900

IRR = 5.57%

ANNEX E
PROJECT EVALUATION

ANNEX E

PROJECT EVALUATION

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The economic evaluation are made through calculation of internal rate of return (EIRR) and socio-economic impact study.

1. Economic Evaluation

1.1 Economic Cost

The project cost broadly comprises (1) direct construction cost for project facilities, (2) cost for land acquisition and compensation, (3) administration expenses (4) expenses for engineering services, (5) physical contingencies and (6) price contingencies. These cost are made on a financial basis. All the costs, except the price contingencies, are generally regarded as net capital cost. The net capital cost is further converted into the economic project cost by applying the construction conversion factor of 0.8.

The annual economic project costs are summarized as follows:

(Unit: million Tk.)

Year	Construction Cost	Operation and Maintenance Cost	Replacement Cost	Total
1st	78.0	0.0	0.0	78.0
2nd	337.8	4.5	0.0	342.3
3rd	336.6	9.0	0.0	345.6
4th	336.6	13.5	0.0	350.1
5th	361.4	18.0	0.0	379.4
6th	355.1	22.6	0.0	377.7
7th	354.4	27.1	0.0	381.5
8th	309.6	31.6	0.0	341.2
9th	304.3	36.1	0.0	340.4
10th	303.9	40.6	0.0	344.5
11th	0.0	45.1	0.0	45.1
12th	0.0	45.1	0.0	45.1
13th	0.0	45.1	0.0	45.1
14th	0.0	45.1	0.0	45.1
15th	0.0	45.1	457.5	502.6
16th	0.0	45.1	0.0	45.1
17th	0.0	45.1	0.0	45.1
18th	0.0	45.1	0.0	45.1
19th	0.0	45.1	0.0	45.1
20th	0.0	45.1	0.0	45.1
21th	0.0	45.1	0.0	45.1
22th	0.0	45.1	0.0	45.1
23th	0.0	45.1	0.0	45.1
24th	0.0	45.1	0.0	45.1
25th	0.0	45.1	457.5	502.6
26th	0.0	45.1	0.0	45.1
27th	0.0	45.1	0.0	45.1
28th	0.0	45.1	0.0	45.1
29th	0.0	45.1	0.0	45.1
30th	0.0	45.1	0.0	45.1
31th	0.0	45.1	0.0	45.1
32th	0.0	45.1	0.0	45.1
33th	0.0	45.1	0.0	45.1
34th	0.0	45.1	0.0	45.1
35th	0.0	45.1	457.5	502.6
36th	0.0	45.1	0.0	45.1
37th	0.0	45.1	0.0	45.1
38th	0.0	45.1	0.0	45.1
39th	0.0	45.1	0.0	45.1
40th	0.0	45.1	0.0	45.1
41th	0.0	45.1	0.0	45.1
42th	0.0	45.1	0.0	45.1
43th	0.0	45.1	0.0	45.1
44th	0.0	45.1	0.0	45.1
45th	0.0	45.1	457.5	502.6
46th	0.0	45.1	0.0	45.1
47th	0.0	45.1	0.0	45.1
48th	0.0	45.1	0.0	45.1
49th	0.0	45.1	0.0	45.1
50th	0.0	45.1	0.0	45.1
Total	3,077.7	2,007.0	1,830.0	6,914.7

The annual operation and maintenance cost is estimated at 2.0% of economic project cost for irrigation and road works, 0.5% for buildings and 5.0% for equipments. And the replacement cost is estimated in every 10 years.

1.2 Economic Benefits

The project benefits will be derived from the increased crop and fishery productions due to stable irrigation water supply and improvement of fishery ponds. These benefits are estimated as the difference of the annual net production values under future with and without project conditions.

The agricultural net production values in Homna and Daudkandi upazilas are calculated in Tables 1.1 and 1.2.

The incremental benefit derived from fish culture is calculated in the following table.

(Unit: million Tk.)

Description	Gross Production Value	Total Production Value	Net Production Value
With project condition	843.4	582.7	260.7
Without project condition	-	-	63.4
Difference			197.3
Conversion (x 0.8)			157.8

These benefits will accrue in 3rd year and increase gradually during the build-up period of 9 years, and will reach the target benefits in 12th year. The annual benefits are summarized as follows:

(Unit: million Tk.)

Year	Agriculture	Fish Culture	Total
1st	0.0	0.0	0.0
2nd	108.4	6.7	115.1
3rd	108.4	6.7	115.1
4th	162.6	13.1	175.7
5th	216.8	19.7	236.5
6th	271.0	37.2	308.2
7th	325.2	54.6	379.8
8th	379.4	72.2	451.6
9th	433.6	98.4	532.0
10th	487.8	129.4	617.2
11th	542.0	157.8	699.8
12th	542.0	157.8	699.8
...
50th	542.0	157.8	699.8
Total	24,064.8	6,743.3	30,808.1

1.3 Economic Internal Rate of Return

The internal rate of return is calculated on the following assumptions:

- (1) The economic useful life of the project will be 50 years,
- (2) The agricultural and fishery benefits are counted in the evaluations, and any indirect or intangible benefits are not taken into account in calculation of EIRR,
- (3) The construction periods will be ten (10) years including one year for detailed design and preparatory works, and
- (4) The economic costs and benefits are used in the evaluation.

The economic internal rate of return is calculated on the basis of the flows of economic benefits and costs mentioned above (see table 1.3.1). The calculation result is:

$$\text{EIRR} = 20.0 \%$$

1.4 Sensitivity Analysis

In order to evaluate the soundness of the project against the possible changes in future economic conditions, sensitivity analysis are made for the following cases:

- | | |
|--------|---|
| Case-1 | 10% project cost increase due to unforeseen natural conditions and unexpected increase of material costs |
| Case-2 | 10% project benefit decrease due to unexpected decrease in forecasted price of farm and fishery products and yields |

Case-3 Tow years overrun of build-up period due to unexpected inefficiency in
O&M managements and agricultural extension services

The effects of these changes on EIRR are summarized as shown below:

<u>Case</u>	<u>EIRR</u>
Case-1	17.9
Case-2	17.7
Case-3	18.2

1.5 Result of Economic Evaluation

Judging from the above calculation results, the project could be justified with EIRR of 20%. The sensitivity analyses indicate that the economic feasibility of the project is rather insensitive to the possible changes.

2. Socio-Economic Impacts

Various secondary and intangible benefits and/or favorable socio-economic impacts are expected from the implementation of the project. Major items of these secondary and intangible benefits are described hereunder.

2.1 Increase of Employment Opportunity

Long-term employment opportunity of about 20 million man-day/year (for 80 thousand persons) will be newly created by the project implementation. Consequently, a total long-term employment opportunity of 45 million man-day/year (for 180 thousand persons) will be secured. This employment creation will decrease the unemployment rate from 59% at present to 40% in full-scale operation period. The employees, who are mostly landless farmers and poor labors, will increase their incomes, and a favorable impact will be shifted to the regional economy.

In addition to the above mentioned long-term job creation, short-term employment opportunity of about 27.2 million man-day (3 million man-day/year, 20 thousand man/day) will be created by the project implementation. The employee will be able to gain more experience, technical know-how, skillfulness in various fields through the job. These accumulation would be applied to the future development in the region.

2.2 Other Socio-economic Impacts

(1) Improvement of insufficient nutrition

At present, inhabitants in the project area take about 1,250 cal/day on average. This caloric intake is far less than the necessary caloric intake of 2,700 cal/day (FAO proposal).

After completion of the project, however, agricultural production will be increased to a great extent, and it would be possible to improve the present poor caloric intake up to 2,100 cal/day. Furthermore, incremental products of vegetable and fish will also improve the nutritional balance.

(2) Increase of agricultural products and fish value

Agricultural products and fish will be received an additional value by storing in cold storage and selling at the favorable market price level.

(3) Improvement of local transportation

The local transportation will be much improved by the construction and/or rehabilitation of Feeder A,B and rural road. The expanded road system will not only enhance the economic activity but also contribute to regional accessibility and communication.

(4) Improvement of daily living necessities

Stable supply of daily living necessities will be ensured even in the flood season.

(5) Improvement of sanitation

A total of 85,000 inhabitants will be able to receive fresh water. Epidemic diseases will be reduced by supplying fresh water and through the education of public health.

(6) Expansion of rural education

Training of farmers through the farming practices in AMC and/or through UCCA will bring a remarkable improvement in the productivity of crops, livestock and fishery.

TABLES

Table 1.2.1 (1/2) Gross and Net Production Value in Daudkandi Upazila

Crop	Cultivated Area (ha)	Unit Yield (ton/ha)	Total production (ton)	Unit Price (TK/ton)	Gross Production Value (TK/Million)	Unit Production Cost (TK/ha)	Total Production Cost (TK/Million)	Net Production Value (TK/Million)
(1) Without Project								
Paddy								
Aus								
HYV	100	2.21	221					
LV	3,560	0.76	2,706					
T&A	3,660		2,927	4,500	13.2	2,596	9.5	3.7
T.Aman								
HYV	150	2.54	381					
LV	650	1.22	793					
T&A	800		1,174	4,500	5.3	4,796	3.8	1.5
B.Aman								
LV	18,340	1.12	20,541	4,500	92.4	2,088	38.3	54.1
Boro								
HYV	7,880	3.53	27,816					
LV	670	1.88	1,260					
T&A	8,550		29,076	4,500	130.8	7,036	60.2	70.6
(Sub-Total)							111.8	129.9
Rabi Crops								
Wheat								
HYV-I	1,620	2.26	3,661					
HYV-II	6,820	1.76	12,003					
T&A	8,440		15,664	4,582	71.5	3,396	28.7	42.8
Oilseed								
HYV	60	1.13	68					
LV	1,780	0.58	1,032					
T&A	1,840		1,100	6,000	6.6	2,216	4.1	2.5
Potato								
HYV	3,930	17.22	67,675					
LV	60	5.23	314					
T&A	3,990		67,989	1,000	68.0	22,949	91.6	-23.6
Winter Vegetables								
Pulses	1,270	11.46	14,554	4,000	58.2	10,720	13.6	44.6
Pulses	620	0.68	422	6,400	2.7	1,452	0.9	1.8
(Sub-Total)							138.9	68.1
Karief Crops								
Jute								
Oli	10	2.07	21					
Cap	1,520	2.03	3,086					
T&A	1,530		3,107	4,000	12.4	3,228	4.9	7.5
Oilseed (sesame)								
T&A	620	0.92	570	6,000	3.4	2,216	1.4	2.0
Summer Vegetable								
Chilli	580	23.20	13,456	4,000	53.8	10,720	6.2	47.6
Chilli	1,410	1.31	1,847	16,000	29.6	5,296	7.5	22.1
(Sub-Total)							20.0	79.2
((TOTAL - 1))							270.7	277.2

Table 1.2.1 (2/2) Gross and Net Production Value in Daudkandi Upazila

Crop	Cultivated Area (ha)	Unit Yield (ton/ha)	Total Production (ton)	Unit Price (TK/ton)	Gross Production Value (TK/Million)	Unit Production Cost (TK/ha)	Total Production Cost (TK/Million)	Net Production Value (TK/Million)
(2) With Project								
Paddy								
Aus HYV	3,260	3.00	9,780	4,500	44.0	5,830	19.0	25.0
T.Aman HYV	1,080	3.50	3,780	4,500	17.0	6,088	6.6	10.4
B.Aman LV	17,000	2.20	37,400	4,500	168.3	4,020	68.3	100.0
Boro HYV	12,850	5.00	64,250	4,500	289.1	7,783	100.0	189.1
(Sub-Total)					518.4		193.9	324.5
Rabi Crops								
Wheat HYV(Irr.)	6,650	2.50	16,625	4,582	76.2	4,916	32.7	43.5
Oilseed HYV	1,660	1.20	1,992	6,000	12.0	3,164	5.3	6.7
Potato HYV	3,800	20.00	76,000	1,000	76.0	25,690	97.6	-21.6
Winter Vegetables	2,160	12.00	25,920	4,000	103.7	11,604	25.1	78.6
Pulses	1,080	1.00	1,080	6,400	6.9	2,380	2.6	4.3
(Sub-Total)					274.8		163.3	111.5
Karief Crops								
Jute Oli	1,620	2.20	3,564	4,000	14.3	3,816	6.2	8.1
Oilseed (sesame)	1,450	1.00	1,450	6,000	8.7	3,164	4.6	4.1
Summer Vegetable	2,160	19.00	41,040	4,000	164.2	11,604	25.1	139.1
Chilli	2,170	1.50	3,255	16,000	52.1	6,472	14.0	38.1
Pulses	540	1.00	540	6,400	3.5	2,380	1.3	2.2
(Sub-Total)					242.8		51.2	191.6
((TOTAL - 2))					1036.0		408.4	627.6
(3) Incremental Benefit (TOTAL-2) - (TOTAL-1)								
								350.4

Table 1.2.2 (1/2) Gross and Net Production Value in Homna Upazila

Crop	Cultivated Area (ha)	Unit Yield (ton/ha)	Total Production (ton)	Unit Price (TK/ton)	Gross Production Value (TK/Million)	Unit Production Cost (TK/ha)	Total Production Cost (TK/Million)	Net Production Value (TK/Million)
(1) Without Project								
Paddy Aus LV	1,770	1.31	2,319	4,500	10.4	2,596	4.6	5.8
B.Aman LV	10,340	1.27	13,132	4,500	59.1	2,088	21.6	37.5
Boro HYV	2,590	3.14	8,133					
LV	200	1.07	214					
T&A	2,790	-	8,347	4,500	37.6	7,036	19.6	18.0
(Sub-Total)					107.1		45.8	61.3
Rabi Crops								
Wheat (Non-Irr.)	3,780	1.78	6,728	4,582	30.8	3,396	12.8	18.0
Oilseed LV (Mustard)	880	0.60	528	7,200	3.8	2,216	2.0	1.8
Potato HYV	70	13.03	912					
LV	40	6.39	256					
T&A	110	-	1,168	2,000	2.3	22,949	2.5	-0.2
Winter Vegetables	990	10.80	10,692	4,000	42.8	10,720	10.6	32.2
(Sub-Total)					79.7		27.9	51.8
Kharif Crops								
Jute Oli	20	1.62	32					
Cap	970	1.34	1,300					
T&A	990	-	1,332	4,400	5.9	3,228	3.2	2.7
Oilseed (sesame)	210	1.07	225	7,200	1.6	2,216	0.5	1.1
Summer Vegetable	110	9.86	1,085	4,000	4.3	10,720	1.2	3.1
Chilli	730	1.12	818	16,000	13.1	5,296	3.9	9.2
(Sub-Total)					24.9		8.8	16.1
((TOTAL - 1))					211.7		82.5	129.2

Table 1.2.2 (2/2) Gross and Net Production Value in Homna Upazila

Crop	Cultivated Area (ha)	Unit Yield (ton/ha)	Total Production (ton)	Unit Price (TK/ton)	Gross Production Value (TK/Million)	Unit Production Cost (TK/ha)	Total Production Cost (TK/Million)	Net Production Value (TK/Million)
(2) With Project								
Paddy Aus HYV	1,210	3.00	3,630	4,500	16.3	5,830	7.1	9.2
T.Aman HYV	580	3.50	2,030	4,500	9.1	6,088	3.5	5.6
B.Aman LV	7,620	2.50	19,050	4,500	85.7	4,020	30.6	55.1
Boro HYV	5,280	4.80	25,344	4,500	114.0	7,783	41.1	72.9
(Sub-Total)					225.1		82.3	142.8
Rabi Crops								
Wheat HYV (Tri.)	3,030	2.50	7,575	4,582	34.7	4,916	14.9	19.8
Oilseed HYV	1,170	1.10	1,287	6,000	7.7	3,164	3.7	4.0
Potato HYV	1,980	16.00	31,680	1,000	31.7	25,690	50.9	-19.2
Winter Vegetables	1,560	12.00	18,720	4,000	74.9	11,604	18.1	56.8
Pulses	590	1.00	590	6,400	3.8	2,380	1.4	2.4
(Sub-Total)					152.8		90.0	62.8
Kareef Crops								
Jute Oli	1,360	2.00	2,720	4,000	10.9	3,816	5.2	5.7
Oilseed (sesame)	620	1.10	682	6,000	4.1	3,164	2.0	2.1
Pulses	390	1.00	390	6,400	2.5	2,380	0.9	1.6
Summer Vegetable	1,560	17.00	26,520	4,000	106.1	11,604	18.1	88.0
Chilli	1,240	1.30	1,612	16,000	25.8	6,472	8.0	17.8
(Sub-Total)					149.4		34.2	115.2
((TOTAL - 2))					527.3		206.5	320.8
(3) Incremental Benefit (TOTAL-2) - (TOTAL-1)								
								191.6

Table 1.3.1 Cost and Benefit Stream
(Original Case)

(Unit : Million TK)

Year	Cost				Benefit		
	Capital Cost	O & M Cost	Repayment Cost	Total	Agriculture	Fishery	Total
1	78.0	0.0	0.0	78.0	0.0	0.0	0.0
2	337.8	4.5	0.0	342.3	0.0	0.0	0.0
3	336.6	9.0	0.0	345.6	108.4	6.7	115.1
4	336.6	13.5	0.0	350.1	162.4	13.1	175.5
5	361.4	18.0	0.0	379.4	216.8	19.7	236.5
6	355.1	22.6	0.0	377.7	271.0	37.2	308.2
7	354.4	27.1	0.0	381.5	325.2	54.6	379.8
8	309.6	31.6	0.0	341.2	379.4	72.2	451.6
9	304.3	36.1	0.0	340.4	433.6	98.4	532.0
10	303.9	40.6	0.0	344.5	487.8	129.4	617.2
11	0.0	45.1	0.0	45.1	542.0	157.8	699.8
12	0.0	45.1	0.0	45.1	542.0	157.8	699.8
13	0.0	45.1	0.0	45.1	542.0	157.8	699.8
14	0.0	45.1	0.0	45.1	542.0	157.8	699.8
15	0.0	45.1	457.5	502.6	542.0	157.8	699.8
16	0.0	45.1	0.0	45.1	542.0	157.8	699.8
17	0.0	45.1	0.0	45.1	542.0	157.8	699.8
18	0.0	45.1	0.0	45.1	542.0	157.8	699.8
19	0.0	45.1	0.0	45.1	542.0	157.8	699.8
20	0.0	45.1	0.0	45.1	542.0	157.8	699.8
21	0.0	45.1	0.0	45.1	542.0	157.8	699.8
22	0.0	45.1	0.0	45.1	542.0	157.8	699.8
23	0.0	45.1	0.0	45.1	542.0	157.8	699.8
24	0.0	45.1	0.0	45.1	542.0	157.8	699.8
25	0.0	45.1	457.5	502.6	542.0	157.8	699.8
26	0.0	45.1	0.0	45.1	542.0	157.8	699.8
27	0.0	45.1	0.0	45.1	542.0	157.8	699.8
28	0.0	45.1	0.0	45.1	542.0	157.8	699.8
29	0.0	45.1	0.0	45.1	542.0	157.8	699.8
30	0.0	45.1	0.0	45.1	542.0	157.8	699.8
31	0.0	45.1	0.0	45.1	542.0	157.8	699.8
32	0.0	45.1	0.0	45.1	542.0	157.8	699.8
33	0.0	45.1	0.0	45.1	542.0	157.8	699.8
34	0.0	45.1	0.0	45.1	542.0	157.8	699.8
35	0.0	45.1	457.5	502.6	542.0	157.8	699.8
36	0.0	45.1	0.0	45.1	542.0	157.8	699.8
37	0.0	45.1	0.0	45.1	542.0	157.8	699.8
38	0.0	45.1	0.0	45.1	542.0	157.8	699.8
39	0.0	45.1	0.0	45.1	542.0	157.8	699.8
40	0.0	45.1	0.0	45.1	542.0	157.8	699.8
41	0.0	45.1	0.0	45.1	542.0	157.8	699.8
42	0.0	45.1	0.0	45.1	542.0	157.8	699.8
43	0.0	45.1	0.0	45.1	542.0	157.8	699.8
44	0.0	45.1	0.0	45.1	542.0	157.8	699.8
45	0.0	45.1	457.5	502.6	542.0	157.8	699.8
46	0.0	45.1	0.0	45.1	542.0	157.8	699.8
47	0.0	45.1	0.0	45.1	542.0	157.8	699.8
48	0.0	45.1	0.0	45.1	542.0	157.8	699.8
49	0.0	45.1	0.0	45.1	542.0	157.8	699.8
50	0.0	45.1	0.0	45.1	542.0	157.8	699.8
Total	3,077.7	2,007.0	1,830.0	6,914.7	24,064.6	6,743.3	30,807.9

IRR = 20.0 %

Table 1.3.2 Cost and Benefit Stream
(Case - 1)

(Unit : Million TK)

Year	Cost				Benefit		
	Capital Cost	O & M Cost	Repayment Cost	Total	Agriculture	Fishery	Total
1	85.8	0.0	0.0	85.8	0.0	0.0	0.0
2	371.6	5.0	0.0	376.6	0.0	0.0	0.0
3	370.3	9.9	0.0	380.2	108.4	6.7	115.1
4	370.3	14.9	0.0	385.2	162.4	13.1	175.5
5	397.5	19.8	0.0	417.3	216.8	19.7	236.5
6	390.6	24.9	0.0	415.5	271.0	37.2	308.2
7	389.8	29.8	0.0	419.6	325.2	54.6	379.8
8	340.6	34.8	0.0	375.4	379.4	72.2	451.6
9	334.7	39.7	0.0	374.4	433.6	98.4	532.0
10	334.3	44.7	0.0	379.0	487.8	129.4	617.2
11	0.0	49.6	0.0	49.6	542.0	157.8	699.8
12	0.0	49.6	0.0	49.6	542.0	157.8	699.8
13	0.0	49.6	0.0	49.6	542.0	157.8	699.8
14	0.0	49.6	0.0	49.6	542.0	157.8	699.8
15	0.0	49.6	503.3	552.9	542.0	157.8	699.8
16	0.0	49.6	0.0	49.6	542.0	157.8	699.8
17	0.0	49.6	0.0	49.6	542.0	157.8	699.8
18	0.0	49.6	0.0	49.6	542.0	157.8	699.8
19	0.0	49.6	0.0	49.6	542.0	157.8	699.8
20	0.0	49.6	0.0	49.6	542.0	157.8	699.8
21	0.0	49.6	0.0	49.6	542.0	157.8	699.8
22	0.0	49.6	0.0	49.6	542.0	157.8	699.8
23	0.0	49.6	0.0	49.6	542.0	157.8	699.8
24	0.0	49.6	0.0	49.6	542.0	157.8	699.8
25	0.0	49.6	503.3	552.9	542.0	157.8	699.8
26	0.0	49.6	0.0	49.6	542.0	157.8	699.8
27	0.0	49.6	0.0	49.6	542.0	157.8	699.8
28	0.0	49.6	0.0	49.6	542.0	157.8	699.8
29	0.0	49.6	0.0	49.6	542.0	157.8	699.8
30	0.0	49.6	0.0	49.6	542.0	157.8	699.8
31	0.0	49.6	0.0	49.6	542.0	157.8	699.8
32	0.0	49.6	0.0	49.6	542.0	157.8	699.8
33	0.0	49.6	0.0	49.6	542.0	157.8	699.8
34	0.0	49.6	0.0	49.6	542.0	157.8	699.8
35	0.0	49.6	503.3	552.9	542.0	157.8	699.8
36	0.0	49.6	0.0	49.6	542.0	157.8	699.8
37	0.0	49.6	0.0	49.6	542.0	157.8	699.8
38	0.0	49.6	0.0	49.6	542.0	157.8	699.8
39	0.0	49.6	0.0	49.6	542.0	157.8	699.8
40	0.0	49.6	0.0	49.6	542.0	157.8	699.8
41	0.0	49.6	0.0	49.6	542.0	157.8	699.8
42	0.0	49.6	0.0	49.6	542.0	157.8	699.8
43	0.0	49.6	0.0	49.6	542.0	157.8	699.8
44	0.0	49.6	0.0	49.6	542.0	157.8	699.8
45	0.0	49.6	503.3	552.9	542.0	157.8	699.8
46	0.0	49.6	0.0	49.6	542.0	157.8	699.8
47	0.0	49.6	0.0	49.6	542.0	157.8	699.8
48	0.0	49.6	0.0	49.6	542.0	157.8	699.8
49	0.0	49.6	0.0	49.6	542.0	157.8	699.8
50	0.0	0.0	0.0	0.0	542.0	157.8	699.8
Total	3,385.5	2,157.9	2,013.2	7,556.6	24,064.6	6,743.3	30,807.9

IRR = 17.9 %

Table 1.3.3 Cost and Benefit Stream
(Case - 2)

(Unit : Million TK)

Year	Cost				Benefit		
	Capital Cost	O & M Cost	Repayment Cost	Total	Agriculture	Fishery	Total
1	78.0	0.0	0.0	78.0	0.0	0.0	0.0
2	337.8	4.5	0.0	342.3	0.0	0.0	0.0
3	336.6	9.0	0.0	345.6	97.6	6.0	103.6
4	336.6	13.5	0.0	350.1	146.2	11.8	158.0
5	361.4	18.0	0.0	379.4	195.1	17.7	212.8
6	355.1	22.6	0.0	377.7	243.9	33.5	277.4
7	354.4	27.1	0.0	381.5	292.7	49.1	341.8
8	309.6	31.6	0.0	341.2	341.5	65.0	406.5
9	304.3	36.1	0.0	340.4	390.2	88.6	478.8
10	303.9	40.6	0.0	344.5	439.0	116.5	555.5
11	0.0	45.1	0.0	45.1	487.8	142.0	629.8
12	0.0	45.1	0.0	45.1	487.8	142.0	629.8
13	0.0	45.1	0.0	45.1	487.8	142.0	629.8
14	0.0	45.1	0.0	45.1	487.8	142.0	629.8
15	0.0	45.1	457.5	502.6	487.8	142.0	629.8
16	0.0	45.1	0.0	45.1	487.8	142.0	629.8
17	0.0	45.1	0.0	45.1	487.8	142.0	629.8
18	0.0	45.1	0.0	45.1	487.8	142.0	629.8
19	0.0	45.1	0.0	45.1	487.8	142.0	629.8
20	0.0	45.1	0.0	45.1	487.8	142.0	629.8
21	0.0	45.1	0.0	45.1	487.8	142.0	629.8
22	0.0	45.1	0.0	45.1	487.8	142.0	629.8
23	0.0	45.1	0.0	45.1	487.8	142.0	629.8
24	0.0	45.1	0.0	45.1	487.8	142.0	629.8
25	0.0	45.1	457.5	502.6	487.8	142.0	629.8
26	0.0	45.1	0.0	45.1	487.8	142.0	629.8
27	0.0	45.1	0.0	45.1	487.8	142.0	629.8
28	0.0	45.1	0.0	45.1	487.8	142.0	629.8
29	0.0	45.1	0.0	45.1	487.8	142.0	629.8
30	0.0	45.1	0.0	45.1	487.8	142.0	629.8
31	0.0	45.1	0.0	45.1	487.8	142.0	629.8
32	0.0	45.1	0.0	45.1	487.8	142.0	629.8
33	0.0	45.1	0.0	45.1	487.8	142.0	629.8
34	0.0	45.1	0.0	45.1	487.8	142.0	629.8
35	0.0	45.1	457.5	502.6	487.8	142.0	629.8
36	0.0	45.1	0.0	45.1	487.8	142.0	629.8
37	0.0	45.1	0.0	45.1	487.8	142.0	629.8
38	0.0	45.1	0.0	45.1	487.8	142.0	629.8
39	0.0	45.1	0.0	45.1	487.8	142.0	629.8
40	0.0	45.1	0.0	45.1	487.8	142.0	629.8
41	0.0	45.1	0.0	45.1	487.8	142.0	629.8
42	0.0	45.1	0.0	45.1	487.8	142.0	629.8
43	0.0	45.1	0.0	45.1	487.8	142.0	629.8
44	0.0	45.1	0.0	45.1	487.8	142.0	629.8
45	0.0	45.1	457.5	502.6	487.8	142.0	629.8
46	0.0	45.1	0.0	45.1	487.8	142.0	629.8
47	0.0	45.1	0.0	45.1	487.8	142.0	629.8
48	0.0	45.1	0.0	45.1	487.8	142.0	629.8
49	0.0	45.1	0.0	45.1	487.8	142.0	629.8
50	0.0	45.1	0.0	45.1	487.8	142.0	629.8
Total	3,077.7	2,007.0	1,830.0	6,914.7	21,658.2	6,068.2	27,726.4

IRR = 17.7 %

Table 1.3.4 Cost and Benefit Stream
(Case - 3)

(Unit: Million TK)

Year	Cost				Benefit		
	Capital Cost	O & M Cost	Repayment Cost	Total	Agriculture	Fishery	Total
1	78.0	0.0	0.0	78.0	0.0	0.0	0.0
2	337.8	4.5	0.0	342.3	0.0	0.0	0.0
3	336.6	9.0	0.0	345.6	54.2	15.7	69.9
4	336.6	13.5	0.0	350.1	108.4	31.5	139.9
5	361.4	18.0	0.0	379.4	162.6	47.3	209.9
6	355.1	22.6	0.0	377.7	216.8	63.1	279.9
7	354.4	27.1	0.0	381.5	271.0	78.9	349.9
8	309.6	31.6	0.0	341.2	325.2	94.7	419.9
9	304.3	36.1	0.0	340.4	379.4	110.5	489.9
10	303.9	40.6	0.0	344.5	433.6	126.2	559.8
11	0.0	45.1	0.0	45.1	487.8	142.0	629.8
12	0.0	45.1	0.0	45.1	514.9	149.9	664.8
13	0.0	45.1	0.0	45.1	542.0	157.8	699.8
14	0.0	45.1	0.0	45.1	542.0	157.8	699.8
15	0.0	45.1	457.5	502.6	542.0	157.8	699.8
16	0.0	45.1	0.0	45.1	542.0	157.8	699.8
17	0.0	45.1	0.0	45.1	542.0	157.8	699.8
18	0.0	45.1	0.0	45.1	542.0	157.8	699.8
19	0.0	45.1	0.0	45.1	542.0	157.8	699.8
20	0.0	45.1	0.0	45.1	542.0	157.8	699.8
21	0.0	45.1	0.0	45.1	542.0	157.8	699.8
22	0.0	45.1	0.0	45.1	542.0	157.8	699.8
23	0.0	45.1	0.0	45.1	542.0	157.8	699.8
24	0.0	45.1	0.0	45.1	542.0	157.8	699.8
25	0.0	45.1	457.5	502.6	542.0	157.8	699.8
26	0.0	45.1	0.0	45.1	542.0	157.8	699.8
27	0.0	45.1	0.0	45.1	542.0	157.8	699.8
28	0.0	45.1	0.0	45.1	542.0	157.8	699.8
29	0.0	45.1	0.0	45.1	542.0	157.8	699.8
30	0.0	45.1	0.0	45.1	542.0	157.8	699.8
31	0.0	45.1	0.0	45.1	542.0	157.8	699.8
32	0.0	45.1	0.0	45.1	542.0	157.8	699.8
33	0.0	45.1	0.0	45.1	542.0	157.8	699.8
34	0.0	45.1	0.0	45.1	542.0	157.8	699.8
35	0.0	45.1	457.5	502.6	542.0	157.8	699.8
36	0.0	45.1	0.0	45.1	542.0	157.8	699.8
37	0.0	45.1	0.0	45.1	542.0	157.8	699.8
38	0.0	45.1	0.0	45.1	542.0	157.8	699.8
39	0.0	45.1	0.0	45.1	542.0	157.8	699.8
40	0.0	45.1	0.0	45.1	542.0	157.8	699.8
41	0.0	45.1	0.0	45.1	542.0	157.8	699.8
42	0.0	45.1	0.0	45.1	542.0	157.8	699.8
43	0.0	45.1	0.0	45.1	542.0	157.8	699.8
44	0.0	45.1	0.0	45.1	542.0	157.8	699.8
45	0.0	45.1	457.5	502.6	542.0	157.8	699.8
46	0.0	45.1	0.0	45.1	542.0	157.8	699.8
47	0.0	45.1	0.0	45.1	542.0	157.8	699.8
48	0.0	45.1	0.0	45.1	542.0	157.8	699.8
49	0.0	45.1	0.0	45.1	542.0	157.8	699.8
50	0.0	45.1	0.0	45.1	542.0	157.8	699.8
Total	3,077.7	2,007.0	1,830.0	6,914.7	23,549.9	6,856.2	30,406.1

IRR = 18.2 %

