付　表

表 1.1　作業監理委員、調査団およびバングラデシュ政府関係者リスト

Name	Designation or Position
I. Advisory Committee	
S. Nakagawa	Chairman
A. Kubota	Irrigation and Drainage
Y. Shimonomura	Irrigation and Drainage
M. Itoh	Agro-economy
K. Katoh	Agriculture
T. Iwai	Project Evaluation
II. Study Team	
H. Yamamoto	Team Leader
M. Koyama	Agronomy/Soils/Land Use
M. Masaki	Rural Development
B. Abe	Agro-processing
J. Kawakami	Institution/Support
H. Goto	Institution/Support
A. Ibrahim	Inland Fishery
Y. Fukasaka	Marketing
T. Osawa	Irrigation and Drainage
Y. Takahashi	Facility Plan/Topographic Survey
S. Takagi	Project Evaluation
III. Counterpart Personnel	
(BRDB)	
S. M. Farid	Director General
M. Baksh	Deputy Director (Extension)
M. Miah	Deputy Director (STP)
A. Hossain	Deputy Director (RD-12)
M. Islam	Deputy Director (Co-op.)
N. Amin	Deputy Director (Irrigation)
M. Rahman	Deputy Director (Planning)
J. Chowdhury	Deputy Director (Monitoring)
(LGEB)	
A. Bhuiyan	Superintendent Engineer (Training)
S. K. Sarkar	Executive Engineer-1
A. Samad	Executive Engineer-2
A. Rakib	Exective Engineer (Water Resource)
M. Rahman	Assistant Engineer (Mapping)

表 2.1　第４次５ヶ年計画の目標（1990-1995）

	Aspect		Development Goal
(1)	Population Control	:	To reduce population growth rate from 2.16% in 1990 to 1.81% in 1995, and therefore to reduce the total fertility rate per woman from 4.5 to 3.3.
(2)	Employment generation	:	It is expected that the major source for further employment generation will be in the manufacturing sector especially through small and informal manufacturing activities, non-crop agriculture and other service sectors. The total employment shares will change, i.e. the agricultural sector will change from 55.3% in 1990 to 49.6% in 1995 and the manufacturing sector from 10.8% in 1990 to 12.6% in 1995.
(3)	Education	:	To be done as part of a comprehensive manpower development plan. To plan for education consistent with the pre-identified manpower plan.
(4)	Food, nutrition and basic needs	:	To increase the production of food grains from 18.5 million tons in 1990 to 22.0 million tons in 1995 so as to ensure self-sufficiency in food grains by 1995.
(5)	GDP growth	:	A 5.0% annual growth rate is targeted.
(6)	Resource mobilization	:	External resources TK 347.600 million (51.7%) Domestic resources TK 324,700 million (48.3%)

表 3.1　地下水の開発地域、特徴およびポテンシャル

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Identified A		Percentage of Coarser Material	Identified Area	Specific Yield Calculated	Maximum Depth to Ground Water	Actual Water Table	Maximum Fluctuation	Ground Water Resource (Million M3)/ Rang(mm)/Average(mm) 1981~85			Thickness of Upper Silt and	Depth to Top of Main	Thickness of Main Aquifer at	Aquifer Characteristic Derived from Aquifer Test			Chemical Qualities			DEVELOPMENT POTENTIALS
Zone	Sub-Zone	(Study Depth 105 m)	(Km2)	from Bore-log up to 15 m	Table from Land Surface (m)	Fluctua-tion (m)	Attained/ Expected (m)	Actual Recharge on Existing Development/ Losses (from Fluctuation)	Potential Recharge Rp	Average Recharge Ra=Rpx60 100	Clay (m)	Aquifer (m)	Various Depth (m)	Transmis-sibility of Main Aquifer SQ (m/day)	Storage Co-efficient	Specific Capacity (l/S/m)	Total Dissolved solids (TDS) PPM (Depth Range 27 ~ 106m)	Iron (Fe) PPM (27 ~ 106m)	Chloride (Cl) PPM (27 ~ 106m)	
		%																		
B	B1	50 ~ 75	285.00	0.046	2.5 ~ 6.0	2.5~4.5	6.0	35.40 (124 mm)	78.80 (276 mm)	47.30 (165 mm)	1.0~6.0	15 ~ 70	50 ~ 80	400 ~ 670	0.01 ~ 0.08	2.2 ~ 9.6	174 ~ 213	5.0 ~ 10.0	8 ~ 18	Area is suitable for furthure development of shallow/deep tube-weel (sinking of STW/DTW side by side within the same area is not advisable).
	B2		325.00	0.034		1.0~3.5	6.0	31.70 (98 mm)	66.30 (204 mm)	39.80 (122 mm)	10 ~ 29			315 470	0.01~0.05	4.5 ~ 9.5	240 ~ 275	6.5 ~ 19.2	11 ~ 12	
	B3		589.00	0.045	3.5 ~ 6.0	3.5 ~ 4.5	6.0	104.90 (178 mm)	160.30)272 mm)	96.20 (163 mm)	1 ~ 10	15 ~ 45		315 ~ 900	0.001~0.05	3.1~17.0	116 ~ 240	4.5 ~ 21.0	8 ~ 18	Most of the area has good water qualities.
	B4		322.00	0.033	3.5 ~ 6.0	2.5 ~ 6.5	7.0	36.40 (113 mm)	65.40 (203 mm)	39.20 (122 mm)	1 ~ 28			470 ~ 553	0.01~ 0.13	2.2 ~ 9.5	174 ~ 219	5.0 ~ 21.0	8 ~ 13	
C	C1	25 ~ 50	1,074	0.043	2.5 ~ 3.5	1.0 ~ 3.5	4.5	113.80 (106 mm)	205.50 (191 mm)	123.30 (115 mm)		15 ~ 70	25 ~ 80	200 ~ 1000	0.01~0.05	4.5 ~ 9.5	240 ~ 1100	1.0 ~ 19.2	12 ~ 735	Area is moderately suitable for further development of Shallow/deep tube- well (sinking of STW/DTW side by side whithin the same area is not advisable). Installation of well within the range of 30m to 106 m depth is not advisable in the salinity problem area like Chandpur, Kachua, barura, Sahrasti.
	C2		1,018	0.044	3.5 ~ 6.0	1.0 ~ 4.5	5.0	145.50 (142 mm)	223.90 (220 mm)	134.40 (132 mm)	1 ~ 10	15 ~ 45		200 ~ 750		2.8 ~ 7.0	145 ~ 1,100	1.0 ~ 7.0	3 ~ 735	
	C3		630.00	0.042		3.5 ~ 4.5	7.0	92.40 (147 mm)	185.20 (294 mm)	111.10 (176 mm)		15 ~ 70	50 ~ 80	325 ~ 750	0.01~0.04	2.8 ~ 6.7	145 ~ 339	1.0 21.0	3 ~ 390	
	C4		431.00		6.0 ~ 15.0	4.5 ~ 6.5	9.5	111.30 (258 mm)	172.00 (399 mm)	103.20 (239 mm)	6 ~ 28	15 ~ 45		325 ~ 450	0.04~0.05	2.8 ~ 3.9	174 ~ 347	8.0 ~ 10.0	8 ~ 18	Area is suitable for further development of DTW. Water quality is suitable for irrigation.
D	D1	0 ~ 25	365.00	0.046	2.5 ~ 6.0	1.0 ~ 4.5	5.0	47.00 (128 mm)	70.10 (192 mm)	42.10 (115 mm)	1 ~ 6	15 ~ 70	15 ~ 80	498 ~ 670	0.01~0.13	2.2 ~ 9.6	174 ~ 1,105	1.2 ~ 21.0	8 ~ 60	Area moderately suitable for further development of Shallow/deep tube-well (sinking of STW/DTW side by side within the same area is not advisable). Installation of well within the range of 30m to 106m depth is not advisable in the salinity problem area like Kachua, Madab, Daudkandi.
	D2		1,237	0.047	3.5 ~ 6.0		5.0	240.60 (194 mm)	290.70 (235 mm)	174.40 (141 mm)			15 ~ 25	450 ~ 670	0.001~0.023	3.7 ~ 6.8	164 ~ 1,235	1.2 ~ 21.0	10 ~ 28	
	D3		240.00	0.038	2.5 ~ 3.5	1.0 ~ 3.5	4.0	24.20 (101 mm)	36.50 (152 mm)	21.90 (91 mm)	10 ~ 28	45 ~ 70		550 ~ 670	0.01~0.023	6.0 ~ 7.0	213 ~ 339	1.0 ~ 5.0	13 ~ 38	Area is moderately suitable for further development of shallow/deep tube- well (sinking of STW/DTW side by side within the same area is not advisable). Most of the area has good water quality than other parts of the district.
	D4		120.00	0.031	3.5 ~ 6.0	3.5 ~ 4.5	5.5	14.80 (123 mm)	20.10 (167 mm)	12.50 (104 mm)	1 ~ 28	15 ~ 70	15 ~ 80	450 ~580	0.01 ~ 0.13	2.2 ~ 9.6	174 ~ 339	1.0 ~ 5.0	8 ~ 39	

Notes :

1. Composite Aquifer : Comprises of the layer from the bottom of the upper silte and clay up to the top of main aquifer, a finer aquifer exists consisting of very fine sand interbedded and mixed with fine sand and silt and clay. Thickness of such aquifer varies from 13m to 63m (with few exception). Hand tube wells and dug wells are generally tapping water from this aquifer limited supply.

2. Main Aquifer : is situated below the composite aquifer which is a layer of medium sand with some fine sand. The thiskness of this aquifer varies from 15m to 20m (with few exceptions) STWs/DTWs are generally developmed in this zone.

3 (a) Zone : Bangladesh has been classifed into 4-broad zones based on percent thickness of coarser materials (main aquifer) Viz, A = 75 to 100%, B = 50 to 75%, C = 25 to 50% and D = 0 to 25%.

3 (b) Sub-Zone : is based on maximum depth to water table from land-surface water table fluctuation, thickness of upper silt and clay depth to top of main aquifer.

4. The study is based on available hydrogeological data, may be improved with availability of more data.

5. The spacing of tube well may be based on actual and/or potential recharge (Col. 9 to 11), aquifer characteristic (Col. 15 to 17) and existing Govt. policies.

6. Normally development of ground water by shallow and hand tube well by suction lift pumps is possible approximately up to 6 meter depth from land surface. For existing ground water below this depth up to expected potential recharge (Rp) limit upto approximately 8 to 9 meters, deep tube weel with turbine/submersible pump will be necessary.

7. Available recharge has been considered as 60% of potential recharge which means 40% of water has been lost before starting of the irrigation season in January as revealed from ground water level hydrographs.

8. Potential recharge has been calculated on the basis of maximum fluctuation attained or expected to attained.

9. Chemical Qualities : (MRL : Maximum Recommended Limit) << For drinking water and irrigation water >>

   (a) Iron (Fe) : 1 PPM Bangladesh Standard.
   0.1 PPM WHO Standard.

   (b) Chloride (Cl) : 600 PPM Bangladesh Standard.
   200 PPM WHO Standard

   (c) TDS : 1500 PPM Bangladesh Standard
   500 PPM WHO Standard

表 3.2　調査地区における現土地利用区分

Land Use Category	Kachua		Nabinagar		Bancharanpur		Debidwar		Total	
	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)	(ha)	(%)
1. Agricultural Land										
1.1 Triple Cropping	0		6,850		0		9,930		16,920	
1.2 Triple and Double Cropping	950		9,590		0		6,670		17,480	
1.3 Double Cropping	7,050		270		14,340		2,980		22,770	
1.4 Double and Single Cropping	2,860		0		4,150		0		6,460	
1.5 Single Cropping	8,220		10,680		0		0		19,190	
Total Agricultural Land (1)	19,100	80.9	27,400	81.8	18,500	89.4	19,600	82.0	82,843	81.5
- Irrigated Land	6,800		10,000		7,400		8,200		32,400	
- Irrigation Intensity	36%		36%		40%		42%		39%	
2. Non-Agricultural Land, Homesteads and Roads	4,000	16.9	4,330	12.9	1,730	8.4	3,780	15.8	13,840	13.6
Total Land (1+2)	23,100	97.9	31,730	94.7	20,230	97.7	23,380	97.8	98,420	96.8
3. Surface Water										
3.1 Rivers and Streams	20		1,040		100		40		1,210	
3.2 Beel and Haors	0		0		310		0		310	
3.3 Ponds	480		730		370		470		2,060	
Total Surface Water (3)	500	2.1	1,770	5.3	470	2.3	520	2.2	3,280	3.2
Total	23,600	100.0	33,500	100.0	20,700	100.0	23,900	100.0	101,700	100.0

表 3.3　調査地区における米、畑作物の生産量（1/2）

Union	B Aus (L)			T Aus (L)			T Aus (Hyv)			B Aman (L)		
	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)
Kachua	3,216	2,277	0.71	1,168	872	0.75	2,032	4,498	2.21	6,666	7,550	1.13
Nabinagar	4,100	3,972	0.97	3,610	3,604	1.00	1,632	3,075	1.88	7,530	7,850	1.04
Bancharanpur	3,107	2,936	0.94	2,366	2,541	1.07	3,898	7,996	2.05	8,663	9,103	1.05
Debidwar	3,768	3,346	0.89	5,655	6,675	1.18	988	1,952	1.98	5,923	6,602	1.11
Total	14,191	12,531	0.88	12,799	13,692	1.07	8,550	17,521	2.05	28,782	31,105	1.08

Union	T Aman (L)			T Aman (Hyv)			Boro (L)			Boro (Hyv)		
	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)
Kachua	1,758	2,135	1.21	4,558	11,621	2.55	54	105	1.94	4,335	15,077	3.48
Nabinagar	2,200	2,991	1.36	1,456	3,627	2.49	540	1,493	2.76	14,210	45,234	3.18
Bancharanpur	691	991	1.43	1,125	2,736	2.43	306	696	2.27	1,863	6,316	3.39
Debidwar	2,157	2,798	1.30	13,944	38,093	2.73	0	0	#DIV/0!	5,305	18,910	3.56
Total	6,806	8,915	1.31	21,083	56,077	2.66	900	2,294	2.55	25,713	85,537	3.33

Union	Total Rice		
	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)
Kachua	23,787	44,135	1.86
Nabinagar	35,278	71,846	2.04
Bancharanpur	22,019	33,315	1.51
Debidwar	37,740	78,376	2.08
Total	118,824	227,672	1.92

表 3.3　調査地区における米、畑作物の生産量（2/2）

Union	Wheat			Jute			Potato			Musterd		
	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)
Kachua	3,280	7,395	2.25	815	1,637	2.01	3,007	55,350	18.41	1,082	1,048	0.97
Nabinagar	4,649	10,757	2.31	2,717	5,608	2.06	695	11,192	16.10	3,661	3,170	0.87
Bancharanpur	4,766	11,322	2.38	1,568	3,312	2.11	1,598	19,626	12.28	1,775	1,621	0.91
Debidwar	4,101	9,831	2.40	775	1,494	1.93	2,711	47,154	17.39	2,090	1,779	0.85
Total	16,796	39,305	2.34	5,875	12,051	2.05	8,011	133,322	16.64	8,608	7,618	0.88

Union	Til			Pulses			Chilli			Vagetable		
	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)
Kachua			#DIV/0!	3,112	2,145	0.69	150	170	1.13	600	12,380	20.63
Nabinagar	22	13	0.59	2,230	1,934	0.87	240	290	1.21	400	7,215	18.04
Bancharanpur	404	289	0.72	1,953	1,633	0.84	296	353	1.19	439	9,301	21.19
Debidwar	329	251	0.76	0	0	#DIV/0!	0	0	#DIV/0	1,209	22,619	18.71
Total	755	553	0.73	7,295	5,712	0.78	686	813	1.19	2,648	51,515	19.45

Union	Others			Total Upland Crop			Rice+Upland Crop		
	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)	Area (ha)	Total Prod. (Ton)	Av. Yield (T/ha)
Kachua				12,046	80,125		35,833	124,260	
Nabinagar	1,189	1,296		14,614	40,179		49,892	112,025	
Bancharanpur				12,799	47,457		34,818	80,772	
Debidwar				11,215	83,128		48,955	161,504	
Total	1,189	1,296		50,674	250,889		169,498	478,561	

表 3.4　各作物における改良種子使用分布

Year	Aus		Aman		Boro		Total Paddy	Wheat	Potato	Mustard	Winter Vegetable	Total
	LV	HYV	LV	HYV	LV	HYV						
I. Bangladesh												
1981-82	172	237	90	601	0	836	1,935	11,069	3,484	31	0	16,518
1982-83	108	451	71	1,260	2	1,086	2,978	13,402	2,611	92	3	19,086
1983-84	125	246	4	39	6	834	1,254	14,006	3,384	160	3	18,807
1984-85	130	108	190	1,687	10	1,206	3,331	19,422	3,296	49	4	26,102
1985-86	173	364	349	1,544	2	694	3,126	9,631	4,109	37	5	16,907
1986-87	110	392	35	1,808	9	1,285	3,639	12,514	4,012	58	7	20,229
1987-88	45	285	138	1,935	13	1,361	3,777	17,625	5,775	33	6	27,215
1988-89	82	399	196	2,195	5	1,831	4,708	18,852	7,396	99	7	31,062
Average	118	310	134	1,384	6	1,141	3,093	14,565	4,258	70	4	21,991
II. Greater Comilla												
1981-82	14	15	0	47	0	59	135	1,132	510	3	0	1,780
1982-83	2	32	5	118	0	62	219	913	440	4	0	1,577
1983-84	4	16	1	4	0	68	93	865	240	10	0	1,207
1984-85	5	7	30	210	0	40	292	1,177	498	1	0	1,968
1985-86	6	44	0	123	0	0	0	1,126	522	2	0	1,650
1986-87	15	30	2	204	0	134	386	1,142	358	3	0	1,889
1987-88	4	24	0	198	0	103	329	1,154	1,086	3	0	2,572
1988-89	12	27	13	238	0	90	380	1,787	1,215	8	1	3,391
Average	8	24	6	143	0	69	229	1,162	609	4	0	2,004
(% in nation)	(6.5)	(7.9)	(4.8)	(10.3)	(0.0)	(6.1)	(7.4)	(8.0)	(14.3)	(6.1)	(6.5)	(9.1)

Reamrks: LV-Local Variety
HYV-High Yielding Variety

表 3.5　小規模灌漑機器の建設費および水料金

Items / Upazila	Discharge	Average Depth of Well	Average Served Area	Total Construction Cost (Tk)	Cost per Acre (ha) Tk/Acre (ha)	Remarks
DTW	Q = 2 cfs = 57 l/s	90 m	Acre 60 (24 ha)	with steel screen 650,000 with PVC screen 550,000	10,800 (27,000)	
STW	Q = 0.5 ~ 0.75 cfs = 14~21 l/s	40 m	12 Acre (5 ha)	50,000	4,200 (10,000)	
LLP	Q = 1 cfs = 28 l/s	-	20 Acre (8 ha)	60,000	3,000 (7,500)	
	Q = 2 cfs = 57 l/s	-	40 Acre (16 ha)	90,000	2,300 (5,600)	

- Actual construction cost of DTW is Tk. 175,000 for about 70% of Govt. subsidy.

Items / Upazila	Upazila	Water Charge (Tk/Acre) 1989/90	1988/89	1987/88	Average Water Charge 1989/90	Remarks
DTW	KACHUA	1,300	1,300	1,300	(TK/ACRE)	
	DEBIDWAR	1,350	1,350	1,350		
	BANCHARMPUR	1,500	1,500	1,500		
	NABINAGAR	1,500	1,500	1,500	1,400	
STW	KACHUA	1,300	1,300	1,300		
	DEBIDWAR	1,800	1,650	1,650		
	BANCHARMPUR	1,500	1,500	1,400		
	NABINAGAR	1,800	1,800	1,700	1,500	
LLP	KACHUA	1,200	1,200	1,200		
	DEBIDWAR	1,200	1,200	1,200		
	BANCHARMPUR	1,200	1,200	1,100	1,200	
	NABINAGAR	900	900	850		

Source : Information form Upazila and BADC Officer

表 3.6　調査地区の洪水状況

Inundation Depth (m)	Bancharampur			Nabinagar			Debidwar			Kachua		
	Area	%	Duration	Area	%	Duration	Area	%	Duration	Area	%	Duration
	ha		month	ha		month	ha		month	ha		month
Fo (<0.3)	0	0	-	600	2	0 ~ 1.2	9600	49	0 ~ 1.3	3300	17	0 ~ 2.0
F1 (0.3 ~ 0.9)	500	3	1.2 ~ 3.6	1400	5	1.2 ~ 3.8	4800	24	1.3 ~ 2.3	2800	15	2.0 ~ 4.0
F2 (0.9 ~ 1.80	2800	15	3.6 ~ 5.0	3000	11	3.8 ~ 4.8	5200	27	2.3 ~ 3.4	9700	51	4.0 ~ 5.7
F3 (1.8 ~ 3.0)	8000	43	5.0 ~ 6.7	9600	35	4.8 ~ 6.8	0	0	-	3300	17	5.7 ~ 7.5
F4 (3.0<)	7200	39	6.7~	12800	47	6.8~	0	0	-	0	0	-
Total (Net Cultivated Area)	ha 18500	% 100		ha 27400	% 100		ha 19600	% 100		ha 19100	% 100	

表 3.7　協同組合融資の貸付状況

(TK. '000)

Upazila/ Type of Credit	Bancharampur			Nabinagar			Kachua			Debidwar			Total		
	Disbur-sement	No. of Borrower	Size of Loan	Disbur-sement	No. of Borrower	Size of Loan	Disbur-sement	No. of Borrower	Size of Loan	Disbur-sement	No. of Borrower	Size of Loan	Disbur-sement	No. of Borrower	Size of Loan
1. Crop Loan	669	136	4.9	1,030	196	5.3	2,934	7,510	0.4	67	286	0.2	4,700	8,128	0.6
2. Irrigation Equipment	1,142	80	14.3	1,702	13	130.9	33	30	1.1	2,251	14	160.8	5,128	137	37.4
3. Pond Fisheries	32	1	32.0	0	0	0	88	10	8.8	49	3	16.3	169	14	12.1
4. Draft Animal	0	0	0	0	0	0	0	0	0	457	17	26.9	457	17	26.9
5. Small Trading	0	0	0	233	56	4.2	1,128	51	22.1	185	17	10.9	1,546	124	12.5
6. Rural Housing	60	1	60.0	0	0	0	195	3	65.0	0	0		255	4	63.8
Total	1,903	218	8.7	2,965	265	11.2	4,378	7,604	0.6	3,009	337	8.9	12,255	8,424	1.5

表 3.8　単位組合別融資および返済状況

Upazila/ Primary Society		Bancharampur			Nabinagar			Kachua			Debidwar			Total	
		Disbursement		Rate of	Disbursement		Rate of	Disbursement		Rate of	Disbursement		Rate of	Disbursement	
		Tk '000	%	Recovery (%)	Tk '000	%	Recovery (%)	Tk '000	%	Recovery (%)	Tk '000	%	Recovery (%)	Tk '000	%
KSS	1987/88	1,703	73.9	64.1	2,164	93.5	71.0	2,069	95.4	74.7	1,331	76.5	55.8	7,267	85.3
	1988/89	2,099	78.1	69.9	1,830	93.2	68.6	1,471	82.6	67.0	1,082	65.6	47.2	6,595	80.5
	1989/90	1,420	68.8	66.5	1,299	86.2	63.6	2,649	85.2	64.8	680	52.6	50.0	6,404	76.9
	Average	1,741	74.0	67.0	1,764	91.5	68.3	2,063	87.6	68.2	1,031	66.0	51.2	6,755	80.9
BSS	1987/88	420	18.2	65.0	113	4.9	71.4	67	3.1	78.2	256	14.7	87.5	856	10.0
	1988/89	236	8.8	69.0	79	4.0	71.4	291	16.3	73.6	382	23.1	81.4	988	12.1
	1989/90	199	9.6	61.3	168	11.1	76.7	379	12.2	74.0	417	32.2	93.3	1,163	14.0
	Average	285	12.1	64.9	120	6.2	72.3	246	10.5	74.9	352	22.6	87.3	1,002	12.0
MSS/MBSS	1987/88	181	7.9	62.4	37	1.6	92.1	33	1.5	88.8	152	8.8	92.2	403	4.7
	1988/89	352	13.1	87.9	55	2.8	77.7	20	1.1	86.6	187	11.3	88.9	614	7.4
	1989/90	447	21.6	69.5	41	2.7	85.1	81	2.6	79.3	196	15.2	91.0	765	4.1
	Average	327	13.9	72.1	44	2.3	84.4	45	1.9	85.8	178	11.4	90.6	594	7.1
Total	1987/88	2,304	100.0	64.2	2,314	100.0	71.7	2,169	100.0	75.2	1,739	100.0	64.8	8,526	100.0
	1988/89	2,687	100.0	71.0	1,964	100.0	69.6	1,782	100.0	67.7	1,651	100.0	58.4	8,193	100.0
	1989/90	2,066	100.0	66.1	1,508	100.0	66.0	3,109	100.0	65.3	1,293	100.0	64.4	8,332	100.0
	Average	2,352	100.0	67.2	1,929	100.0	69.6	2,353	100.0	68.8	1,561	100.0	62.5	8,350	100.0

表 3.9 調査地区における現在の食糧の需要と供給

Item		Unit	Nabinagar	Bancharanpur	Debidwar	Kachua
Population (1990 estimation)		'000	401.1	259.1	340.8	297.4
I. Rice	135.0 kg/capita*					
(1) Paddy Production		'000 t	71.8	33.3	78.4	44.1
(2) Seed, Waste and others	(1) x 0.1	'000 t	7.2	3.3	7.8	4.4
(3) Net Paddy Production	(1)-(2)	'000 t	64.6	30.0	70.6	39.7
(4) Rice Production	(3) x 63%	'000 t	40.7	18.9	44.5	25.0
(5) Per Capita Availability	(4)/Population	kg/capita	101.5	72.9	130.6	84.1
(6) Potential Demand	135 kg x Population	'000 t	54.1	35.0	46.0	40.1
(7) Balance	(4)-(6)	'000 t	-13.4	-16.1	-1.5	-15.1
II. Wheat	30.0 kg/capita*					
(1) Wheat Production		'000 t	10.8	11.3	9.8	7.4
(2) Seed, Waste and others	(1) x 0.1	'000 t	1.1	1.1	1.0	0.7
(3) Net Wheat Production	(1)-(2)	'000 t	9.7	10.2	8.8	6.7
(4) Per Capita Availability	(3)/Population	kg/capita	24.2	39.4	25.8	22.5
(5) Potential Demand	30 kg x Population	'000 t	12.0	7.8	10.2	8.9
(6) Balance	(3)-(5)	kg/capita	-2.3	2	-1.4	-2.2
III. Vegetables /_1	36.5 kg/capita*					
(1) Vegetable Production		'000 t	9.1	10.9	22.6	14.5
(2) Seed, Waste and others	(1) x 0.1	'000 t	0.9	1.1	2.3	1.5
(3) Net Vegetable Production	(1)-(2)	'000 t	8.2	9.8	20.3	13.0
(4) Per Capita Availability	(3)/Population	kg/capita	20.4	37.8	59.6	43.7
(5) Potential Demand	36.5 kg x Population	'000 t	14.6	9.5	12.4	10.9
(6) Balance	(3)-(5)	'000 t	-6.4	0.3	7.9	2.1
VI. Edible Oil	6.0 kg/capita*					
(1) Oil Seed Production		'000 t	3.2	1.9	2.0	1.0
(2) Seed, Waste and others	(1) x 0.1	'000 t	0.3	0.2	0.2	0.1
(3) Net Oil Seed Production	(1)-(2)	'000 t	2.9	1.7	1.8	0.9
(4) Oil Production	(3) x 30%	'000 t	0.9	0.5	0.5	0.3
(5) Per Capita Availability	(4)/Population	kg/capita	2.2	1.9	1.5	1.0
(6) Potential Demand	6.0 kg x Population	'000 t	2.4	1.6	2.0	1.8
(7) Balance	(4)-(6)	'000 t	-1.5	-1.1	-1.5	-1.5
V. Meat	4.5 kg/capita*					
(1) Meat Production		t	372	237	485	414
(2) Waste and others	(1) x 0.1	t	37	24	49	41
(3) Net Meat Production	(1)-(2)	t	335	213	436	373
(4) Per Capita Availability	(3)/Population	kg/capita	0.8	0.8	1.3	1.3
(5) Potential Demand	4.5 x Population	t	1,805	1,166	1,534	1,338
(6) Balance	(3)-(5)	t	-1,470	-953	-1,098	-965
VI. Fish	14.0 kg/capita*					
(1) Fish Production		'000 t	6.0	1.9	0.7	0.7
(2) Waste and others	(1) x 0.1	'000 t	0.6	0.2	0.1	0.1
(3) Net Fish Production	(1)-(2)	'000 t	5.4	1.7	0.6	0.6
(4) Per Capita Availability	(3)/Population	kg/capita	13.5	6.6	1.8	2.0
(5) Potential Demand	14.0 x Population	'000 t	5.6	3.6	4.8	4.2
(6) Balance	(3)-(5)	'000 t	-0.2	-1.9	-4.2	-3.6

Note : * ; Consumption rate per year recommended by the Bangladesh Nutrition Institute, University of Dhaka
/_1;Excluding potato

表 4.1 計画作物生産 (1/2)

1. Projection of Cropped Area by Crop

Unit: ha

Crop	1990	1995	2000	2010
1. Rice				
1.1 B. Aus (LV)	14,191	14,200	14,200	14,200
1.2 T. Aus (LV)	12,799	6,400	0	0
1.3 T. Aus (HYV)	8,550	15,000	21,300	21,300
1.4 B. Aman (LV)	28,782	28,800	28,800	28,800
1.5 T. Aman (LV)	6,806	3,400	0	0
1.6 T. Aman (HYV)	21,083	24,500	27,900	27,900
1.7 Boro (LV)	900	0	0	0
1.8 Boro (HYV)	25,713	30,100	33,100	33,100
Total (1)	118,824	122,300	125,300	125,300
Increased Area	0	3,400	3,100	0
2. Others				
2.1 Wheat	16,796	16,800	16,800	16,800
2.2 Jute	5,875	5,900	5,900	5,900
2.3 Potato	8,011	8,300	8,700	9,000
2.4 Mustard	8,608	9,000	9,300	9,700
2.5 Sesame	755	800	800	800
2.6 Pulses	7,295	7,600	7,900	8,200
2.7 Chilli	686	700	700	700
2.8 Vegetables	2,648	2,600	2,600	2,600
2.9 Others	1,189	1,200	1,200	1,200
Total (2)	51,863	52,900	53,900	55,000
Increased Area	0	1,000	1,000	1,100
Total Crop Production	170,687	175,200	179,200	180,300

2. Target Unit Yield by Crop

Unit: ton/ha

	1990	1995	2000	2010
1. Rice				
1.1 B. Aus (LV)	0.9	1.2	1.5	1.5
1.2 T. Aus (LV)	1.1	1.8	2.5	2.5
1.3 T. Aus (HYV)	2.1	2.6	3.0	3.0
1.4 B. Aman (LV)	1.1	1.1	1.1	1.1
1.5 T. Aman (LV)	1.3	2.1	2.8	2.8
1.6 T. Aman (HYV)	2.7	3.4	4.0	4.0
1.7 Boro (LV)	2.5	2.6	2.7	2.7
1.8 Boro (HYV)	3.3	3.9	4.5	4.5
2. Others				
2.1 Wheat	2.3	2.9	3.5	3.5
2.2 Jute	1.8	2.1	2.4	2.4
2.3 Potato	11.0	13.0	15.0	15.0
2.4 Mustard	0.9	1.1	1.3	1.3
2.5 Sesame	0.7	0.9	1.0	1.0
2.6 Pulses	0.8	1.0	1.2	1.2
2.7 Chilli	1.2	1.6	2.0	2.0
2.8 Vegetables	11.8	12.9	14.0	14.0
2.9 Other (Onion)	8.1	11.6	15.0	15.0

表 4.1　計画作物生産 (2/2)

3. Projection of Crop Production by Crop

Unit: 1000 ton

Crop	1990	1995	2000	2010
1. Rice				
1.1 B. Aus (LV)	12.8	17.0	21.3	21.3
1.2 T. Aus (LV)	14.1	11.5	0.0	0.0
1.3 T. Aus (HYV)	18.0	38.3	63.9	63.9
1.4 B. Aman (LV)	31.7	31.7	31.7	31.7
1.5 T. Aman (LV)	8.8	7.0	0.0	0.0
1.6 T. Aman (HYV)	56.9	82.1	111.6	111.6
1.7 Boro (LV)	2.3	0.0	0.0	0.0
1.8 Boro (HYV)	84.9	117.4	149.0	149.0
Total (1)	229.34	304.93	377.43	377.43
2. Others				
2.1 Wheat	38.6	48.7	58.8	58.8
2.2 Jute	10.6	12.4	14.2	14.2
2.3 Potato	88.1	107.9	130.5	135.0
2.4 Mustard	7.7	9.9	12.1	12.6
2.5 Sesame	0.5	0.7	0.8	0.8
2.6 Pulses	5.8	7.6	9.5	9.8
2.7 Chilli	0.8	1.1	1.4	1.4
2.8 Vegetables	31.2	33.5	36.4	36.4
2.9 Others	9.6	13.9	18.0	18.0

表 4.2　調査地区における農産部門の付加価値

I. CROP SUB-SECTOR

Crop	1990 Cropped Area (ha)	1990 Value Added per ha (Tk/ha)	1990 Total VA (Tk mil)	1995 Cropped Area (ha)	1995 Value Added per ha (Tk/ha)	1995 Total VA (Tk mil)	2000 Cropped Area (ha)	2000 Value Added per ha (Tk/ha)	2000 Total VA (Tk mil)	Annual Growth Rate 1990-1995 (% pa)	Annual Growth Rate 1995-2000 (% pa)
1. Rice											
1.1 B. Aus (LV)	14,191	5,054	72	14,200	5,864	83	14,200	6,674	95		
1.2 T. Aus (LV)	12,799	6,582	84	6,400	9,620	62					
1.3 T. Aus (HYV)	8,550	13,154	112	14,900	13,684	204	21,300	14,213	303		
1.4 B. Aman (LV)	28,782	7,404	213	28,800	8,342	240	28,800	9,260	267		
1.5 T. Aman (LV)	6,806	8,497	58	3,400	10,965	37					
1.6 T. Aman (HYV)	21,083	14,504	306	24,500	16,187	397	27,900	17,869	499		
1.7 Boro (LV)	900	12,640	11	0		0					
1.8 Boro (HYV)	25,713	14,962	385	30,100	16,743	504	33,100	18,523	613		
Total (1)	118,824		1,241	122,300		1,527	125,300		1,776	4.2	3.1
2. Others											
2.1 Wheat	16,796	6,422	108	16,800	9,778	164	16,800	13,134	221		
2.2 Jute	5,875	11,617	68	5,900	13,381	79	5,900	15,144	89		
2.3 Potato	8,011	8,077	65	8,300	9,201	76	8,700	10,325	90		
2.4 Mustard	8,608	6,859	59	9,000	7,208	65	9,300	7,557	70		
2.5 Sesame	755	6,580	5	800	7,498	6	800	8,416	7		
2.6 Pulses	7,295	4,643	34	7,600	5,003	38	7,900	5,363	42		
2.7 Chilli	686	16,769	12	700	23,035	16	700	29,300	21		
2.8 Vegetables	2,648	54,131	143	2,600	57,277	149	3,800	60,422	230		
2.9 Others	1,189	42,755	51	1,200	51,589	62					
Total (2)	51,863		544	52,900		655	53,900		769	3.8	3.3
Total Crop Production			1,786			2,182			2,546	4.1	3.1

II. LIVESTOCK SUB-SECTOR

Animal	1990 Production (ton)	1990 Value Added per head (Tk/ton)	1990 Total VA (Tk Mil)	1995 Production (ton)	1995 Value Added per head (Tk/ton)	1995 Total VA (Tk Mil)	2000 Production (ton)	2000 Value Added per head (Tk/ton)	2000 Total VA (Tk Mil)	Annual Growth Rate 1990-1995 (% pa)	Annual Growth Rate 1995-2000 (% pa)
1. Meet											
1.1 Beef	489	50,000	24	612	50,000	31	735	50,000	37		
1.2 Sheep & Goat	135	50,000	7	187	50,000	9	238	50,000	12		
1.3 Poltry	884	35,000	31	939	35,000	33	993	35,000	35		
Total (1)	1,508		62	1,737		73	1,966		83	3.2	2.8
2. Milk											
2.1 Cow	6,392	10,000	64	7,571	10,000	76	8,750	10,000	88		
2.2 Sheep & Goat	337	10,000	3	624	10,000	6	910	10,000	9		
Total (2)	6,729		67	8,195		82	9,660		97	4.0	3.3
3. Eggs (1000 nos.)											
3.1 Duck	9,872	2,000	20	13,051	2,000	26	16,230	2,000	32		
3.2 Chicken	8,193	2,000	16	10,847	2,000	22	13,500	2,000	27		
	18,065		36	23,898		48	29,730		59	5.8	4.5
Total Livestock Production			166			203			239	4.1	3.4

III. FISH SUB-SECTOR

Fishery	1990 Production (ton)	1990 Value Added per ton (Tk/ton)	1990 Total VA (Tk mil)	1995 Production (ton)	1995 Value Added per ton (Tk/ton)	1995 Total VA (Tk mil)	2000 Production (ton)	2000 Value Added per ton (Tk/ton)	2000 Total VA (Tk mil)	Annual Growth Rate 1990-1995 (% pa)	Annual Growth Rate 1995-2000 (% pa)
1. Open Water Fishery	6,687	40,000	267	6,882	40,000	275	10,486	40,000	419	0.6	8.8
2. Close Water Fishery	2,567	38,900	100	4,794	37,500	180	6,713	37,500	252	12.5	7.0
Total Fish Production			367			455			671	4.4	8.1

IV. AGRICULTURE SECTOR TOTAL

Sub-Sector	Unit	1990	1995	2000	90-95	95-00
I. Crop Production	Tk Million	1,786	2,182	2,546	4.1	3.1
II. Livestock	Tk Million	166	203	239	4.1	3.4
III. Fishery	Tk Million	367	455	671	4.4	8.1
Sector Total	Tk Million	2,319	2,840	3,456	4.1	4.0
Total Population	1000 person	1,300	1,447	1,611	2.2	2.2
Per Capita Value Added of Agricultural Sector	Tk/person	1,783	1,963	2,145	1.9	1.8

表 4.3　農業部門からの雇用機会の創設

I. CROP SUB-SECTOR

Crop	1990 Cropped Area (ha)	1990 Labour Require. (MD/ha)	1990 Total MD (1000MD)	1995 Cropped Area (ha)	1995 Labour Require. (MD/ha)	1995 Total* MD (1000MD)	2000 Cropped Area (ha)	2000 Labour Require. (MD/ha)	2000 Total* MD (1000MD)	Annual Growth Rate 1990-1995 (% pa)	Annual Growth Rate 1995-2000 (% pa)
1. Rice											
1.1 B. Aus (LV)	14,191	120	1,703	14,200	100	1,704	14,200		0		
1.2 T. Aus (LV)	12,799	170	2,175	6,400	150	1,152		100	0		
1.3 T. Aus (HYV)	8,550	145	1,240	14,900	150	2,682	21,300	150	4,154		
1.4 B. Aman (LV)	28,782	100	2,878	28,800	100	3,456	28,800	150	5,616		
1.5 T. Aman (LV)	6,806	100	681	3,400	150	612		100	0		
1.6 T. Aman (HYV)	21,083	155	3,268	24,500	150	4,410	27,900	150	5,441		
1.7 Boro (LV)	900	94	85	0	150	0		150	0		
1.8 Boro (HYV)	25,713	94	2,417	30,100	150	5,418	33,100	150	6,455		
Total (1)	118,824		14,447	122,300		19,434	125,300	150	21,665	6.1	2.2
2. Others											
2.1 Wheat	16,796	120	2,016	16,800	100	2,016	16,800	100	2,184		
2.2 Jute	5,875	185	1,087	5,900	160	1,133	5,900	160	1,227		
2.3 Potato	8,011	210	1,682	8,300	140	1,394	8,700	140	1,583		
2.4 Mustard	8,608	61	525	9,000	100	1,080	9,300	100	1,209		
2.5 Sesame	755	47	35	800	100	96	800	100	104		
2.6 Pulses	7,295	50	365	7,600	100	912	7,900	100	1,027		
2.7 Chilli	686	162	111	700	200	168	700	200	182		
2.8 Vegetables	2,648	220	583	2,600	300	936	3,800	300	1,482		
2.9 Others	1,189	210	250	1,200	300	432		300	0		
Total (2)	51,863		6,653	52,900		8,167	53,900		8,999	4.2	2.0
Total Crop Production			21,100			27,601			30,663	5.5	2.1

Remarks: * and **: including miscellaneos of 20% and 30% of net requirement for additional labour requirmentdue to increased yield.

II. LIVESTOCK SUB-SECTOR

Animal	1990 Population (heads)	1990 Labour Require. (MD/head)	1990 Total MD (1000MD)	1995 Production (ton)	1995 Labour Require. (MD/ha)	1995 Total MD (1000MD)	2000 Production (ton)	2000 Labour Require. (MD/ha)	2000 Total MD (1000MD)	Annual Growth Rate 1990-1995 (% pa)	Annual Growth Rate 1995-2000 (% pa)
1. Cattle	319,611	88	27,998	334800	88	29,328	350000	88	30,660		
2. Sheep	7,636	18	134	7300	18	128	7,000	18	123		
3. Goat	168,529	9	1,476	175200	9	1,535	182,000	9	1,594		
4. Ducks	493,606	9	4,324	517300	9	4,532	541,000	9	4,739		
5. Chickens	819,282	9	7,177	859600	9	7,530	900,000	9	7,884	1.0	0.9
Total Livestock Production			41,109			43,053			45,000	0.9	0.9

Reamrks:
Labour Requirement　Cattle: 2 hrs/head/day
Shhep and Goat: 2 hrs/5 heads/day
Poultry: 2 hrs/10 heads/day
Working day: 365 days/year
Daily working hours: 10 hrs/day

III. FISH SUB-SECTOR

Fishery	1990 Total MD (1000MD)	1995 Total MD (1000MD)	2000 Total MD (1000MD)	Annual Growth Rate 1990-1995 (% pa)	Annual Growth Rate 1995-2000 (% pa)
1. Open Water Fishery	5,808	6,569	7,330	2.5	2.2
2. Close Water Fishery	764	966	1,167	4.8	3.9
Total Fish Production	6,572	7,535	8,497	2.8	2.4

IV. AGRICULTURE SECTOR TOTAL

Sub-Sector	Unit	1990	1995	2000	90-95	95-00
I. Crop Production	MD million	21.1	27.6	30.7	5.5	2.1
II. Livestock	MD million	41.1	43.1	45.0	0.9	0.9
III. Fishery	MD million	6.6	7.5	8.5	2.8	2.4
Sector Total	MD million	68.8	78.2	84.2	2.6	1.5
Population Total (1000)		1,300	1,447	1,791	2.2	4.4
Labour Force (1000 persons)		416	492	581	3.4	3.4
Labour Force (Million MD) (Workable day: 250 days/year)		104	123	145	3.4	3.4
Labour-worce Abrouption Ration		66%	64%	58%		

表 5.1　灌漑面積の拡大

Bancharampur					Nabinagar					Kachua					Remarks
Rank	Canal (Khal) Name		Command Area	Canal Length	Rank	Canal (Khal) Name		Command Area	Canal Length	Rank	Canal (Khal) Name		Command Area	Canal Length	
			ha	km				ha	km				ha	km	
1	Kathakhali	1	70	9	1	Majikata	1	400	10	1	Bealjuri	P1	150	12.5	Control under BWDB
										2	Sachar	P2	-	(9.0)	"
2	Dulbanaga	2	600	13	2	Jafarpur	2	440	9	3	Sachar-Hajiganj	S1	250	16.0	
3	Dairaarchar	3	300	8	3	Laur Fathepur	3	200	8	4	Dhamala-Keylain	S2	-	(3.5)	NA
										5	Karaya-Ragunathpur	S3	100	6.0	
4	Murader	4	300	7	4	Bikhali	4	100	8	6	Noadda-Charatbanga	S4	100	12.0	
										7	Bitara-Aliara	S5	100	9.0	
5	Dariakandi Bara	5	70	4	5	Adalmanil Chat	5	100	7	8	Uzani-Tetulia	S6	50	4.0	On-going improve-
										9	Sachar-Bayek	S7	-	(3.5)	ment under BWDB
6	Nandalia	6	80	5	6	Bash	6	400	6	10	Modhnpur-Bareiara	S8	-	(4.0)	"
										11	Amujau	S9	-	(6.0)	NA
7	Hassinpur	7	180	5	7	Birugan	7	380	5	12	Baichara	S10	100	3.5	
										13	Batashar-Rahimanagar	S11	-	(7.0)	NA
8	Mandalia	8	400	5	8	Begduhar	8	300	5	14	Sreerampur-Karaya	S12	-	(4.5)	"
										15	Udara	S13	100	7.5	
9	Pahariakandi	9	30	3	9	Dewjuri	9	260	12	16	Fathepur	S14	-	3.0	NA
										17	Kajkamta-Komorkasha	S15	50	4.5	
10	Kalakandisona	10	70	3	10	Samegram	10	100	10	18	Bachaia	S16	50	3.5	
										19	Singua	S17	-	(3.0)	NA
11	Mara Titas	11	100	5	11	Rasullabad	11	360	10	20	Pula-Budhumda	S18	-	(2.5)	"
										21	Atishar	S19	50	2.0	
					12	Rasulpur	12	160	6	22	Akania-Nasirpur	S20	-	(5.0)	NA
										23	Masnigacha-Amujan	S21	-	(3.5)	"
										24	Jagatpur-Pepolkara	S22	-	(3.5)	"
Total			ha 2200	km 67	Total			ha 3200	km 96	Total			ha 1100	km (55) 83.5 138.5	

Note: 1) Canal Ranking for Upazila Proposal.
2) Commad area exculding the existing irrigated area by LLPs using.
3) NA = Not available for the gravity water use depending on the current low water level of the Dhanagoda and Dakatia rivers

表 5.2　半集約的養魚振興モデル計画

	Year 1	Year 2	Year 3	Year 4	Year 5
New Group	5	5	5	7	7
Total No. of Group	5	10	15	22	29
Total Members	150	300	450	660	870
GROW OUT (6-7 months)					
Total Area (ha)	20	40	60	88	116
Fingerling Stocking Required (million)	0.12	0.24	0.36	0.53	0.70
Harvest Size (g)	500	500	500	500	500
Total Production (Ton)	42	84	126	185	244
NURSING					
Spawn Required					
Nos. (Million)	0.4	0.8	1.2	1.8	2.3
Weight (Kg)	0.8	1.6	2.4	3.6	4.6

	Year 6	Year 7	Year 8	Year 9	Year 10
New Group	8	8	8	9	8
Total No. of Group	37	45	53	62	70
Total Members	1110	1350	1590	1860	2100
GROW OUT (6-7 months)					
Total Area (ha)	148	180	212	248	280
Fingerling Stocking Required (million)	0.89	1.08	1.27	1.49	1.68
Harvest Size (g)	500	500	500	500	500
Total Production (Ton)	311	378	445	521	588
NURSING					
Spawn Required					
Nos. (Million)	3.0	3.6	4.3	5.0	5.6
Weight (Kg)	6.0	7.2	8.6	10.0	11.2

Remarks:
1) Stocking rate for one hectare pond is 6000 of mixed fingerlings weighing approximately 5 g each (5-6 cm).
2) Survival rate up to harvest size is 70 percent.
3) Spawn required for nursery operation by the groups where fingerlings are not available, is estimated at 30 percent survival from spawn to 5 g size fingerling. One kilogram of spawn consists of about 500,000 fry. (Spawn is sold by weight and not by number in Bangladesh.)

表 5.3　農家での集約的養鶏・養魚振興モデル計画

Pond Size	1000 m^2
Culture Period	5-6 months (Approx. 165 days)
Fingerlings Required (Nos.)	600
Layer Chicken (Nos.)	90
Chicken	
Survival rate	98%
Harvest size	1.5 kg/chicken
Total production	132 kg (88 chicken)
Eggs (Nos.)	10,164 (70% egg laying rate)
Fish	
Survival rate	70%
Harvest size	500 g
Total production	210 kg

Remarks: 1) Stocking rate of fingerlings weighing is 6000/ha at approximately 5 g each (5-6 cm).
2) Layer chicken of less than 4 months old (less than one kilogram) and ready for egg laying.

表 5.4　村・地方マーケット倉庫維持管理に関する収支表

Item	Price Increase(%)	Formula	Unit	Village Godown (100 t) 60	40	20	Local Market Godown (500 t) 60	40	20
I. Income									
A. With Godown									
1. Price for Sale			Tk/kg	6.9	6.0	5.2	6.9	6.0	5.2
2. Sales Income	x Tk	(1)	'000Tk	690	600	520	3,450	3,000	2,600
B. Without Godown									
3. Sales Income	x Tk	4.3 /kg	'000Tk	430	430	430	2,150	2,150	2,150
C. Gross Incremental Income		(2) - (4)	'000Tk	260	170	90	1,300	850	450
II. Cost for Godown Operation			'000Tk						
4. Handling	x Tk	40 /t		4	4	4	20	20	20
5. Storage	x Tk	240 /t		24	24	24	120	120	120
6. Pesticide and Fumigation	x Tk	20 /t		2	2	2	10	10	10
7. Materials	x Tk	30 /t		3	3	3	15	15	15
8. Repair /_1				10	10	10	60	60	60
9. Sub-total		(4+5+6+7+8)		43	43	43	225	225	225
10. Interest of Credit/_2		(4) x 0.9 x 0.08		31	31	31	155	155	155
11. Depriciation Cost/_3				17	17	17	100	100	100
III. Net Income									
D. Case 1									
12. Total		(C)-(9)	'000Tk	217	127	47	1,075	625	225
13. Per Producers/_4		(12)/100 : (12)/500	Tk	2,170	1,270	470	2,150	1,250	450
E. Case 2									
14. Total		(C)-(9+10)	'000Tk	186	96	16	920	470	70
15. Per Producers		(14)/100 : (14)/500	Tk	1,860	960	160	1,840	940	140
F. Case 3									
16. Total		(C)-(9+10+11)	'000Tk	169	79	-1	820	370	-30
17. Per Producers		(16)/100 : (16)/500	Tk	1,690	790	-10	1,640	740	-60

Note : /_1 ; Annual repair cost is estimated at 2 % of the construction cost of Tk 500 x10^3 for 100 tons and Tk 3,000 x10^3 for 500 tons.

/_2 ; The half year interest of 8% is applied to the credit amount which covers 90% of (4) sales income without godown.

/_3 ; The useful life of 30 years is applied.

/_4 ; One ton of food grains is procured from each member equally.

表 5.5　道路の現況と開発計画（カチュア郡　1/2）

NAME OF ROAD	EXISTING CONDITION			MODEL PLAN			REMARKS
	LENGTH (in Kilometer)	TYPE	No. of Structures Required	LENGTH (in Kilometer)	TYPE	No. Structures To be Const./ Rehabili.	
FB - A Kachua- Kalipara Road	13.29	BC	14			*	Under
FB - B Kachua- Upazila Parishad Road	1.70	BC	2	1.70	BC	2	rehabilitation
FB - B Kachua- Sachar G.C.C Road	15.51	E	26	15.51	BC	26	
RR - 1 Kachua- Kashimpur Road	14.50	E	13	14.50	E	13	
RR - 2 Kachua- Ragunthpur Road	6.50	E	15	6.50	E	15	
RR - 3 Kachua- Nowabpur Road	8.00	E	10	8.00	E	10	
RR - 4 Sachar- Amirabad Road	5.50	E	9	5.50	BC	9	
RR - 5 Kachua- Teguria Road	12.00	E	14	12.00	E	14	
RR - 6 Pipulkora-Rahimanagor Road	20.00	E	18	20.00	E	18	
RR - 7 Baratolagoan-Monoharpur Road	11.50	E	14	11.50	E	14	
RR - 8 Palakhal- Aliara Road	6.50	E	12	6.50	E	12	
RR - 9 Kachua- Patharish Road	11.00	E	15	11.00	E	15	
RR - 10 Palgiri- Darbeshgonj Road	8.00	E	14	8.00	E	14	
RR - 11 Uzani- Boxgonj Road	9.00	E	14	9.00	E	14	
RR - 12 Layamehaer- Aliara Road	11.00	E	15	11.00	E	15	
RR - 13 Sachar- Modhupur Road	5.50	E	8	5.50	E	8	
RR - 14 Sachar-Ragdoil-Bayek Road	8.00	E	12	8.00	E	12	
RR - 15 Palakhal- Kadla Road	6.50	E	12			**	Dropped in
RR - 16 Bachaya- Prashannakap Road	6.50	E	11	6.50	E	11	first screening
RR - 17 Baraiara- Modhupur Road	5.50	E	14	5.50	E	14	step
RR - 18 D.C. Road- Jagotpur Road	8.00	E	5	8.00	E	5	

表 5.5　道路の現況と開発計画（カチュア郡　2/2）

NAME OF ROAD	EXISTING CONDITION			MODEL PLAN			REMARKS
	LENGTH (in Kilometer)	TYPE	No. of Structures Required	LENGTH (in Kilometer)	TYPE	No. Structures To be Const.	
RR - 19 Amojan- Poyalgacha Road	10.00	E	8	10.00	E	8	
RR - 20 Batapokari- Nindpur Road	8.00	E	20	8.00	E	20	
RR - 21 Hasihnpur-Darbeshgonj Road	8.00	E	15	8.00	E	15	
RR - 22 Uzani- Singdda Road	8.00	E	15	8.00	E	15	
RR - 23 Ragunathpur- Modhupur Road	8.50	E	10	8.50	E	10	
RR - 24 Kachua-College-Betpur Road	5.00	E	8				**
RR - 25 Ragdoil- Gograbari Road	4.00	E	8	4.00	E	8	
RR - 26 Akania- Dumoria Road	8.00	E	10	8.00	E	10	
RR - 27 Pathair-Aliara Road	6.50	E	8	6.50	E	8	
RR - 28 Palakhal- Charatbanga Road	6.50	E	12	6.50	E	12	
RR - 29 Tetua- Borochow Road	3.50	E	12				**
RR - 30 Rahimanagor-Paranpur Road	5.00	E	8	5.00	E	8	
RR - 31 Monohorpur- Lowkora Road	6.50	E	12	6.50	E	12	
RR - 32 Koa- Domoria Road	3.50	E	5	3.50	E	5	
RR - 33 Koraish- Khidda Road	3.50	E	6	3.50	E	6	
RR - 34 Monkhola- Kailine Road	2.50	E	9	2.50	E	9	
RR - 35 Hossainpur-Changini Road	13.25	E	10				**
RR - 36 Rahima Nagor Subidpur via Meair Bazar	13.00	E	9	13.00	E	9	
TOTAL	317.25		452	275.71		396	

表 5.5　道路の現況と開発計画（ナビナガール郡　1/2）

	NAME OF ROAD	EXISTING CONDITION LENGTH (in Kilometer)	TYPE	No. of Structures Required	Existing	MODEL PLAN LENGTH (in Kilometer)	TYPE	No. Structures To be Const./Rehabili.	REMARKS
FB - 1	Nabinagar - B.Baria	4.73	E	7	5	4.73	BC	2	
FB - 2	Nabinagar - Bancharampur	12.87	E	36	32	12.87	BC	4	
RR - 1	Kaitala College - Mohesh Road	9.00	E	8	0	9.00	E	8	
RR - 2	Jenudpur - Jamuala River	7.00	E	6	0	7.00	E	6	
RR - 3	Karaibari - Rashullabad	6.50	E	4	0	6.50	E	4	
RR - 4	Majiara Girl's School - Bitibishara	7.00	E	10	0	7.00	E	10	
RR - 5	Baishmuja Bazar - Gajirkandi via Birgoan	4.00	E	8	0	4.00	E	8	
RR - 6	Jenudpur - Bhaturiard	13.00	E	17	2	13.00	E	15	
RR - 7	Barikandi Launch Ghat - Jallird	8.00	E	13	6	8.00	E	7	
RR - 8	Jafarpur - Jamuna River	5.00	E	7	3	5.00	E	4	
RR - 9	Norshingpur - Chitti	3.50	E	3	0	3.50	E	3	
RR - 10	Link Road (R&H - Mohesh Road)	7.00	E	14	2	7.00	BC	12	
RR - 11	Lourfatapur - Kaligonj Bazar	5.00	E	7	0			**	Dropped in first
RR - 12	Dhari - Shreerapur - Lahari	3.50	E	3	0	3.50	E	3	screening step
RR - 13	Aliabad - Gopalpur	4.00	E	10	3	4.00	E	7	
RR - 14	Shamagram - Solimgonj	7.33	E	16	13	7.33	BC	3	
RR - 15	Mohesh Road - Goali - Rasulpur	19.50	E	34	17	19.50	BC	17	
RR - 16	Dashmouja - Jenudpur	4.50	E	7	0	4.50	E	7	
RR - 17	R&H Road - Kazimabad via Bolachang Bazar	4.00	E	4	0	4.00	E	4	
RR - 18	Raullahbad - Ratanpur via Mullah	6.00	E	6	0	6.00	E	6	
RR - 19	Nurjahanpur - Muktarampur	5.00	E	4	0	5.00	E	4	
RR - 20	Maniknagar Launch Ghat - Khagatoa Bazar	7.50	E	10	3	7.50	E	7	

表 5.5　道路の現況と開発計画（ナビナガール郡　2/2）

	NAME OF ROAD	EXISTING CONDITION LENGTH (in Kilometer)	TYPE	No. of Structures Required	Existing	MODEL PLAN LENGTH (in Kilometer)	TYPE	No. Structures To be Const./Rehabili.		REMARKS
RR - 21	Dhapunia - Shibpur High School	5.00	E	4	0				**	Dropped in first
RR - 22	Monipur - Natchar Bazar	12.00	E	13	0	12.00	E	13		screening step
RR - 23	Kaligoanj - Dobacchail	13.50	E	30	1	13.50	E	29		
RR - 24	Rajatpur - Goparpur South Para	4.50	E	6	0				**	
RR - 25	Krishnagar - Baluahat	2.00	E	2	0	2.00	E	2		
RR - 26	Nabinagar - Karimshah Bazar	5.50	E	4	0	5.50	E	4		
RR - 27	Alamnagaar - Charilapang - Islampur	9.00	E	10	2	9.00	E	8		
RR - 28	Bikgoan - Kadarkhala	3.50	E	4	0	3.50	E	4		
RR - 29	Shahapur Veternary Hospital - Kaligonj Dhobachal	3.00	E	5	0				**	
RR - 30	Bolachang Bazar - Nabinagar/Bancharampur Road via Belanagar	3.00	E	4	0					
RR - 31	Nabinagar - Aalamnagar	2.50	E	4	0	2.50	E	4		
RR - 32	Imambaril - Shardar via Narui	5.00	E	6	0	5.00	E	6		
RR - 33	Barail - Nilokhi	5.00	E	4	0				**	
RR - 34	Moheshpur Launch Ghat - Gori Goan via Bitgar	6.00	E	5	2	6.00	E	3		
RR - 35	Dhara Bannga - Solimgonj	2.50	E	4	0				**	
RR - 36	Konaghat - Maniknagar	7.50	E	10	3	7.50	E	7		
RR - 37	Durgarampur Launch Ghat - Keshorepur	6.00	E	5	0				**	
RR - 38	Lourfatepur - Hazipur	4.50	E	6	0					
RR - 39	Sshatmua - Rasullabad via Gaganathpur	7.50	E	7	0	7.50	E	7		
RR - 40	Kanikara - Merukuta Bazar via Bagaura	8.00	E	7	0	8.00	E	7		
RR - 41	Pandabnagar - Merkuta via Malal	4.50	E	6	0	4.50	E	6		
RR - 42	Kurichar - Boruhit	6.50	E	8	1	6.50	E	7		
RR - 43	Karaibari - Barikhala	4.00	E	4	0				**	
	TOTAL	284.43		392	95	241.93		248		

表 5.5　道路の現況と開発計画（バンチャランプール郡　1/2）

NAME OF ROAD	EXISTING CONDITION			MODEL PLAN			REMARKS
	LENGTH (in Kilometer)	TYPE	No. of Structures Required	LENGTH (in Kilometer)	TYPE	No. Structures To be Const.	
FB - B Homna - Marichakandi	22.40	E	12	22.40	BC	12	
FB - B Salimgonj - Kariakandi	13.70	E	20	13.70	BC	20	
FB - B Bancharampur - Nabinagar	19.20	E	9	19.20	BC	9	
RR - 1 Bancharampur - Dariachar	11.20	E	8	11.20	E	8	
RR - 2 Ujunchar - Dariachar - Bahorechar	11.20	E	11	11.20	E	11	
RR - 3 Bashgari - Durgapur	6.40	E	3	6.40	E	3	
RR - 4 Bahadurpur - Gokulnagar	8.00	E	5	8.00	E	5	
RR - 5 Bancharampur - Kalainagar Launch Ghat	8.00	E	2	8.00	E	2	
RR - 6 Jobonganj Bazar - Bishnarampur	8.00	E	4	8.00	E	4	
RR - 7 Bishnarampur - Jaikalipur	12.80	E	5	12.80	E	5	
RR - 8 Ulukandi - Pahariakandi	8.00	E	5	8.00	E	5	
RR - 9 Shalimabad - Junarchar	19.20	E	16	19.20	E	16	
RR - 10 Charlahani - Purbahaty via Guaratoli	9.60	E	11	9.60	E	11	
RR - 11 Fardabad - Junarchar	6.40	E	6	6.40	E	6	
RR - 12 Kalainagar Launch Ghat - Rupashdi	6.40	E	2	6.40	E	2	
RR - 13 Rupashdi - Burberia	8.00	E	3	8.00	E	3	
RR - 14 Rupashdi - Ashrafbad	9.60	E	11	9.60	E	11	
RR - 15 Sarifpur - Paratuli	9.60	E	7			**	Dropped in
RR - 16 Sunarampur - Shantipur	9.60	E	13				first screening
RR - 17 Barakandi - Jaikalipur Launch Ghat	6.40	E	6				step
RR - 18 Dariakandi - Gukolnagar via Imamnagar	6.40	E	4				

表 5.5　道路の現況と開発計画（バンチャランプール郡　2/2）

	NAME OF ROAD	EXISTING CONDITION			MODEL PLAN			REMARKS
		LENGTH (in Kilometer)	TYPE	No. of Structures Required	LENGTH (in Kilometer)	TYPE	No. Structures To be Const.	
RR - 19	Bahorchar South Para - Bahorchar	3.20	E	2	3.20	E	2	
RR - 20	Rupashdi - Kaurpur	3.20	E	4	3.20	E	4	
RR - 21	Hossainpur Road	4.80	E	4				**
	TOTAL	231.30		173	194.50		139	

表 5.5　道路の現況と開発計画（デビッドウォール郡）

	NAME OF ROAD	EXISTING CONDITION LENGTH (in Kilometer)	TYPE	No. of Structures Required	Existing	MODEL PLAN LENGT. (in Kilometer)	TYPE	No. Structures To be Const./Rehabili.		REMARKS
FB - 1	Madhya - Companygonj	18.20	E	22	6	18.20	BC	16	4	
FB - 2	Kalikapur - Istagram	12.00	E	19	4	12.00	BC	15	1	
FB - 3	Barat- Gobindpur	8.20	E	14	5	8.20	BC	9	5	
RR - 1	Debidwar - Istagram	16.80	E	15	5	16.80	E	10	4	
RR - 2	Fultali - Chowmuhani	20.30	E	24	11	20.30	E	13	2	
FB - 6	Sepera - Sultanpur	6.00	E	8	6	6.00	BC	2	0	
FB - 7	Yusufpur - Prigonj	2.50	E	6	4	2.50	BC	2	2	
FB - 8	Charbakar - Nabiabad G.C.C.R.	10.10	E	14	3	10.10	BC	11	0	
RR - 3	Monghata - Modonogor	12.10	E	10	1	12.10	E	9	0	
FB - 10	Jaafargonj - Bborokamta	11.40	E	16	11	11.40	BC	5	10	
RR - 4	Debidwar - Atapur	12.40	E	19	2	12.40	E	17	2	
RR - 5	Fultali - Khiraikandi	14.90	E	18	1	14.90	E	17	1	
RR - 6	Virallah - Modhumura	9.90	E	14	5	9.90	E	9	2	
RR - 7	Boroalompur - Dhamti	9.10	E	14	4	9.10	E	10	2	
RR - 8	Lokhipur - Barashaighor	20.30	E	26	0	20.30	E	26	0	
RR - 9	Tebaria - Chotna	5.20	E	4	1	5.20	E	3	0	
RR - 10	Jafargonj - Rajamaher	17.40	E	19	4				**	Dropped in first screenig step
RR - 11	Hossainpur - Bakosar	11.20	E	18	8					
RR - 12	Barur - Biranmondol	12.00	E	19	4					
RR - 13	Sibunogor - Sultanpur	7.80	E	8	1					
	TOTAL	237.80		307	86	189.40		174 209	35	

表 5.6　優先道路の選定（カチュア郡　1/2）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	Priority Ranking Prepared by Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
FB - A Kachua- Kalipara Road	1	Y	Y	N	1	N		10	0	3	15.0	20	15.0	15.0	78.0	2	
FB - B Kachua- Upazila Parishad Road	1	Y	N	N	3	N		8	2	0	15.0	20	10.1	15.0	70.1	3	10 %
FB - B Kachua- Sachar G.C.C Road	1	Y	Y	N	2	N		9	2	10	15.0	20	13.1	15.0	84.1	1	7 %
RR - 1 Kachua- Kashimpur Road	2	Y	Y	Y	4	N		10	2	2	11.3	6	6.4	13.5	51.2	5	8 %
RR - 2 Kachua- Ragunthpur Road	3	Y	Y	N	6	N		12	2	2	7.5	8	6.1	13.5	51.1	6	7 %
RR - 3 Kachua- Nowabpur Road	2	Y	Y	N	5	N		7	2	3	11.3	6	4.2	13.5	47.0	7	3 %
RR - 4 Sachar- Amirabad Road	2	Y	Y	N	11	N		12	2	3	11.3	12	4.2	10.5	55.0	4	8 %
RR - 5 Kachua- Teguria Road	3	Y	Y	Y	22	N		9	2	2	7.5	8	4.2	4.5	37.2	12	6 %
RR - 6 Pipulkora-Rahimanagor Road	2	Y	N	N	7	N		8	2	2	7.5	4	2.3	12.0	37.8	11	3 %
RR - 7 Baratolagoan-Monoharpur Road	3	Y	N	Y	12	N		4	2	3	0.0	4	4.2	10.5	27.7	20	-3 %
RR - 8 Palkhal- Aliara Road	3	Y	Y	Y	13	N		11	2	0	3.8	6	6.1	9.0	37.9	10	2 %
RR - 9 Kachua- Patharish Road	3	N	N	Y	19	N		6	2	3	0.0	4	0.0	6.0	21.0	30	0 %
RR - 10 Palgiri- Darbeshgonj Road	3	Y	Y	N	25	N		8	3	0	3.8	8	2.3	3.0	28.1	19	7 %
RR - 11 Uzani- Boxgonj Road	3	Y	Y	N	17	N		11	3	3	3.8	6	4.2	7.5	38.5	9	3 %
RR - 12 Layamehaer- Aliara Road	3	Y	Y	N	23	N		12	2	0	3.8	12	2.3	4.5	36.6	13	12 %
RR - 13 Sachar- Modhupur Road	3	Y	Y	N	24	N		12	2	0	3.8	12	2.3	4.5	36.6	14	9 %
RR - 14 Sachar-Ragdoil-Bayek Road	3	Y	Y	N	14	N		10	3	0	3.8	8	1.9	9.0	35.7	15	5 %
RR - 15 Palakhal- Kadla Road	3	N	N	N	30	N	Drop										
RR - 16 Bachaya- Prashanakap Road	3	N	Y	N	31	N		11	2	2	0.0	10	0.0	0.0	25.0	22	8 %
RR - 17 Baraiara- Modhupur Road	3	N	Y	Y	32	N		10	2	0	0.0	10	2.3	0.0	24.3	25	2 %
RR - 18 D.C. Road- Jagolpur Road	3	Y	N	N	18	N		8	1	0	0.0	4	1.9	7.5	22.4	28	2 %

表 5.6　優先道路の選定（カチュア郡　2/2）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	Priority Ranking Prepared by Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
RR - 19 Amojan- Poyalgacha Road	3	N	N	Y	20	N		6	1	3	0.0	2	0.0	6.0	18.0	33	-1 %
RR - 20 Batapokari- Nindpur Road	3	Y	Y	N	15	N		6	3	0	0.0	6	0.0	9.0	24.0	26	0 %
RR - 21 Hasihnpur-Darbeshgoni Road	3	N	Y	N	21	N		8	2	0	0.0	6	0.0	6.0	22.0	29	0 %
RR - 22 Uzani- Singdda Road	3	N	N	Y	26	N		12	3	0	0.0	2	0.0	3.0	20.0	32	-4 %
RR - 23 Ragunathpur- Modhupur Road	3	Y	Y	N	33	N		9	3	0	3.8	6	1.9	0.0	23.7	27	5 %
RR - 24 Kachua-College-Betpur Road	3	N	N	Y	34	N	Drop										
RR - 25 Ragdoil- Gograbari Road	4	N	Y	Y	35	N		10	1	0	0.0	10	0.0	0.0	21.0	31	4 %
RR - 26 Akania- Dumoria Road	3	N	N	N	27	N		8	3	0	0.0	4	0.0	3.0	18.0	34	1 %
RR - 27 Pathair-Aliara Road	4	Y	Y	N	36	N		8	3	2	3.8	8	0.0	0.0	24.8	23	4 %
RR - 28 Palakhal- Charatbanga Road	3	N	Y	Y	37	N		9	1	0	0.0	6	1.9	0.0	17.9	35	3 %
RR - 29 Tetua- Borochow Road	4	N	N	Y	38	N	Drop										
RR - 30 Rahimanagor-Paranpur Road	3	N	Y	Y	9	N		8	3	3	0.0	8	0.0	12.0	34.0	16	4 %
RR - 31 Monohorpur- Lowkora Road	3	Y	Y	N	28	N		8	3	0	7.5	10	2.3	1.5	32.3	17	6 %
RR - 32 Koa- Domoria Road	3	N	Y	N	10	N		6	2	0	0.0	6	2.3	10.5	26.8	21	-1 %
RR - 33 Koraish- Khidda Road	4	N	Y	Y	39	N		11	3	0	0.0	18	0.0	0.0	32.0	18	8 %
RR - 34 Monkhola- Kailine Road	3	N	Y	Y	16	N		6	2	3	0.0	6	0.0	7.5	24.5	24	-2 %
RR - 35 Hossainpur-Changini Road	3	N	N	N	29	N	Drop										
RR - 36 Rahima Nagor Subidpur via Meair Bazar	2	N	N	N	8	N		6	2	0	11.3	4	4.2	12.0	39.5	8	4 %

表 5.6　優先道路の選定（ナビナガール郡　1/3）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	Priority Ranking Prepared by Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
FB - 1 Nabinagar - B.Baria	1	Y	Y	N	2	N		18	1	0	15.0	20	10.1	13.5	77.6	1	13 %
FB - 2 Nabinagar - Bancharampur	1	Y	Y	N	3	N		11	1	0	15.0	20	11.3	12.0	70.3	3	15 %
RR - 1 Kaitala College - Mohesh Road	3	Y	Y	N		N		12	3	0	7.5	8	6.4	0.0	36.9	15	6 %
RR - 2 Jenudpur - Jamuala River	3	Y	Y	N	6	N		11	3	3	15.0	6	1.9	7.5	47.4	8	4 %
RR - 3 Karaibari - Rashullabad	3	N	Y	N		N		12	3	0	0.0	8	0.0	0.0	23.0	32	6 %
RR - 4 Majiara Girl's School - Bibibishara	3	N	Y	N	6	N		16	3	0	0.0	16	4.5	7.5	47.0	10	14 %
RR - 5 Baishmuja Bazar - Gajirkandi via Birgoan	3	Y	Y	N		N		17	3	0	7.5	18	2.3	0.0	47.8	7	11 %
RR - 6 Jenudpur - Bhaturiard	3	Y	Y	Y	7	N		9	3	3	15.0	8	6.1	6.0	50.1	6	5 %
RR - 7 Barikandi Launch Ghat - Jallird	3	N	Y	N		N		10	3	0	0.0	12	0.0	0.0	25.0	27	10 %
RR - 8 Jafarpur - Jamuna River	3	Y	Y	N	8	N		14	3	3	15.0	12	1.9	4.5	53.4	5	15 %
RR - 9 Norshingpur - Chiti	3	Y	Y	N		N		12	3	0	0.0	14	1.9	0.0	30.9	20	11%
RR - 10 Link Road (R&H - Mohesh Road)	3	N	Y	N	1	N		6	3	0	0.0	6	2.3	15.0	32.3	18	-3%
RR - 11 Lourfatapur - Kaligonj Bazar	3	N	N	N		N	Drop										
RR - 12 Dhani - Shreerapur - Lahari	3	N	Y	N		N		12	3	0	0.0	12	0.0	0.0	27.0	26	10 %
RR - 13 Aliabad - Gopalpur	3	N	Y	N		N		12	3	0	0.0	12	2.3	0.0	29.3	22	7 %
RR - 14 Shamagram - Solimgonj	3	Y	Y	Y	3	N		9	3	7	11.3	18	6.4	9.0	63.7	4	16 %
RR - 15 Mohesh Road - Goali - Rasulpur	2	Y	Y	N	1	N		16	3	0	11.3	20	11.3	15.0	76.6	2	12 %
RR - 16 Dashmouja - Jenudpur	3	N	N	N	6	N		12	3	0	0.0	16	0.0	7.5	38.5	12	-2 %
RR - 17 R&H Road - Kazimabad via Bolachang Bazar	3	Y	Y	N		N		10	3	4	15.0	6	0.0	0.0	38.0	13	6 %
RR - 18 Raullabad - Ratanpur via Mullah	3	Y	Y	N	4	N		10	3	0	7.5	10	6.4	10.5	47.4	9	9 %
RR - 19 Nurjahanpur - Muktarampur	3	N	Y	N		N		10	3	0	0.0	12	0.0	0.0	25.0	28	12 %
RR - 20 Manikhagar Launch Ghat - Khagaloa Bazar	3	Y	Y	N		N		8	3	0	7.5	10	2.3	0.0	30.8	21	11 %

表 5.6　優先道路の選定（ナビナガール郡　2/3）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	Priority Ranking Prepared by Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
RR - 21 Dhapunia - Shibpur High School	4	N	N	N		N	Drop										
RR - 22 Monipur - Natchar Bazar	3	N	Y	N		N		14	3	3	0	6	2.3	0	28.3	25	5 %
RR - 23 Kaligoanj - Dobachail	2	N	Y	N		N		7	3	0	0	10	0.0	0	20.0	34	-2 %
RR - 24 Rajatpur - Goparpur South Para	3	N	N	N		N	Drop										
RR - 25 Krishnagar - Baluahat	3	N	Y	N	5	N		14	3	0	0	8	0.0	0	25.0	29	9 %
RR - 26 Nabinagar - Karimshah Bazar	3	N	Y	N	5	N		8	3	3	0	8	0.0	9	31.0	19	0 %
RR - 27 Alamnagar - Charilapang - Islampur	3	N	Y	N		N		10	3	0	0	10	2.3	12	37.3	14	5 %
RR - 28 Bikgoan - Kadarkhala	4	Y	Y	N		N		14	3	3	0	12	4.2	0	36.2	16	18 %
RR - 29 Shahapur Veternary Hospital - Kaligonj Dobachail	3	N	N	N		N	Drop										
RR - 30 Bolachang Bazar - Nabinagar/Bancharampur Road via Belanagar	3	N	N	Y		N	Drop										
RR - 31 Nabinagar - Aalamnagar	3	N	Y	N		N		6	3	0	0	6	0.0	9	24.0	31	-5 %
RR - 32 Imambaril - Shardar via Narui	3	N	Y	N		N		14	3	0	0	12	0.0	0	29.0	24	8 %
RR - 33 Barail - Nilokhi	3	N	N	N		N	Drop										
RR - 34 Moheshpur Launch Ghat - Gori Goan via Bijgar	3	Y	Y	N		N		10	3	0	3.8	12	4.2	0	33.0	17	8 %
RR - 35 Dhara Bannga - Solimgonj	3	N	N	N		N	Drop										
RR - 36 Konaghat - Manikngar	3	N	Y	N		N		8	3	0	0	12	0.0	0	17.0	35	6 %
RR - 37 Durgarampur Launch Ghat - Keshorepur	4	N	N	N		N	Drop										

表 5.6　優先道路の選定（ナビナガール郡　3/3）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	Priority Ranking Prepared by Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
RR - 38 Lourfatepur - Hazipur	3	N	N	Y		N	Drop										
RR - 39 Sshaumua - Rasullabad via Gaganathpur	3	N	Y	N		N		14	3	0	0.0	10	2.3	0	29.3	23	9 %
RR - 40 Kanikara - Merukuta Bazar via Bagaura	3	Y	Y	N		N		13	3	4	3.8	12	4.2	0	40.0	11	12 %
RR - 41 Pandabnagar - Merkuta via Malal	3	Y	N	N		N		12	3	0	3.8	2	0.0	0	20.8	33	1 %
RR - 42 Kurichar - Boruhit	3	Y	Y	N		N		14	3	0	0.0	6	1.9	0	24.9	30	7 %
RR - 43 Karaibari - Barikbala	3	N	N	N		N	Drop										

表 5.6　優先道路の選定（バンチャランプール郡　1/2）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	*Priority Ranking Prepared by* Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
FB - B Homna - Marichakandi	1	Y	Y	Y	1	N		12	3	10	15.0	14	15.0	15.0	84.0	1	17%
FB - B Salimgonj - Kariakandi	2	Y	Y	N	2	N		12	3	3	11.3	10	6.1	13.5	60.4	2	7%
FB - B Bancharampur - Nabinagar	2	Y	Y	N	3	N		10	3	7	11.3	8	8.3	15.0	61.1	3	11%
RR - 1 Bancharampur - Dariachar	3	Y	Y	Y	4	N		11	3	3	7.5	12	6.4	13.5	56.4	4	13%
RR - 2 Ujunchar - Dariachar - Bahoreschar	3	Y	N	N	5	N		8	3	0	7.5	4	0.0	12.0	34.5	6	2%
RR - 3 Bashgari - Durgapur	3	N	N	N	6	N		8	3	0	0.0	4	0.0	12.0	27.0	11	5%
RR - 4 Bahadurpur - Gokulnagar	3	N	N	Y	7	N		8	3	0	0.0	2	0.0	10.5	23.5	15	-2%
RR - 5 Bancharampur - Kalainagar Launch Ghat	3	N	Y	N	8	N		6	3	0	0.0	6	0.0	10.5	25.5	13	10%
RR - 6 Jobonganj Bazar - Bishnarampur	3	Y	Y	N	9	N		8	3	0	3.8	8	1.9	9.0	33.7	7	8%
RR - 7 Bishnarampur - Jaikalipur	3	Y	Y	N	10	N		6	3	0	7.5	4	1.9	9.0	33.4	8	9%
RR - 8 Ulukandi - Pahariakandi	3	N	N	Y	11	N		9	3	0	0.0	8	2.3	7.5	25.8	12	4%
RR - 9 Shalimabad - Junarchar	3	N	Y	Y	12	N		8	3	3	0.0	8	2.3	7.5	31.8	10	9%
RR - 10 Charlahani - Purbahaty via Guaratoli	3	Y	Y	N	13	N		8	3	3	0.0	8	4.2	6.0	32.2	9	6%
RR - 11 Fardabad - Junarchar	3	N	Y	N	14	N		10	3	0	0.0	8	0.0	4.5	25.5	14	7%
RR - 12 Kalainagar Launch Ghat - Rupashdi	3	Y	Y	N	15	N		12	3	0	7.5	14	3.8	3.0	43.3	5	14%
RR - 13 Rupashdi - Burberia	3	Y	N	N	16	N		6	3	0	0.0	2	1.9	1.5	14.4	19	3%
RR - 14 Rupashdi - Ashrafbad	3	N	N	N	17	N		8	3	0	0.0	4	2.3	0.0	17.3	17	8%
RR - 15 Sarifpur - Paratuli	3	N	N	N	18	N	Drop										
RR - 16 Sunarampur - Shantipur	4	N	N	N	19	N	Drop										
RR - 17 Barakandi - Jaikalipur Launch Ghat	4	N	N	N	20	N	Drop										
RR - 18 Darikandi - Gukolnagar via Imamnagar	3	N	N	Y	21	N	Drop										

表 5.6　優先道路の選定（バンチャランプール郡　2/2）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	Priority Ranking Prepared by Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
RR - 19 Bahorchar South Para - Bahorchar	4	N	Y	N	22	N		8	3	0	0	6	0	0	17.0	18	5%
RR - 20 Rupashdi - Khaurpur	4	N	Y	N	23	N		10	3	0	0	8	0	0	21.0	16	6%
RR - 21 Hossainpur Road	3	N	N	N	24	N	Drop										

表 5.6　優先道路の選定（デビッドウォール郡）

	STEP 1 : Preliminary Screening							STEP : 2 Socioeconomic Ranking									STEP : 3 Economic Justification
								Economic Activities				Quality of Life					
	Road Classification	Linkage to market and/or administration center	Population Served (More than 600 persons/Km)	Availability of Alternative Transportation Means	Priority Ranking Prepared by Upazila	Environmental impact	Preliminary Screening	Agricultural Potential	Degree of Access Improvement	Existence of Parallel Development Activities	Linkage to Local and Regional Market	Population Served	Access to Social Services	Request by Upazila	Total Score	Socioeconomic Ranking	Internal Rate of Return (IRR)
FB - 1 Madhya - Companygonj	1	Y	Y	N	1	N		11	3	0	15.0	16	8.3	15.0	68.3	1	6 %
FB - 2 Kalikapur - Istagram	1	Y	Y	N	2	N		14	1	0	15.0	16	6.1	15.0	67.1	2	14 %
FB - 3 Barat - Gobindpur	1	Y	Y	N	3	N		11	1	0	15.0	10	0.0	13.5	50.5	5	5 %
RR - 1 Debidwar - Istagram	1	Y	Y	N	4	N		10	1	0	15.0	8	4.2	13.5	51.7	3	10 %
RR - 2 Fultali - Chowmuhani	3	Y	N	N	5	N		9	1	0	7.5	4	4.5	12.0	38.0	10	5 %
FB - 4 Sepera - Sultanpur	3	Y	Y	N	6	N		10	1	0	7.5	10	4.2	12.0	44.7	7	11 %
FB - 5 Yusufpur - Pirgonj	3	Y	N	N	7	N		6	1	4	15.0	10	4.2	10.5	50.7	4	4 %
FB - 6 Charbakar - Nabiabad G.C.C.R.	3	Y	Y	N	8	N		10	3	4	11.3	6	4.2	10.5	49.0	6	3 %
RR - 3 Monghata - Modonogor	3	Y	Y	N	9	N		12	3	0	0.0	10	6.4	9.0	40.4	9	12 %
FB - 7 Jafargonj - Borokamta	1	Y	Y	N	10	N		12	1	0	0.0	8	6.1	9.0	36.1	11	7 %
RR - 4 Debidwar - Atapur	2	Y	Y	N	11	N		12	3	0	0.0	10	8.3	7.5	40.8	8	9 %
RR - 5 Fultali - Khiraikandi	3	N	Y	N	12	N		13	3	0	0.0	6	2.3	7.5	31.8	14	6 %
RR - 6 Virallah - Modhumura	3	Y	Y	N	13	N		10	3	0	7.5	6	2.3	6.0	34.8	13	7 %
RR - 7 Boroalompur - Dhamti	3	Y	Y	Y	14	N		8	1	0	3.8	6	0.0	4.5	23.3	16	5 %
RR - 8 Lokhipur - Barashaighor	3	Y	Y	N	15	N		10	3	0	3.8	10	1.9	3.0	31.7	15	9 %
RR - 9 Tebaria - Choma	3	N	Y	N	16	N		16	3	0	0.0	12	2.3	1.5	34.8	12	19 %
RR - 10 Jafargonj - Rajamaher	3	N	N	Y	17	N	Drop										
RR - 11 Hossainpur - Bakosar	3	N	N	Y	18	N	Drop										
RR - 12 Barur - Biranmondol	3	N	N	Y	19	N	Drop										
RR - 13 Sibunogor - Sultanpur	3	N	N	Y	20	N	Drop										

表 5.7　MRDP-IIにおけるグロス・センター改修事業の施設計画

Kachua Upazila

	Item	Unit	Kachua	Sachar	Palakhal	Rahimanagar	Total
1	Bridge (12m L x 3.66m W)	no	1	0	0	0	1
2	Shed (New)	m2	192	270	270	405	1,137
3	Shed (Rehabilitation)	m2	768	0	0	0	768
4	Open Sale Platform	m2	540	675	810	810	2,835
5	Drain Ditch	m	1,233	420	466	473	2,592
6	Garbage Pit	no	12	7	8	9	36
7	Laterine	no	3	3	1	3	10
8	Water Supply System	no	3	2	1	5	11
9	Concrete Pavement (t=150)	m2	8,930	1,305	1,420	1,385	13,040
10	Expansion Area	m2	4,160	1,600	1,600	1,600	8,960

Nabinagar Upazila

	Item	Unit	Nabinagar	Bholachong	Sreeghar	Markuti	Total
1	Shed (New)	m2	540	270	270	270	1,350
2	Shed (Rehabilitation)	m2	0	0	0	0	0
3	Open Sale Platform	m2	270	810	810	810	2,700
4	Drain Ditch	m	1,206	538	559	552	2,855
5	Garbage Pit	no	8	8	8	6	30
6	Laterine	no	1	1	1	1	4
7	Water Supply System	no	2	2	2	1	7
8	Concrete Pavement (t=150)	m2	3,394	1,780	1,960	1,645	8,779
9	Expansion Area	m2	0	1,600	1,600	1,600	4,800

Bancharampur Uapzila

	Item	Unit	Mouilagonj	Marichakandi	Jibonganj	Ujanchar	Total
1	Shed (New)	m2	1,080	135	270	270	1,755
2	Shed (Rehabilitation)	m2	0	0	0	0	0
3	Open Sale Platform	m2	540	675	810	675	2,700
4	Drain Ditch	m	2,225	368	466	525	3,584
5	Garbage Pit	no	13	6	8	7	34
6	Laterine	no	3	1	2	2	8
7	Water Supply System	no	1	0	0	0	1
8	Concrete Pavement (t=150)	m2	8,549	1,240	1,420	1,829	13,038
9	Expansion Area	m2	0	1,600	1,600	1,600	4,800

Debidwar Upazila

	Item	Unit	Debidwar	Pirganji	Mohanpur	Jafargonj	Total
1	Shed (New)	m2	270	270	270	135	945
2	Shed (Rehabilitation)	m2	270	0	0	0	270
3	Open Sale Platform	m2	540	675	675	675	2,565
4	Drain Ditch	m	544	406	406	358	1,714
5	Garbage Pit	no	9	7	7	6	29
6	Laterine	no	1	1	1	1	4
7	Water Supply System	no	1	1	1	1	4
8	Concrete Pavement (t=150)	m2	3,568	1,255	1,255	1,290	7,368
9	Expansion Area	m2	2,080	1,600	1,600	1,600	6,880

表 5.8 MRDP-II事業比較

MRDP II PROGRAMME	GENERAL FEATURES		Suitability for UCCA's Activities	ASPECTS FOR COMPARATIVE STUDY					
	Scope of Programme	Existing Institutional Set-up		Contribution to Income Generation	Employment Generation	Expected Beneficiaries	Fund Requirement for Upazila Parishd	Supplemental and Multiplier Effects	Existing Programme and Project
I. CROP PRODUCTION SECTOR									
1.1 LLP Irrigation Development and Drainage Improvement Programme	Extension of irrigated rice by low lift pums by 6,500 ha	BRDB in cooporation with BADC, LGEB and DAE	Highly Suitable. To be implemented along the established BRDB'S Irrigation Management Programme (IMP). Coordination will be required with LGEB and Upazilas for OM of re-excavated canals.	Direct and high for KSS/MSS. Net production value of Boro rice is Tk 15,000/ha.	Limited	Medium	Not directly corcerned except for cost for UIT.	High with Programme (1.4), (1.5), (4.1), (6.1), and (6.5)	DTW-II of IMP Gumuti II, FAP 5
1.2 Fractional Pump Promotion Programme	Supplemental irrigation to winter crops by FP. Programme would be promoted with other Programmes (1.3) and (3.1)	No particular government agency	Suitable. UCCA can establish OM system with BSS/KSS on pilot basis under external supporting team.	Direct and high for BSS to act as FP operators.	Very high 3 persons/pump	Medium	Not directly corcerned except for cost for UIT.	High with (1.3) and (1.4)	
1.3 Crop Intensification and Diversification Programme	Expansion of potatoes, mustard, sesame and pulses for supplying tubers, oils and protein diet	(Under study by Ministry of Agriculture)	Less suitable. Technical support of DAE and BADC is indispensable. Farm input supply can be UCCA's business. Agricultural extention by DAE (BSs) is important.	High for KSS/MSS. Net values per ha are Tk. 8,000 for potatoes, Tk 6,900 for masturd and Tk 4,600 for pulses.		Medium	Not directly concerned except for cost for DAE and BSs.	High with (1.2) and (1.4)	
1.4 Farm Input Supply Programme	Stable supply of improved paddy seeds and fertilizers	BADC	Suitable. UCCAs have experience of fertilizer marketing. Supports by BRRI and BADC are essential.	Not direct.		Medium	Not directly concerned.	None - support programme for (1.1). Possible with (3.1)	BADC's programme but not cover the area
1.5 Tree Nursery Development Programme	Provision of seedlings of fruit trees for homestead planting and tree planing along road	Upazila/Union	Suitable for fruit tree, but road trees planting is for Unions. Technical support of Forestry Dept. and BADC is required. Possible for formation of primary societies for tree planting.	Not direct. BSS will get wage.	Limited	Limited	Not directly concerned.	High with (1.6)	
1.6 Intensified Homestead Crop Production Extension Programme	Promotion of women in rural development and improvement of nutritional status	No particular government agency, promoted by NGOs	Less suitable. Lack of extension worker is crucial issue. DAE is in the best position.	Low, but important income source for rural women.		Medium	Not directly concerned.	Medium with (4.3) and (3.2)	
1.7 Model Farm Credit Programme	Provision of farm input credit (Boro paddy, fish pond culture) through UCCA, BRDB	No particular government agency, promoted by NGOs	Highly suitable. Marginal and small farmers is free from higher rates of private money lenders. Crop and fish production is encouraged and farmers' livelihood is secured.	Direct and high		Medium	Not directly concerned.	Medium with (1.1) and (3.1)	
II. LIVESTOCK SECTOR									
2.1 Feed and Fodder Production Programme	Expansion of productive grasses and fodder crops under intensification of land use	Directorate of Livestock	Less suitable.	Not direct but high in terms of animal husbandry		Limited	Not directly concerned.	High with (2.3) and crop production sector	
2.2 Semi-Intensive Poultry Production Programme	Semi-intensive broiler chicken production	Directorate of Livestock	Suitable as far as strong support by DOL is ensured.	Direct only for labour	High	Limited	Not directly concerned.	Medium with (3.1)	
2.3 Veterinary Service Expansion Programme	Promotion of vaccination and artificial insemination (AI)	Directorate of Livestock	Less suitable.	Not direct but high in terms of animal husbandry		Medium	Not directly concerned.	High with (2.1)	
III. INLAND FISHERY SECTOR									
3.1 Semi-Intensive Fish Pond Culture Development Programme	Reactivation of fish pond under organized fishermen group	Department of Fishery NGOs	Highly suitable. UCCA will be responsible for formation of BSS, training, input supply and marketing.	Direct and high. Net production value of fish is Tk 40,000/ton or Tk 80,000/ha	Very high 6 persons/ha of pond	Medium	Not directly concerned.	High in demonstration effect	
3.2 Homestead Integrated Fish Culture Programme	Fish-chicken integrated production in homestead by participation of women	No particular government agentcy	Less suitable. Lack of extension worker is crucial issue. DOF is in the best position.	Low, but important income source for rural women.		Limited	Not directly concerned.	Medium with (1.6) and (4.3)	
3.3 Open Water Capture Fishery Development Programme	Supply of fishing boat, nets and gears to fishermen group. Participatio of women in net making.	No particular government agentcy (DOF and MOL for leasing fishing right)	Suitable. UCCA will be responsible for formation of BSS, supply of boat&nets and marketing. Net making will be new business for MSS/MBSS.	Direct and high.	High	Medium	Not directly concerned.	Less	
IV. AGRO-INDUSTRY SECTOR									
4.1 Post-Harvest Processing Plants Expansion Programme	Expansion of rice mills, flour mills and oil mills	Private sector	Highly suitable. UCCA will avail loan for establishment of plants and manage with BSS. Joint-marketing will also be required for stable procurement of raw materials under UCCA.	Direct and high wage for BSS/MBSS	Limited	Limited	Not directly concerned.	High with (1.5) and (5.2)	
4.2 Cold Storage Installation Programme	Expansion of starage capacity for potatoes, vegetables and fish	Private sector	Highly suitable. UCCA will avail loan for establishment of plants and manage with BSS.	Direct and high wage for BSS/MBSS	Limited	Limited	Not directly concerned.	High with (1.2), (3.1) and (6.2)	
4.3 Homestead Food Processing Extension Programme	Promotion of women in rural development and improvement of nutritional status	NGOs	Less suitable. Lack of extension worker is crucial issue. BSCIC is in the best position.	Low, but important income source for rural women.		Medium	Not directly concerned.	Medium with (1.6) and (3.2)	
V. MARKETING SECTOR									
5.1 Upazila Food Grains Marketing Programme	Management of godowns at villages (100 t) and local markets (500 t)	Upazila parishad	Highly suitable. Joint-marketing of food grains by Village Marketing Groups (VMG) organized under UCCA	Direct and high for KSS/MSS by increased farm income. Stabilization of livelihood for BSS and poor by secured food supply.	Medium. BSS can get job for workforce.	Indirect. Grains supply will be stabilized.	Not directly concerned.	Very high with (4.1) and (6.2)	
5.2 Joint Marketing Promotion Programme	KSS/MSS members' joint (group) marketing of cash crops, fish and poultry	UCCAs in Comilla	Highly suitable. Joint-marketing of food grains by Village Marketing Groups (VMG) organized under UCCA	High for KSS/MSS, fishermen Stabilization of livelihood for BSS and poor by secured food supply.	Medium. BSS can get job for workforce.	Indirect	Not directly concerned.	Very high with (4.1) and (6.2)	Comilla Industral Cooperative Society
VI. RURAL INFRASTRUCTURE SECTOR									
6.1 Feeder and Rural Roads Improvement Programme	Improvement of feeder road B type and rural roads	Upazila parishad	Not suitable. UCCA can act only as man-power sources by organizing BSS/MBSS in construction and OM.	Direct and high wage for BSS/MBSS	High	Large, direct and indirect	Significantly large.	Very high with all of the production sectors.	
6.2 Growth Center Improvement Programme	Improvement of existing facilities of growth centers at 16 locations	Upazila parishad	Not suitable. UCCA will be only one of lease holders to deploy their marketing business in growth centers.	Indirectly high by obtaining marketing opportunities.	Limited	Large, direct and indirect	Adaptable. Lease money to be collected properly for OM.	Very high with all of the production sectors.	
6.3 Drinking Water Supply Development Programme	Expansion of hand tube well (HTW) at village level	UNICEF and PHED	Not suitable.	Not direct. Basic Human needs.		Large, direct and indirect	Not directly concerned.	Less	UNICEF/DPHE's Rural Drinking Water Supply Programme
6.4 Sanitation Improvement Programme	Expansion of latrines and improvement of drains	UNICEF and PHED	Not suitable.	Not direct. Basic Human needs.		Large, direct and indirect	Not directly concerned.	Less	UNICEF/DPHE's Sanitation Programme
6.5 Rural Electrification Extension Programme	Rural power supply	BPDB, Rural Electlification Board (REB) and PBS	Not suitable.	Not direct.		Large, direct and indirect	Not directly concerned.	Very high with (1.1) and (4.1)	Covered by nationwide programme
6.6 Communication Improvement Programme	Expansion of tele-comunication and postal services	Bangladesh Telegraph and Telephone Board (BTTB) Ministry of Communication	Not suitable.	Not direct.		Large, direct and indirect	Not directly concerned.	Less	Covered by nationwide programme
6.7 Cluster Formation of Rural Housing Programme	Provision of houses to homeless and landless peropole.	unknown	Not suitable.	Not direct.		Limited	Not directly concerned.	Less	
6.8 Schools Improvement Programme	Rehabilitation of primary and secondary school buildings	Upazila parishad	Not suitable.	Not direct.		Limited	Large	Less	
6.9 Training Facilities Development Programme	Improvement of Upazila Training Centers (UTCs)	UCCA	Highly suitable (essential aspects). Cooperative activities will be ensured through training at upazila level.	Indirect, but important as vocational center for BSS/MBSS.		Large, direct	Not directly concerned.	Less	

表 5.9　MRDP-II計画比較検討評価（1/2）

MRDPP II PROGRAMME	ASSESSMENT	Result
I. CROP PRODUCTION SECTOR		
1.1 LLP Irrigation Development and Drainage Improvement Programme	Urgently required and highly promising. To be implemented along the BRDB'S Irrigation Management Programme (IMP). Re-excavation of existing canals is essential work for the Programme. Coordination will be required with LGEB and Upazilas especially for OM of canals.	Taken up
1.2 Fractional Pump Promotion Programme	Urgently required for both KSS and BSS. Under the full management of UCCA, OM system with BSS/KSS will be established. Due to lack of hydrological data on scattering water bodies, the Programme will be implemented as pilot basis.	Taken up
1.3 Crop Intensification and Diversification Programme	Crop divesification is emphasized be the Govern't. Under the current extension system of DAE and farm input supply support of BADC, the Programme will face the technical problems. The Programme can be promoted with Programme (1.2).	
1.4 Farm Input Supply Programme	Urgently required for increased Boro rice production. UCCAs have experience of fertilizer marketing. Technical supports by BRRI for seed multiplication and BADC for procurement of fertilizers and chemeicals are essential for the Programme.	Taken up
1.5 Tree Nursery Development Programme	Less urgent but should be introduced in the long term schedule. Seedlings of fruit trees are extended for homestead production and ones of road trees planting for Unions. Technical support of Forestry Dept. is required.	
1.6 Intensified Homestead Crop Production Extension Programme	Less suitable for local government and UCCA. NGO's grass-root extension activities has contributed to improvement of women in rural development. Lack of female extension worker is crucial issue. By obtaining NGO's experiences, DAE should carry out the Programme.	
1.7 Model Farm Credit Programme	Highly required for UCCA/primary societies. UCCA will arrange the fund sources. Small farmers will be free from higher interest rates of private money lenders. By package crop/fish loan (short term), the activities will be encouraged and farmers' livelihood will be secured.	Taken up
II. LIVESTOCK SECTOR		
2.1 Feed and Fodder Production Programme	Urgently required. The technical support of Directorate of Livestock (DOL) is indispensable. To make up shortage of animal protein sources, the target of Programme should be examined considering inland fishery sector.	
2.2 Semi-Intensive Poultry Production Programme	Less suitable for local government and UCCA. NGO's grass-root extension activities has contributed to improvement of women in rural development. Lack of female extension worker is crucial issue. By obtaining NGO's experiences, DOL should carry out the Programme.	
2.3 Veterinary Service Expansion Programme	Urgent but less suitable programme for local governments and UCCA. The nationwide programme is required for human development (veterinary doctors and livestock expert trainig) and facilities devlopment (dispensary and AI centers)	
III. INLAND FISHERY SECTOR		
3.1 Semi-Intensive Fish Pond Culture Development Programme	Highly suitable for UCCA/primary societies. UCCA will be responsible for formation of BSS, training, input supply and marketing. Taking into account the existing ponds and capacity of hatchery, the Programme should be optimized.	Taken up
3.2 Homestead Integrated Fish Culture Programme	Less suitable for local government and UCCA. NGO's grass-root extension activities has contributed to improvement of women in rural development. Lack of female extension worker is crucial issue. By obtaining NGO's experiences, DOF should carry out the Programme.	
3.3 Open Water Capture Fishery Development Programme	Suitable. UCCA will be responsible for formation of BSS, supply of boat & nets and marketing. Net making will be new business for rural women. The government policy for leasing fishing right of open water shoul be re-arranged.	

表 5.9　MRDP-II計画比較検討評価（2/2）

MRDPP II PROGRAMME	ASSESSMENT	
IV. AGRO-INDUSTRY SECTOR		
4.1 Post-Harvest Processing Plants Expansion Programme	Highly suitable and profitable for UCCA. UCCA will establish plants and manage with BSS. Joint-marketing will also be required for stable procurement of raw materials under UCCA. The Programme should be combined with godown installation and growth center improvement.	Taken up
4.2 Cold Storage Installation Programme	Suitable for encouragement of private sector, and excluded from UCCA's business. Investors will avail loan for establishment of plants. The main technical problem is the current conditions of electricity supply conditions.	
4.3 Homestead Food Processing Extension Programme	Less suitable for local government and UCCA. NGO's grass-root extension activities has contributed to improvement of women in rural development. Lack of female extension worker is crucial issue.	
V. MARKETING SECTOR		
5.1 Upazila Food Grains Marketing Programme	Highly suitable and urgent. Joint-marketing of food grains should be by Village Marketing Groups (VMG) organized under UCCA. Godown and post-harvest plants, which are supplement each other, will be under the management of UCCA.	Taken up
5.2 Joint Marketing Promotion Programme	Highly suitable and urgent. Joint-marketing of food grains should be by Village Marketing Groups (VMG) organized under UCCA. The function of growth centers and hats should be considered to ensure the Programme.	Taken up
VI. RURAL INFRASTRUCTURE SECTOR		
6.1 Feeder and Rural Roads Improvement Programme	Upazila parishads are fully responsibel for Feeder Road B type and Rural Roads. OM of roads should be examined in-depth. Considerable employment opportunity will be generated.	Taken up
6.2 Growth Center Improvement Programme	Upazila parishads are fully responsibel for management and maintenance of Growth Centers and hats. UCCA will be only one of lease holders t deploy their marketing and post-harvesting processing business in growth centers.	Taken up
6.3 Drinking Water Supply Development Programme	UNICEF and Department of Public Health Engineering (DPHE) has been promoting hand tube well (HTW) in the rural areas nationwidely. To fulfill basic human needs is important task of rural development. Support of local government is essential for the said national project.	
6.4 Sanitation Improvement Programme	UNICEF and Department of Public Health Engineering (DPHE) has been promoting hand tube well (HTW) in the rural areas nationwidely. To fulfill basic human needs is important task of rural development. Support of local government is essential for the said national project.	
6.5 Rural Electrification Extension Programme	BPDB, Rural Electrification Board (REB) and PEB has been promoting rural electrification nationwidely. The Programme will encourage of irrigation and agro-industry . Support of local government is essential for the said national project.	
6.6 Communication Improvement Programme	Bangladesh Telegraph and Telephone Board (BTTB) under Ministry of Communication has been promoting tele-communication and postal services nationwidely. Support of local government is essential for the said national project.	
6.7 Cluster Formation of Rural Housing Programme	Not feasible in the study area due to lack of government land.	
6.8 School Building Improvement Programme	Important but difficult to implement within the framework of rural development.	
6.9 Training Facilities Development Programme	Highly essential for skill training. But the Programme will utilize the existing buildings as much as possible. The equipment supply will be made for ensuring the skills training. On-the-job field training will be more important than indoor training.	

表 6.1　MRDP-II事業費年次別支払計画表

(Unit : million Taka)

	PHASE-I			PHASE-II					PHASE-III										
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
I. Direct Construction Cost																			
1. Irrigation Development and Drainage Improvement	11.2	9.5	9.5	4.8	5.4	5.2	4.8	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.7
1.1 Canal Re-excavation	5.2	5.9	5.9	3.0	3.4	3.3	3.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.5
1.2 Low Lift Pump (LLP)	3.3	3.6	3.6	1.8	2.0	1.9	1.8	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5
1.3 Workshop for LLPs	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
2. Fractional Pumps (FP) Promotion	9.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	27.0
3. Feeder and Rural Roads Improvement	391.4	334.1	319.7	126.0	126.0	126.0	126.0	105.9	135.0	128.0	108.0	108.0	108.0	108.0	106.0	106.0	106.0	85.2	2771.3
3.1 Feeder B																			
3.1.1 Road Body	107.6	103.0	92.4	12.0	12.0	12.0	12.0	8.5	14.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	383.5
3.1.2 Bridge & Culvert	126.8	117.1	112.3	30.0	30.0	30.0	30.0	26.7	25.0	22.0	12.0	12.0	12.0	12.0	10.0	10.0	10.0	8.3	654.3
3.2 Rural Road																			
3.2.1 Road Body	53.4	40.0	39.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	133.1
3.2.2 Bridge & Culvert	103.7	74.0	75.2	102.0	102.0	102.0	102.0	87.8	108.0	108.0	108.0	108.0	108.0	108.0	106.0	106.0	106.0	85.2	1600.5
4. UCCA Complex Establishment	68.4	48.6	44.6	68.3	49.3	46.1	42.7	58.5	9.9	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	440.8
4.1 Parboiled Rice Mill	7.8	7.8	6.7	6.7	6.7	5.6	3.4	3.4	4.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.9
4.2 Flour Mill	5.4	2.1	1.1	4.3	4.3	4.3	4.3	2.1	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.0
4.3 Oil Mill	6.7	4.5	4.5	4.5	3.4	2.2	1.1	1.1	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.5
4.4 Godown (100 ton)	34.2	34.2	32.3	31.3	31.3	30.4	30.4	30.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	133.9
4.5 Godown (500 ton)	14.3	0.0	0.0	21.5	3.6	3.6	3.6	21.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.9
5. Growth Center Improvement	25.5	12.6	9.1	2.2	13.2	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.9
Sub- total *	505.5	404.8	382.8	203.1	195.7	186.4	175.3	170.5	145.9	133.4	108.9	108.9	108.9	108.9	106.9	106.9	106.9	86.1	3345.7
II. Administration	25.3	20.2	19.1	10.2	9.8	9.3	8.8	8.5	7.3	6.7	5.4	5.4	5.4	5.4	5.3	5.3	5.3	4.3	167.3
III. Physical Contingency	75.8	60.7	57.4	30.5	29.4	28.0	26.3	25.6	21.9	20.0	16.3	16.3	16.3	16.3	16.0	16.0	16.0	12.9	501.9
IV. Engineering Services	75.8	60.7	57.4	30.5	29.4	28.0	26.3	25.6	21.9	20.0	16.3	16.3	16.3	16.3	16.0	16.0	16.0	12.9	501.9
Total	682.4	546.5	516.8	274.1	264.2	251.6	236.6	230.2	196.9	180.1	147.0	147.0	147.0	147.0	144.3	144.3	144.3	116.3	4516.7
V. Price Contingency	143.3	180.9	239.8	167.4	203.8	238.7	270.6	312.6	313.8	333.8	314.4	360.5	411.3	467.1	518.8	585.1	658.1	594.8	6314.7
VI. Grand Total	825.8	727.4	756.6	441.5	468.0	490.3	507.2	542.8	510.7	513.9	461.4	507.5	558.3	614.1	663.1	729.4	802.4	711.0	10831.4

Note : * This amount is excluding Value Added Tax which has been introduced from 1st July, 1991.

表 7.1　灌漑排水開発事業（優先事業）

Bancharampur					Nabinagar					Kachua				
Rank	Canal (Khal) Name		Command Area	Canal Length	Rank	Canal (Khal) Name		Command Area	Canal Length	Rank	Canal (Khal) Name		Command Area	Canal Length
			ha	km				ha	km				ha	km
1	Kathakahali	1	70	9	1	Majikata	1	400	10	1	Sachar-Hajiganj	S1	250	16
2	Dulbanaga	2	600	13	2	Laur Fathepur	3	200	8	2	Karaya-Ragunathpur	S3	100	6
3	Murader	4	300	7	3	Adulmanil Chart	5	100	7	3	Uzani-Tatulia	S6	50	4
4	Nandalia	6	80	5	4	Birugan	7	380	5	4	Udara	S13	100	7.5
5	Pahariakandi	9	30	3	5	Begduhar	8	300	5	5	Kajkamta-Kamorkasha	S15	50	4.5
6	Kalakandisona	10	70	3	6	Rasullabad	11	360	10					
Total			ha 1150	km 40	Total			ha 1740	km 45	Total			ha 550	km 38

表 7.2 グロス・センター改修事業（優先事業）の施設計画

Kachua Upazila

	Item	Unit	Kachua	Sachar	Palakhal	Rahimanagar	Total
1	Bridge (12m L x 3.66m W)	no	1	0	0	0	1
2	Shed (New)	m2	192	270	270	405	1,137
3	Shed (Rehabilitation)	m2	768	0	0	0	768
4	Open Sale Platform	m2	540	135	270	270	1,215
5	Drain Ditch	m	1,233	168	214	221	1,836
6	Garbage Pit	no	12	3	4	5	24
7	Laterine	no	3	3	1	3	10
8	Water Supply System	no	3	2	1	5	11
9	Concrete Pavement (t=150)	m2	8,930	245	360	325	9,860
10	Expansion Area	m2	4,160	0	0	0	4,160

Nabinagar Upazila

	Item	Unit	Nabinagar	Bholachong	Sreeghar	Markuti	Total
1	Shed (New)	m2	540	270	270	270	1,350
2	Shed (Rehabilitation)	m2	0	0	0	0	0
3	Open Sale Platform	m2	270	270	270	270	1,080
4	Drain Ditch	m	1,206	286	307	300	2,099
5	Garbage Pit	no	8	4	4	4	20
6	Laterine	no	1	1	1	1	4
7	Water Supply System	no	2	1	2	1	6
8	Concrete Pavement (t=150)	m2	3,394	720	900	585	5,599
9	Expansion Area	m2	0	0	0	0	0

Bancharampur Uapzila

	Item	Unit	Mouilagonj	Marichakandi	Jibonganj	Ujanchar	Total
1	Shed (New)	m2	1,080	135	270	270	1,755
2	Shed (Rehabilitation)	m2	0	0	0	0	0
3	Open Sale Platform	m2	540	135	270	135	1,080
4	Drain Ditch	m	2,225	116	214	273	2,828
5	Garbage Pit	no	13	2	4	3	22
6	Laterine	no	3	1	2	2	8
7	Water Supply System	no	1	0	0	1	2
8	Concrete Pavement (t=150)	m2	8,549	180	360	769	9,858
9	Expansion Area	m2	0	0	0	0	0

Debidwar Upazila

	Item	Unit	Debidwar	Pirganji	Mohanpur	Jafargonj	Total
1	Shed (New)	m2	270	270	270	135	945
2	Shed (Rehabilitation)	m2	270	0	0	0	270
3	Open Sale Platform	m2	540	135	135	135	945
4	Drain Ditch	m	544	154	154	106	958
5	Garbage Pit	no	9	3	3	2	17
6	Laterine	no	1	1	1	1	4
7	Water Supply System	no	1	1	1	1	4
8	Concrete Pavement (t=150)	m2	3,568	195	195	230	4,188
9	Expansion Area	m2	2,080	0	0	0	2,080

表 7.3　優先事業の事業内容

Items	Unit	Phase I															Total				
		Stage-I (1993)					Stage-II (1994)					Stage-III (1995)									
		K	N	B	D	Total	K	N	B	D	Total	K	N	B	D	Total	K	N	B	D	Total
1. Irrigation Development and Drainage Improvement																					
1.1 Canal Re-excavation	km	16	5	13		34	13.5	20	14		47.5	8.5	20	13		41.5	38	45	40	0	123
1.2 Low Lift Pump (LLP)	nos	28	87	58		173					0					0	28	87	58	0	173
1.3 Workshop	place	1	1	1		3					0					0	1	1	1	0	3
2. Fractional Pumps (FP) Promotion	nos	50	50	50	50	200					0					0	50	50	50	50	200
3. Feeder and Rural Roads Improvement																					
3.1 Feeder B																					
3.1.1 Road Embankment	km			5	9.1	14.1	17.2	12.9	17.4	21.1	68.6			19.2		19.2	17.2	12.9	41.6	30.2	101.9
3.1.2 Bridge & Culvert	nos	14	4	12	10	40	14		15	26	55					0	28	4	27	36	95
3.1.3 Pavement, Tree Planting,etc	km					0		12.9			12.9	17.2		22.4	18.2	57.8	17.2	12.9	22.4	18.2	70.7
3.2 Rural Road																					
3.2.1 Road Embankment	km					0					0	5.5	19.5			25	5.5	19.5	0	0	25
3.2.2 Bridge & Culvert	nos		6			6		23			23	9		8	14	31	9	29	8	14	60
3.2.3 Pavement, Tree Planting,etc	km					0					0					0	0	0	0	0	0
4. UCCA Complex Establishment																					
4.1 Parboiled Rice Mill	place	1	1	1	1	4					0					0	1	1	1	1	4
4.2 Flour Mill	place	1	1	1	1	4					0					0	1	1	1	1	4
4.3 Oil Mill	place	1	1	1	1	4					0					0	1	1	1	1	4
4.4 Godown																					
4.4.1 Godown (500 ton)	place	1	1	1	1	4					0					0	1	1	1	1	4
5. Growth Center Improvement	place																				
5.1 G.C at U.HQ (Model G.C)	place	1	1	1	1	4											1	1	1	1	4
5.2 Growth Center	place						2	2	2	2	8	1	1	1	1	4	3	3	3	3	12

Note : K=Kachua, N= Nabinagar, B=Bancharampur, D=Debidwar, U.HQ= Upazila Headquarter

表 7.4　優先事業の事業費（Summary, 1/4）

(Unit : million Taka)

Items	Stage-I (1993)			Stage-II (1994)			Stage-III (1995)			Total		
	L/C	F/C	Total	L/C	F/C	Total	L/C	F/C	Total	L/C	F/C	Total
I. Direct Construction Cost												
1. Irrigation Development and Drainage Improvement	8.1	50.3	58.4	6.2	30.6	36.7	5.6	27.6	33.1	19.9	108.4	128.3
1.1 Canal Re-excavation	4.1	20.2	24.3	6.2	30.6	36.7	5.6	27.6	33.1	15.8	78.4	94.2
1.2 Low Lift Pump (LLP)	2.8	24.9	27.7	0.0	0.0	0.0	0.0	0.0	0.0	2.8	24.9	27.7
1.3 Workshop for LLPs	1.3	5.1	6.4	0.0	0.0	0.0	0.0	0.0	0.0	1.3	5.1	6.4
2. Fractional Pumps (FP) Promotion	3.0	19.0	22.0	1.0	1.0	2.0	1.0	1.0	2.0	5.0	21.0	26.0
3. Feeder and Rural Roads Improvement	91.2	279.4	370.6	201.2	627.2	828.4	176.6	669.8	846.4	468.9	1576.5	2045.4
3.1 Feeder B												
3.1.1 Road Embankment	11.7	59.2	70.9	34.0	172.5	206.6	19.9	100.9	120.8	65.6	332.6	398.2
3.1.2 Bridge & Culvert	68.8	188.2	257.1	114.7	289.3	403.9	0.0	0.0	0.0	183.5	477.5	661.0
3.1.3 Pavement, Tree Planting , Turfing	0.0	0.0	0.0	15.3	53.9	69.2	68.6	241.3	309.9	83.9	295.2	379.1
3.2 Rural Road												
3.2.1 Road Embankment	0.0	0.0	0.0	0.0	0.0	0.0	38.8	196.5	235.3	38.8	196.5	235.3
3.2.2 Bridge & Culvert	10.7	32.0	42.6	37.2	111.6	148.8	49.3	131.1	180.5	97.2	274.7	371.9
3.2.3 Pavement, Tree Planting , Turfing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. UCCA Complex Establishment	17.3	50.1	67.5	0.0	0.0	0.0	0.0	0.0	0.0	17.3	50.1	67.5
4.1 Parboiled Rice Mill	1.7	7.0	8.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7	7.0	8.7
4.2 Flour Mill	1.7	6.9	8.5	0.0	0.0	0.0	0.0	0.0	0.0	1.7	6.9	8.5
4.3 Oil Mill	1.7	7.0	8.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7	7.0	8.7
4.4 Godown (500 ton)	12.3	29.2	41.5	0.0	0.0	0.0	0.0	0.0	0.0	12.3	29.2	41.5
5. Growth Center Improvement	26.3	21.5	47.8	7.6	2.9	10.5	7.6	2.9	10.5	41.5	27.3	68.8
5.1 G.C at Headquarter (Model G.C)	26.3	21.5	47.8	0.0	0.0	0.0	0.0	0.0	0.0	26.3	21.5	47.8
5.2. Growth Center	0.0	0.0	0.0	7.6	2.9	10.5	7.6	2.9	10.5	15.2	5.8	21.0
Sub- total *	146.0	420.3	566.3	216.0	661.7	877.7	190.7	701.3	892.1	552.7	1783.4	2336.0
II. Administration	7.3	21.0	28.3	10.8	33.1	43.9	9.5	35.1	44.6	27.6	89.2	116.8
III. Physical Contingency	21.9	63.1	84.9	32.4	99.3	131.7	28.6	105.2	133.8	82.9	267.5	350.4
IV. Engineering Services	21.9	63.1	84.9	32.4	99.3	131.7	28.6	105.2	133.8	82.9	267.5	350.4
Total	197.0	567.5	764.5	291.5	893.3	1184.9	257.5	946.8	1204.3	746.1	2407.6	3153.7
V. Price Contingency	41.4	34.6	75.9	96.5	82.8	179.3	119.5	118.8	238.3	257.4	236.2	493.6
VI. Grand Total	238.4	602.0	840.5	388.0	976.2	1364.2	377.0	1065.6	1442.6	1003.5	2643.8	3647.3

Note : * This amount is excluding Value Added Tax which has been introduced from 1st July, 1991.

表 7.4　優先事業の事業費（ステージI, 2/4）

(Unit : million Taka)

Items	Work Quantity	Amount L/C	F/C	Total
I. Direct Construction Cost				
1 Irrigation Development and Drainage Improvement		8.1	50.3	58.4
1.1 Canal Re-excavation	34 km	4.1	20.2	24.3
1.2 Low Lift Pump (LLP)	173 nos	2.8	24.9	27.7
1.3 Workshop for LLPs	3 place	1.3	5.1	6.4
2 Fractional Pumps (FP) Promotion	200 nos	3.0	19.0	22.0
3 Feeder and Rural Roads Improvement		91.2	279.4	370.6
3.1 Feeder B				
3.1.1 Road Embankment	14.1 km	11.7	59.2	70.9
3.1.2 Bridge & Culvert	40 nos	68.8	188.2	257.1
3.1.3 Pavement, Tree Planting , Turffing	0 km	0.0	0.0	0.0
3.2 Rural Road				
3.2.1 Road Embankment	0 km	0.0	0.0	0.0
3.2.2 Bridge & Culvert	6 nos	10.7	32.0	42.6
3.2.3 Pavement, Tree Planting , Turffing	0 km	0.0	0.0	0.0
4 UCCA Complex Establishment		17.3	50.1	67.5
4.1 Parboiled Rice Mill	4 place	1.7	7.0	8.7
4.2 Flour Mill	4 place	1.7	6.9	8.5
4.3 Oil Mill	4 place	1.7	7.0	8.7
4.4 Godown (500 ton)	4 place	12.3	29.2	41.5
5 Growth Center Improvement		26.3	21.5	47.8
5.1 G.C at Headquarter (Model G.C)	4 place	26.3	21.5	47.8
5.2 Growth Center	0 place	0.0	0.0	0.0
Sub- total		146.0	420.3	566.3
II. Administration		7.3	21.0	28.3
III. Physical Contingency		21.9	63.1	84.9
IV. Engineering Services		21.9	63.1	84.9
Total		197.0	567.5	764.5
V. Price Contingency		41.4	34.6	75.9
VI. Grand Total		238.4	602.0	840.5

表 7.4　優先事業の事業費（ステージ II, 3/4）

(Unit : million Taka)

Items	Work Quantity	Amount L/C	F/C	Total
I. Direct Construction Cost				
1 Irrigation Development and Drainage Improvement		6.2	30.6	36.7
1.1 Canal Re-excavation	47.5 km	6.2	30.6	36.7
1.2 Low Lift Pump (LLP)	0 nos	0.0	0.0	0.0
1.3 Workshop for LLPs	0 place	0.0	0.0	0.0
2 Fractional Pumps (FP) Promotion	0 nos	1.0	1.0	2.0
3 Feeder and Rural Roads Improvement		201.2	627.2	828.4
3.1 Feeder B				
3.1.1 Road Embankment	68.6 km	34.0	172.5	206.6
3.1.2 Bridge & Culvert	55 nos	114.7	289.3	403.9
3.1.3 Pavement, Tree Planting , Turffing	12.9 km	15.3	53.9	69.2
3.2 Rural Road				
3.2.1 Road Embankment	0 km	0.0	0.0	0.0
3.2.2 Bridge & Culvert	23 nos	37.2	111.6	148.8
3.2.3 Pavement, Tree Planting , Turffing	0 km	0.0	0.0	0.0
4 UCCA Complex Establishment		0.0	0.0	0.0
4.1 Parboiled Rice Mill	0 place	0.0	0.0	0.0
4.2 *Flour Mill*	0 place	0.0	0.0	0.0
4.3 Oil Mill	0 place	0.0	0.0	0.0
4.4 Godown (500 ton)	0 place	0.0	0.0	0.0
5 Growth Center Improvement		7.6	2.9	10.5
5.1 G.C at Headquarter (Model G.C)	0 place	0.0	0.0	0.0
5.2 Growth Center	8 place	7.6	2.9	10.5
Sub- total		216.0	661.7	877.7
II. Administration		10.8	33.1	43.9
III. Physical Contingency		32.4	99.3	131.7
IV. Engineering Services		32.4	99.3	131.7
Total		291.5	893.3	1184.9
V. Price Contingency		96.5	82.8	179.3
VI. Grand Total		388.0	976.2	1364.2

表 7.4　優先事業の事業費（ステージ III, 4/4）

(Unit : million Taka)

Items	Work Quantity	Amount L/C	Amount F/C	Amount Total
I. Direct Construction Cost				
1 Irrigation Development and Drainage Improvement		5.6	27.6	33.1
1.1 Canal Re-excavation	41.5 km	5.6	27.6	33.1
1.2 Low Lift Pump (LLP)	0 nos	0.0	0.0	0.0
1.3 Workshop for LLPs	0 place	0.0	0.0	0.0
2 Fractional Pumps (FP) Promotion	0 nos	1.0	1.0	2.0
3 Feeder and Rural Roads Improvement		176.6	669.8	846.4
3.1 Feeder B				
3.1.1 Road Embankment	19.2 km	19.9	100.9	120.8
3.1.2 Bridge & Culvert	0 nos	0.0	0.0	0.0
3.1.3 Pavement, Tree Planting , Turffing	57.8 km	68.6	241.3	309.9
3.2 Rural Road				
3.2.1 Road Embankment	25 km	38.8	196.5	235.3
3.2.2 Bridge & Culvert	31 nos	49.3	131.1	180.5
3.2.3 Pavement, Tree Planting , Turffing	0 km	0.0	0.0	0.0
4 UCCA Complex Establishment		0.0	0.0	0.0
4.1 Parboiled Rice Mill	0 place	0.0	0.0	0.0
4.2 Flour Mill	0 place	0.0	0.0	0.0
4.3 Oil Mill	0 place	0.0	0.0	0.0
4.4 Godown (500 ton)	0 place	0.0	0.0	0.0
5 Growth Center Improvement		7.6	2.9	10.5
5.1 G.C at Headquarter (Model G.C)	0 place	0.0	0.0	0.0
5.2 Growth Center	4 place	7.6	2.9	10.5
Sub- total		190.7	701.3	892.1
II. Administration		9.5	35.1	44.6
III. Physical Contingency		28.6	105.2	133.8
IV. Engineering Services		28.6	105.2	133.8
Total		257.5	946.8	1204.3
V. Price Contingency		119.5	118.8	238.3
VI. Grand Total		377.0	1065.6	1442.6

表 7.5　MRDP-II 優先事業の組織機構図（1/2）

Name of Committee	Function	Member
Central Coordination Committee	1) Coordination at central level 2) Monitoring 3) Advising to the Project 4) Other necessary activities	1) Secretary, LGD[1)] 2) Representative of M/O Finance 3) Representative of Planning Commission 4) DG, BRDB 5) Engineering Advisor, LGEB 6) Project Advisor, Project Supporting Unit 7) Representatives of other related authorities

Note: 1) Chairman
2) Secretary will be nominated accordingly

表 7.5　MRDP-II 優先事業の組織機構図（2/2）

Name of Committee	Function	Member
Upazila Engineering Committee	1) Project implementation 2) Coordination for implementation 3) Inspection 4) Monitoring 5) Reporting results 6) Other necessary activities	1) Upazila Chairman[1)] 2) UNO 3) UCC Chairman 4) Leader, PSU (Upazila) 5) URDO 6) Assistant Commissioner (Land) 7) Related Experts, PSU 8) Upazila Engineer[2)] 9) Others
Upazila Production and Employment Committee	1) Same as above 6) 7) Encouraging cooperative activities	1) Upazila Chairman1) 2) Same as above 4) 5) U. Engineer 6) U. Livestock Officer 7) U. fishermen Officer 8) U. Agriculture Officer 9) Assistant Engineer, BADC 10) Representative, BSCIC 11) Project Administrator (Irrigation) 12) Related Experts, PSU 13) URDO[2)] 14) Others

Note: 1) Chairman
2) Member Secretary

表 7.6　MRDP-II 優先事業の事業支援団体 (Project Supporting Unit)

Expert on	No.	Covering Area
1. Project Advisor	1	Management of all PSUs Coordination in central and local level
2. Team leader	4	Management and coordination of PSU in each Upazila
3. Civil Engineer	2	Road, canal
4. Mechanic	8	LLPs/FPs, activities, maintenance, training, etc.
5. Business Management	2	Growth center, UCCA complex
6. Agronomy	4	Crop cultivation with irrigation
7. Extension	4	Extension activities
8. Fisheries	1	Fish culture
Total	26	

Note: 1) Team leader is preferably to be cooperative expert to cover all fields.

2) Two civil engineer experts, two business management experts and one expert of fisheries will cover all four upazilas.

表 7.7　LLPs事業のUCCA財務キャッシュフロー，カチュア郡（1/3）

Unit: Tk 1000

Year	Project Revenue			Initial Cost			LLP	Payment to	Expenditure					Total	
	Gov't Subsidy	Income from 28 WUAs	Total	Procure. of 28 LLPs	Workshop Installation	Total	Replace-ment	Upazila P. (Canal OM)	Workshop OM	Spare parts	Staff Salary	Miscella-neous	Sub-total	Cost	Balance
	(1)	(2)	(3)	(4)	(5)	(6)=(4)+(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)=(6)+(7)+(8)+(13)	(15)=(3)-(14)
1993	6,242	420	6,662	4,480	1,762	6,242	0	0	59	97	74	23	253	6,495	167
1994	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
1995	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
1996	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
1997	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
1998	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
1999	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2000	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2001	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2002	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2003	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2004	0	420	420	0	0	0	1,932	40	59	97	74	23	253	2,225	-1,805
2005	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2006	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2007	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2008	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2009	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
2010	0	420	420	0	0	0	0	40	59	97	74	23	253	293	127
Total	6,242	7,560	13,802	0 4,480	1,762	6,242	0 1,932	688	1,066	1,739	1,332	414	4,551	13,413	389

Reamerks (12): includes all the expenditures for staff training of operators and mechanics.
Cost of canal re-excavation is not inculed on this calculation sheet but that cost will be financed by government subsidy.
LLPs will be installed 87 in1993.
Replacement cost of LLP is based on local market price.
The value added tax is inclueded in replacement and spare parts cost.(15%)
Price escalation and contingency are excluded from all cost.

表 7.7　LLPs事業のUCCA財務キャッシュフロー，ナビナガール郡（2/3）

Unit: Tk 1000

Year	Project Revenue			Initial Cost			LLP	Payment to	Expenditure					Total	
	Gov't Subsidy	Income from 87 WUAs	Total	Procure. of 87 LLPs	Workshop Installation	Total	Replace-ment	Upazila P. (Canal OM)	Workshop OM	Spare parts	Staff Salary	Miscella-neous	Sub-total	Cost	Balance
	(1)	(2)	(3)	(4)	(5)	(6)=(4)+(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)=(6)+(7)+(8)+(13)	(15)=(3)-(14)
1993	19,395	1,044	20,439	13,920	5,475	19,395	0	0	160	261	230	65	716	20,111	328
1994	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
1995	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
1996	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
1997	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
1998	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
1999	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2000	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2001	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2002	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2003	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2004	0	1,218	1,218	0	0	0	5,220	126	160	261	230	65	716	6,062	-4,844
2005	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2006	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2007	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2008	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2009	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
2010	0	1,218	1,218	0	0	0	0	126	160	261	230	65	716	842	376
Total	19,395	21,750	41,145	0 13,920	5,475	19,395	0 5,220	2,137	2,880	4,698	4,140	1,172	12,890	39,642	1,503

Reamerks (12): includes all the expenditures for staff training of operators and mechanics.

Cost of canal re-excavation is not inculed on this calculation sheet but that cost will be financed by government subsidy.

LLPs will be installed 87 in1993.

Replacement cost of LLP is based on local market price.

The value added tax is inclueded in replacement and spare parts cost.(15%)

Price escalation and contingency are excluded from all cost.

表 7.7　LLPs事業のUCCA財務キャッシュフロー，バンチャランプール郡（3/3）

Unit: Tk 1000

Year	Project Revenue			Initial Cost			LLP	Payment to	Expenditure					Total	
	Gov't Subsidy	Income from 58 WUAs	Total	Procure. of 58 LLPs	Workshop Installation	Total	Replace-ment	Upazila P. (Canal OM)	Workshop OM	Spare parts	Staff Salary	Miscella-neous	Sub-total	Cost	Balance
	(1)	(2)	(3)	(4)	(5)	(6)=(4)+(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)=(6)+(7)+(8)+(13)	(15)=(3)-(14)
1993	12,930	696	13,626	9,280	3,650	12,930	0	0	107	174	153	43	477	13,407	219
1994	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
1995	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
1996	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
1997	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
1998	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
1999	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2000	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2001	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2002	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2003	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2004	0	812	812	0	0	0	3,480	84	107	174	153	43	477	4,041	-3,229
2005	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2006	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2007	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2008	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2009	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
2010	0	812	812	0	0	0	0	84	107	174	153	43	477	561	251
Total	12,930	14,500	27,430	0 9,280	3,650	12,930	0 3,480	1,425	1,920	3,132	2,760	781	8,593	26,428	1,002

Reamerks (12): includes all the expenditures for staff training of operators and mechanics.
Cost of canal re-excavation is not inculed on this calculation sheet but that cost will be financed by government subsidy.
LLPs will be installed 58 in1993.
Replacement cost of LLP is based on local market price.
The value added tax is inclueded in replacement and spare parts cost.(15%)
Price escalation and contingency are excluded from all cost.

表 7.8　LLPs事業の水利組合財務キャッシュフロー

Unit: 1000Tk

Year	Revenue	Expenditure			Payment to UCCA						Total	
	Watercharge (70 farmers)	Fuel	Salary of WUA staff	Sub-total	LLP Rental	Canal OM	Workshop OM	Spare parts	Miscella-neous	Sub-total	Recurrent Cost	Balance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)=(4)to(10)	(12)=(1)-(11)
1993	49	24	10	34	8	1	2	3	1	15	49	0
1994	49	24	10	34	8	1	2	3	1	15	49	0
1995	49	24	10	34	8	1	2	3	1	15	49	0
1996	49	24	10	34	8	1	2	3	1	15	49	0
1997	49	24	10	34	8	1	2	3	1	15	49	0
1998	49	24	10	34	8	1	2	3	1	15	49	0
1999	49	24	10	34	8	1	2	3	1	15	49	0
2000	49	24	10	34	8	1	2	3	1	15	49	0
2001	49	24	10	34	8	1	2	3	1	15	49	0
2002	49	24	10	34	8	1	2	3	1	15	49	0
2003	49	24	10	34	8	1	2	3	1	15	49	0
2004	49	24	10	34	8	1	2	3	1	15	49	0
2005	49	24	10	34	8	1	2	3	1	15	49	0
2006	49	24	10	34	8	1	2	3	1	15	49	0
2007	49	24	10	34	8	1	2	3	1	15	49	0
2008	49	24	10	34	8	1	2	3	1	15	49	0
2009	49	24	10	34	8	1	2	3	1	15	49	0
2010	49	24	10	34	8	1	2	3	1	15	49	0
Total	884	428	185	614	0 144	26	33	54	26	270	884	0

Remarks:
(1) Command area of an average LLP scheme is to be 20 ha to be managed by 70 farm families.
(2) Fuel consumption of LLP is estimated to be 1,700 liters/year which would cost Tk24,000.
(3) Salary consists of WUA manager and two pump operators.

表 7.9　FPs事業のUCCA財務キャッシュフロー

Unit: Tk 1000

Year	Project Revenue			Procure. of 50 FPs	Replace-ment of 50 FPs	Expenditure					Total Cost	Balance
	Gov't Subsidy	Income from KSSs	Total			Spare parts	Staff Salary	Wage for BSS	Miscella-neous	Sub-total		
	(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)=(7) to (10)	(12)=(5)+(6) +(11)	(13)=(3)-(12)
1993	6,000	1,200	7,200	6,000	0	129	80	600	81	890	6,890	310
1994	0	1,200	1,200	0	0	129	80	600	81	890	890	310
1995	0	1,200	1,200	0	0	129	80	600	81	890	890	310
1996	0	1,200	1,200	0	0	129	80	600	81	890	890	310
1997	0	1,200	1,200	0	0	129	80	600	81	890	890	310
1998	0	1,200	1,200	0	0	129	80	600	81	890	890	310
1999	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2000	0	1,200	1,200	0	2,588	129	80	600	81	890	3,478	-2,278
2001	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2002	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2003	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2004	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2005	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2006	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2007	0	1,200	1,200	0	2,588	129	80	600	81	890	3,478	-2,278
2008	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2009	0	1,200	1,200	0	0	129	80	600	81	890	890	310
2010	0	1,200	1,200	0	0	129	80	600	81	890	890	310
Total	6,000	21,600	27,600	6,000	5,175	2,329	1,440	10,800	1,457	16,026	27,201	399

Remarks: (5): Each UCCA will manege 50 units of FPs by employing 50 BSS groups.
(6): FPs will be replaced every 7 years under the responsibilities of UCCA.
(9): FPs will be operated by 50 BSS groups.
(10): includes all the expenditures for staff training of BSS operators and mechanics.
The value added tax is included in replacement and spare parts.
Price escalation and contingency are excluded from all cost.

表 7.10 フィーダーB・ルーラル道路改修事業の郡財務キャッシュフロー (1/4)
カチュア郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	Upazila Budget	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	244,200	310	244,510	244,200	310	244,510	0
1994	99,400	344	99,744	99,400	344	99,744	0
1995	92,200	454	92,654	92,200	454	92,654	0
1996	0	454	454	0	454	454	0
1997	0	454	454	0	454	454	0
1998	0	454	454	0	454	454	0
1999	0	454	454	0	454	454	0
2000	0	454	454	0	454	454	0
2001	0	454	454	0	454	454	0
2002	0	454	454	0	454	454	0
2003	0	454	454	0	454	454	0
2004	0	454	454	0	454	454	0
2005	0	454	454	0	454	454	0
2006	0	454	454	0	454	454	0
2007	0	454	454	0	454	454	0
2008	0	454	454	0	454	454	0
2009	0	454	454	0	454	454	0
2010	0	454	454	0	454	454	0
Total	435,800	7,918	443,718	0 435,800	7,918	443,718	0

Note; Construction cost is used the direct cost .O&M cost includes the value added tax 15%.
Source; Computed from Annex J

表 7.10 フィーダーB・ルーラル道路改修事業の郡財務キャッシュフロー (2/4)
ナビナガール郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	Upazila Budget	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	104,100	390	104,490	104,100	390	104,490	0
1994	106,200	648	106,848	106,200	648	106,848	0
1995	103,900	748	104,648	103,900	748	104,648	0
1996	0	748	748	0	748	748	0
1997	0	748	748	0	748	748	0
1998	0	748	748	0	748	748	0
1999	0	748	748	0	748	748	0
2000	0	748	748	0	748	748	0
2001	0	748	748	0	748	748	0
2002	0	748	748	0	748	748	0
2003	0	748	748	0	748	748	0
2004	0	748	748	0	748	748	0
2005	0	748	748	0	748	748	0
2006	0	748	748	0	748	748	0
2007	0	748	748	0	748	748	0
2008	0	748	748	0	748	748	0
2009	0	748	748	0	748	748	0
2010	0	748	748	0	748	748	0
Total	314,200	13,006	327,206 0	314,200	13,006	327,206	0

Note; Construction cost is used the direct cost .O&M cost includes the value added tax 15%.
Source; Computed from Annex J

表 7.10 フィーダーB・ルーラル道路改修事業の郡財務キャッシュフロー (3/4)
バンチャランプール郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	Upazila Budget	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	206,800	448	207,248	206,800	448	207,248	0
1994	189,600	832	190,432	189,600	832	190,432	0
1995	166,800	910	167,710	166,800	910	167,710	0
1996	0	910	910	0	910	910	0
1997	0	910	910	0	910	910	0
1998	0	910	910	0	910	910	0
1999	0	910	910	0	910	910	0
2000	0	910	910	0	910	910	0
2001	0	910	910	0	910	910	0
2002	0	910	910	0	910	910	0
2003	0	910	910	0	910	910	0
2004	0	910	910	0	910	910	0
2005	0	910	910	0	910	910	0
2006	0	910	910	0	910	910	0
2007	0	910	910	0	910	910	0
2008	0	910	910	0	910	910	0
2009	0	910	910	0	910	910	0
2010	0	910	910	0	910	910	0
Total	563,200	15,840	579,040	0 563,200	15,840	579,040	0

Note; Construction cost is used the direct cost .O&M cost includes the value added tax 15%.
Source; Computed from Annex J

表 7.10 フィーダーB・ルーラル道路改修事業の郡財務キャッシュフロー (4/4)
デビッドウォール郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	Upazila Budget	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	216,100	328	216,428	216,100	328	216,428	0
1994	148,400	568	148,968	148,400	568	148,968	0
1995	173,600	904	174,504	173,600	904	174,504	0
1996	0	904	904	0	904	904	0
1997	0	904	904	0	904	904	0
1998	0	904	904	0	904	904	0
1999	0	904	904	0	904	904	0
2000	0	904	904	0	904	904	0
2001	0	904	904	0	904	904	0
2002	0	904	904	0	904	904	0
2003	0	904	904	0	904	904	0
2004	0	904	904	0	904	904	0
2005	0	904	904	0	904	904	0
2006	0	904	904	0	904	904	0
2007	0	904	904	0	904	904	0
2008	0	904	904	0	904	904	0
2009	0	904	904	0	904	904	0
2010	0	904	904	0	904	904	0
Total	538,100	15,360	553,460	0 538,100	15,360	553,460	0

Note; Construction cost is used the direct cost .O&M cost includes the value added tax 15%.
Source; Computed from Annex J

表 7.11 UCCAコンプレックス設立事業のUCCA財務キャッシュフロー

Unit: Tk 1000

Year	Project Revenue			Initial Cost			Replace. of Mills	Payment to Upazila P. (GC Lease)	Expenditure							Total Cost	Balance
	Govt Subsidy	Sale of Products	Total	Installation of Mills	Installation of Storage	Total			Purchasing of Raw Material	Electiricity	Spare parts	Staff Salary	Labour Wage	Miscella-neous	Sub-total		
	(1)	(2)	(3)	(4)	(5)	(6)=(4)+(5)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)=(6)+(7)+(8)+(15)	(17)=(3)-(15)
1993	18,400	0	18,400	6,500	11,900	18,400	0	0	0	0	0	288	0	14	302	18,702	-302
1994	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
1995	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
1996	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
1997	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
1998	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
1999	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2000	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2001	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2002	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2003	0	38,620	38,620	0	0	0	7,475	50	27,850	960	442	288	360	1,495	31,395	38,920	-300
2004	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2005	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2006	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2007	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2008	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2009	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
2010	0	38,620	38,620	0	0	0	0	50	27,850	960	442	288	360	1,495	31,395	31,445	7,175
Total	18,400	656,540	674,940	0 6,500	11,900	18,400	0 7,475	850	473,450	16,320	7,517	5,184	6,120	25,430	534,021	560,746	114,194

Reamerks (13): Includes all the expenditures for staff training of operators and mechanics.

Finanshal cash flow sheets are same for each four UUCAs according to plan and operation.

The value added tax is included in replacement and spare parts.

Construction cost is used the direct cost.

表 7.12 グロス・センター改修事業の郡財務キャッシュフロー (1/4)
カチュア郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	GC Lease Money	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	22,900	156	23,056	22,900	156	23,056	0
1994	3,100	174	3,274	3,100	174	3,274	0
1995	3,100	191	3,291	3,100	191	3,291	0
1996	0	191	191	0	191	191	0
1997	0	191	191	0	191	191	0
1998	0	191	191	0	191	191	0
1999	0	191	191	0	191	191	0
2000	0	191	191	0	191	191	0
2001	0	191	191	0	191	191	0
2002	0	191	191	0	191	191	0
2003	0	191	191	0	191	191	0
2004	0	191	191	0	191	191	0
2005	0	191	191	0	191	191	0
2006	0	191	191	0	191	191	0
2007	0	191	191	0	191	191	0
2008	0	191	191	0	191	191	0
2009	0	191	191	0	191	191	0
2010	0	191	191	0	191	191	0
Total	29,100	3,393	32,493	0 29,100	3,393	32,493	0

Remarks; Growth centers will be constructed as following,Kachua GC in 1993, Sachar and Paris khal in 1994 and Rahimnagar in 1995.
The added tax is included in O & M cost.
Construction cost is used the direct cost.

表 7.12 グロス・センター改修事業の郡財務キャッシュフロー (2/4)
ナビナガール郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	GC Lease Money	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	5,200	54	5,254	5,200	54	5,254	0
1994	3,100	70	3,170	3,100	70	3,170	0
1995	3,100	87	3,187	3,100	87	3,187	0
1996	0	87	87	0	87	87	0
1997	0	87	87	0	87	87	0
1998	0	87	87	0	87	87	0
1999	0	87	87	0	87	87	0
2000	0	87	87	0	87	87	0
2001	0	87	87	0	87	87	0
2002	0	87	87	0	87	87	0
2003	0	87	87	0	87	87	0
2004	0	87	87	0	87	87	0
2005	0	87	87	0	87	87	0
2006	0	87	87	0	87	87	0
2007	0	87	87	0	87	87	0
2008	0	87	87	0	87	87	0
2009	0	87	87	0	87	87	0
2010	0	87	87	0	87	87	0
Total	11,400	1,522	12,922	0 11,400	1,522	12,922	0

Remarks; Growth centers will be constructed as following,Nabinagar GC in 1993, Bholachang and Sreeghar in 1994 and Makuti in 1995.
The added tax is included in O & M cost.
Construction cost is used the direct cost.

表 7.12 グロス・センター改修事業の郡財務キャッシュフロー (3/4)
バンチャランプール郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	GC Lease Money	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	11,300	89	11,389	11,300	89	11,389	0
1994	2,400	103	2,503	2,400	103	2,503	0
1995	2,400	117	2,517	2,400	117	2,517	0
1996	0	117	117	0	117	117	0
1997	0	117	117	0	117	117	0
1998	0	117	117	0	117	117	0
1999	0	117	117	0	117	117	0
2000	0	117	117	0	117	117	0
2001	0	117	117	0	117	117	0
2002	0	117	117	0	117	117	0
2003	0	117	117	0	117	117	0
2004	0	117	117	0	117	117	0
2005	0	117	117	0	117	117	0
2006	0	117	117	0	117	117	0
2007	0	117	117	0	117	117	0
2008	0	117	117	0	117	117	0
2009	0	117	117	0	117	117	0
2010	0	117	117	0	117	117	0
Total	16,100	2,060	18,160	0 16,100	2,060	18,160	0

Remarks; Growth centers will be constructed as following,Bancharampur GC in 1993,
Marichandi and Jibongonj in 1994 and Ujanchar in 1995.
The added tax is included in O & M cost.
Construction cost is used the direct cost.

表 7.12 グロス・センター改修事業の郡財務キャッシュフロー (4/4)
デビッドウォール郡

Unit: Tk 1000

Year	Project Fund			Project Cost			Balance
	Gov't Subsidy	GC Lease Money	Total	Const. Cost	OM Cost	Total	
	(1)	(2)	(3)=(1)+(2)	(4)	(5)	(6)=(4)+(5)	(7)=(3)-(6)
1993	8,300	72	8,372	8,300	72	8,372	0
1994	1,900	83	1,983	1,900	83	1,983	0
1995	1,900	94	1,994	1,900	94	1,994	0
1996	0	94	94	0	94	94	0
1997	0	94	94	0	94	94	0
1998	0	94	94	0	94	94	0
1999	0	94	94	0	94	94	0
2000	0	94	94	0	94	94	0
2001	0	94	94	0	94	94	0
2002	0	94	94	0	94	94	0
2003	0	94	94	0	94	94	0
2004	0	94	94	0	94	94	0
2005	0	94	94	0	94	94	0
2006	0	94	94	0	94	94	0
2007	0	94	94	0	94	94	0
2008	0	94	94	0	94	94	0
2009	0	94	94	0	94	94	0
2010	0	94	94	0	94	94	0
Total	12,100	1,654	13,754	0 12,100	1,654	13,754	0

Remarks; Growth centers will be constructed as following,Debidwar GC in 1993, Pirgangj and Mohanpur in 1994 and Jafagonji in 1995.
The added tax is included in O & M cost.
Construction cost is used the direct cost.

表 7.13 優先事業の経済キャッシュフロー

		Cost				Benefit	
No	Year	Initial	O&M	Replacement	Total	Gross	Net
1	1993	1,070,358	2,138	0	1,072,496	28,214	-1,044,282
2	1994	656,119	9,267	0	665,386	97,354	-568,032
3	1995	644,385	11,428	0	655,813	133,849	-521,964
4	1996	0	13,589	0	13,589	162,737	149,148
5	1997	0	13,589	0	13,589	166,165	152,576
6	1998	0	13,589	0	13,589	171,553	157,964
7	1999	0	13,589	0	13,589	174,001	160,412
8	2000	0	13,589	18,040	31,629	177,920	146,291
9	2001	0	13,589	0	13,589	182,328	168,739
10	2002	0	13,589	0	13,589	186,246	172,657
11	2003	0	13,589	44,034	57,623	186,246	128,623
12	2004	0	13,589	0	13,589	186,246	172,657
13	2005	0	13,589	0	13,589	186,246	172,657
14	2006	0	13,589	0	13,589	186,246	172,657
15	2007	0	13,589	18,040	31,629	186,246	154,617
16	2008	0	13,589	0	13,589	186,246	172,657
17	2009	0	13,589	0	13,589	186,246	172,657
18	2010	0	13,589	0	13,589	186,246	172,657
19	2011	0	13,589	0	13,589	186,246	172,657
20	2012	0	13,589	0	13,589	186,246	172,657
21	2013	0	13,589	44,034	57,623	186,246	128,623
22	2014	0	13,589	18,040	31,629	186,246	154,617
23	2015	0	13,589	0	13,589	186,246	172,657
24	2016	0	13,589	0	13,589	186,246	172,657
25	2017	0	13,589	0	13,589	186,246	172,657
26	2018	0	13,589	0	13,589	186,246	172,657
27	2019	0	13,589	0	13,589	186,246	172,657
28	2020	0	13,589	0	13,589	186,246	172,657
29	2021	0	13,589	18,040	31,629	186,246	154,617
30	2022	0	13,589	0	13,589	186,246	172,657
Total		2,370,862	389,737	160,228	2,920,826 0	5,205,287	2,284,461
NVP			10%	-698,825	15%	-970,617	
B/C Ratio			10%	0.7	15%	0.5	
EIRR	=		5%				

表 7.14 優先事業（ステージI）の経済キャッシュフロー

	Cost				Benefit	
Year	Initial	O&M	Replacement	Total	Gross	Net
1993	626,894	2,138	0	629,032	11,468	-617,564
1994	0	9,267	0	9,267	44,197	34,930
1995	0	9,267	0	9,267	55,666	46,399
1996	0	9,267	0	9,267	64,029	54,762
1997	0	9,267	0	9,267	65,401	56,134
1998	0	9,267	0	9,267	67,556	58,289
1999	0	9,267	0	9,267	68,535	59,268
2000	0	9,267	18,040	27,307	70,103	42,796
2001	0	9,267	0	9,267	71,866	62,599
2002	0	9,267	0	9,267	73,433	64,166
2003	0	9,267	44,034	53,301	73,433	20,132
2004	0	9,267	0	9,267	73,433	64,166
2005	0	9,267	0	9,267	73,433	64,166
2006	0	9,267	0	9,267	73,433	64,166
2007	0	9,267	18,040	27,307	73,433	46,126
2008	0	9,267	0	9,267	73,433	64,166
2009	0	9,267	0	9,267	73,433	64,166
2010	0	9,267	0	9,267	73,433	64,166
2011	0	9,267	0	9,267	73,433	64,166
2012	0	9,267	0	9,267	73,433	64,166
2013	0	9,267	44,034	53,301	73,433	20,132
2014	0	9,267	18,040	27,307	73,433	46,126
2015	0	9,267	0	9,267	73,433	64,166
2016	0	9,267	0	9,267	73,433	64,166
2017	0	9,267	0	9,267	73,433	64,166
2018	0	9,267	0	9,267	73,433	64,166
2019	0	9,267	0	9,267	73,433	64,166
2020	0	9,267	0	9,267	73,433	64,166
2021	0	9,267	18,040	27,307	73,433	46,126
2022	0	9,267	0	9,267	73,433	64,166
al	626,894	270,876	160,228	1,057,998 0	2,060,914	1,002,916
NVP		15%	-241,635	20%	-300,537	
B/C Ratio		15%	0.6	20%	0.5	
EIRR	=	8%				

表 7.15 雇用機会の創出

(a) LLP Project

1)	Permanent staff	8 persons x 25 day x 12 month	=	2,400 man-day
		2,400 man-day x 3 Upazila	=	7,200 man-day
2)	Labour	6 persons x 25 day x 4 month	=	600 man-day
		600 man-day x 173 WUAs	=	103,800
3)	Crop Labour			196,000 man-day
		Sub-total		307,000 man-day/year

(b) FP Project

1)	Permanent staff	8 persons x 25 day x 12 month	=	2,400 man-day
		2,400 man-day x 4 Upazila	=	9,600 man-day
2)	Labour	3 persons x 25 day x 4 month	=	300 man-day
		300 man-day x 200 FPS	=	60,000
3)	Crop labour			19,000 man-day
		Sub-total		88,600 man-day/year

(c) UCCA Complex Project

1)	Permanent staff	12 persons x 25 day x 12 month	=	3,600 man-day
2)	Labour	26 persons x 25 day x 12 month	=	7,800 man-day
		11,400 man-day x 4 Upazilas	=	45,600 man-day/year
		Sub-total		45,600 man-day/year

(d) Growth Center Improvement Project

1)	Labour	4 persons x 8 day x 12 month	=	384 man-day
		384 man-day x 4 Upazilas	=	1,536 man-day
		Sub-total approx.		1,500 man-day/year

(e) Feeder B and Rural Road Improvement Project

1)	Techinical staff	8 persons x 8 day x 12 month	=	768 man-day
2)	Labour	1p./km x 88 km x 25day x 12 m	=	26,400 man-day
		Sub-total approx		27,000 man-day/year