F-3.2 Project Cost

TABLE F-3.2.1(1) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-1 (7 years-period)
(Viet Nam Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	955,526	106,170	0	1,061,696
Electric Equipment	433,463	288,976	65,020	787,459
Pump House (410m2)	65,600	16,400	3,280	85,280
Overhead 10% of Cvl+Ho	114,301	37,179	1,515	152,994
Profits 3%	79,389	24,123	31,054	134,566
Sub-total	2,725,686	828,238	100,868	3,654,792
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
Sub-total of Item 1	4,788,951	2,677,768	100,868	7,567,587
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	478,895	267,777	5,043	751,715
d. Project Administration	47,890	267,777	0	315,666
Sub-total of Item 2	1,776,785	783,054	192,543	2,752,382
Total(1+2)	6,565,736	3,460,821	293,411	10,319,968
3. Physical Contingency	656,574	346,082	29,341	1,031,997
4. Price Escalation	909,897	874,499		1,784,396
Grand total	8,132,206	4,681,402	322,753	13,136,361

TABLE F-3.2.1(2) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-1 (7 years-period)
(Viet Nam Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	862,683	575,122	0	1,437,805
Electric Equipment	471,055	314,037	70,658	855,750
Pump House (546m2)	87,360	98,280	4,368	190,008
Overhead 10% of Cvl+Ho	152,031	57,095	2,091	211,217
Profits 3%	90,182	45,516	40,710	176,408
Sub-total	3,096,263	1,562,718	117,827	4,776,809
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
d. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	6,651,701	5,543,138	117,827	12,312,666
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	665,170	554,314	5,891	1,225,375
d. Project Administration	66,517	554,314	0	620,831
Sub-total of Item 2	1,981,687	1,358,128	193,391	3,533,206
Total(1+2)	8,633,388	6,901,266	311,218	15,845,872
3. Physical Contingency	863,339	690,127	31,122	1,584,587
4. Price Escalation	1,145,010	1,506,477		2,651,488
Grand total	10,641,738	9,097,870	342,340	20,081,948

TABLE F-3.2.1(3) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-2 (7 years-period)
(Viet Nam Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	955,526	106,170	0	1,061,696
Electric Equipment	433,463	288,976	65,020	787,459
Pump House (410m2)	65,600	16,400	3,280	85,280
Overhead 10% of Cvl+Ho	114,301	37,179	1,515	152,994
Profits 3%	79,389	24,123	31,054	134,566
Sub-total	2,725,686	828,238	100,868	3,654,792
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
Sub-total of Item 1	5,111,055	4,074,993	100,868	9,286,916
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	511,106	407,499	5,043	923,648
d. Project Administration	51,111	407,499	0	458,610
Sub-total of Item 2	1,812,216	1,062,499	192,543	3,067,258
Total(1+2)	6,923,271	5,137,492	293,411	12,354,174
3. Physical Contingency	692,327	513,749	29,341	1,235,417
4. Price Escalation	990,689	1,406,868		2,397,557
Grand total	8,606,288	7,058,109	322,753	15,987,149

TABLE F-3.2.1(4) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-2 (7 years-period)
(Viet Nam Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	862,683	575,122	0	1,437,805
Electric Equipment	471,055	314,037	70,658	855,750
Pump House (546m2)	87,360	98,280	4,368	190,008
Overhead 10% of Cvl+Ho	152,031	57,095	2,091	211,217
Profits 3%	90,182	45,516	40,710	176,408
Sub-total	3,096,263	1,562,718	117,827	4,776,809
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
e. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	6,975,744	6,946,050	117,827	14,039,621
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	697,574	694,605	5,891	1,398,071
d. Project Administration	69,757	694,605	0	764,362
Sub-total of Item 2	2,017,332	1,638,710	193,391	3,849,433
Total(1+2)	8,993,075	8,584,761	311,218	17,889,054
3. Physical Contingency	899,308	858,476	31,122	1,788,905
4. Price Escalation	1,226,344	2,041,327		3,267,671
Grand total	11,118,727	11,484,564	342,340	22,945,631

TABLE F-3.2.1(5) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-3 (7 years-period)
(Viet Nam Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	955,526	106,170	0	1,061,696
Electric Equipment	433,463	288,976	65,020	787,459
Pump House (410m2)	65,600	16,400	3,280	85,280
Overhead 10% of Cvl+Ho	114,301	37,179	1,515	152,994
Profits 3%	79,389	24,123	31,054	134,566
Sub-total	2,725,686	828,238	100,868	3,654,792
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
d. Pond Construction	234,000	26,000	2,340	262,340
Sub-total of Item 1	5,345,055	4,100,993	103,208	9,549,256
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	534,506	410,099	5,043	949,648
d. Project Administration	53,451	410,099	0	463,550
Sub-total of Item 2	1,837,956	1,067,699	192,543	3,098,198
Total(1+2)	7,183,011	5,168,692	295,751	12,647,454
3. Physical Contingency	718,301	516,869	29,575	1,264,745
4. Price Escalation	1,066,181	1,420,904		2,487,085
Grand total	8,967,494	7,106,465	325,327	16,399,285

TABLE F-3.2.1(6) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-3 (7 years-period)
(Viet Nam Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	862,683	575,122	0	1,437,805
Electric Equipment	471,055	314,037	70,658	855,750
Pump House (546m2)	87,360	98,280	4,368	190,008
Overhead 10% of Cvl+Ho	152,031	57,095	2,091	211,217
Profits 3%	90,182	45,516	40,710	176,408
Sub-total	3,096,263	1,562,718	117,827	4,776,809
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
d. Pond Construction	234,000	234,000	4,212	472,212
e. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	7,209,744	7,180,050	122,039	14,511,833
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	720,974	718,005	5,891	1,444,871
d. Project Administration	72,097	718,005	0	790,102
Sub-total of Item 2	2,043,072	1,685,510	193,391	3,921,973
Total(1+2)	9,252,815	8,865,561	315,430	18,433,806
3. Physical Contingency	925,282	886,556	31,543	1,843,381
4. Price Escalation	1,301,817	2,159,583		3,461,399
Grand total	11,479,914	11,911,699	346,973	23,738,587

TABLE F-3.2.1(7) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-1 (7 years-period)
(Foreign Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	7,838,678	870,964	0	8,709,642
Electric Equipment	3,559,516	395,502	533,927	4,488,945
Pump House (410m2)	295,200	73,800	14,760	383,760
Overhead 10% of Cvl+Ho	137,261	42,919	1,802	181,981
Profits 3%	387,242	52,157	131,820	571,219
Sub-total	13,295,304	1,790,732	682,309	15,768,345
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
Sub-total of Item 1	15,358,568	3,640,262	682,309	19,681,139
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	1,535,857	364,026	34,115	1,933,998
d. Project Administration	153,586	364,026	0	517,612
Sub-total of Item 2	2,939,442	975,552	221,615	4,136,610
Total(1+2)	18,298,011	4,615,815	903,924	23,817,750
3. Physical Contingency	1,829,801	461,581	90,392	2,381,775
4. Price Escalation	2,244,004	1,082,253		3,326,257
Grand total	22,371,816	6,159,649	994,317	29,525,782

TABLE F-3.2.1(8) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-1 (7 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	11,496,573	1,277,397	0	12,773,970
Electric Equipment	4,116,784	457,421	617,518	5,191,723
Pump House (546m2)	393,120	98,280	19,656	511,056
Overhead 10% of Cvl+Ho	182,607	57,095	2,397	242,099
Profits 3%	528,661	70,886	179,864	779,411
Sub-total	18,150,697	2,433,747	819,435	21,403,879
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
d. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	21,706,135	6,414,166	819,435	28,939,736
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	2,170,614	641,417	40,972	2,853,002
d. Project Administration	217,061	641,417	0	858,478
Sub-total of Item 2	3,637,675	1,532,333	228,472	5,398,480
Total(1+2)	25,343,810	7,946,500	1,047,907	34,338,216
3. Physical Contingency	2,534,381	794,650	104,791	3,433,822
4. Price Escalation	3,035,340	1,694,493		4,729,834
Grand total	30,913,531	10,435,643	1,152,697	42,501,872

TABLE F-3.2.1(9) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-2 (7 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	7,838,678	870,964	0	8,709,642
Electric Equipment	3,559,516	395,502	533,927	4,488,945
Pump House (410m2)	295,200	73,800	14,760	383,760
Overhead 10% of Cvl+Ho	137,261	42,919	1,802	181,981
Profits 3%	387,242	52,157	131,820	571,219
Sub-total	13,295,304	1,790,732	682,309	15,768,345
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
Sub-total of Item 1	15,680,672	5,037,488	682,309	21,400,469
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	1,568,067	503,749	34,115	2,105,931
d. Project Administration	156,807	503,749	0	660,556
Sub-total of Item 2	2,974,874	1,254,998	221,615	4,451,487
Total(1+2)	18,655,546	6,292,485	903,924	25,851,956
3. Physical Contingency	1,865,555	629,249	90,392	2,585,196
4. Price Escalation	2,324,793	1,614,962		3,939,755
Grand total	22,845,894	8,536,696	994,317	32,376,907

TABLE F-3.2.1(10) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-2 (7 years-period)
(Foreign Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	11,496,573	1,277,397	0	12,773,970
Electric Equipment	4,116,784	457,421	617,518	5,191,723
Pump House (546m2)	393,120	98,280	19,656	511,056
Overhead 10% of Cvl+Ho	182,607	57,095	2,397	242,099
Profits 3%	528,661	70,886	179,864	779,411
Sub-total	18,150,697	2,433,747	819,435	21,403,879
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
d. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	22,030,178	7,817,079	819,435	30,666,691
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	2,203,018	781,708	40,972	3,025,697
d. Project Administration	220,302	781,708	0	1,002,010
Sub-total of Item 2	3,673,320	1,812,916	228,472	5,714,707
Total(1+2)	25,703,497	9,629,995	1,047,907	36,381,398
3. Physical Contingency	2,570,350	962,999	104,791	3,638,140
4. Price Escalation	3,116,677	2,229,684		5,346,361
Grand total	31,390,524	12,822,678	1,152,697	45,365,899

TABLE F-3.2.1(11) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-3 (7 years-period)
(Foreign Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	7,838,678	870,964	0	8,709,642
Electric Equipment	3,559,516	395,502	533,927	4,488,945
Pump House (410m2)	295,200	73,800	14,760	383,760
Overhead 10% of Cvl+Ho	137,261	42,919	1,802	181,981
Profits 3%	387,242	52,157	131,820	571,219
Sub-total	13,295,304	1,790,732	682,309	15,768,345
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
d. Pond Construction	234,000	26,000	2,340	262,340
Sub-total of Item 1	15,914,672	5,063,488	684,649	21,662,809
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	1,591,467	506,349	34,115	2,131,931
d. Project Administration	159,147	506,349	0	665,496
Sub-total of Item 2	3,000,614	1,260,198	221,615	4,482,427
Total(1+2)	18,915,286	6,323,685	906,264	26,145,236
3. Physical Contingency	1,891,529	632,369	90,626	2,614,524
4. Price Escalation	2,400,288	1,628,658		4,028,946
Grand total	23,207,103	8,584,712	996,891	32,788,706

TABLE F-3.2.1(12) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-3 (7 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	11,496,573	1,277,397	0	12,773,970
Electric Equipment	4,116,784	457,421	617,518	5,191,723
Pump House (546m2)	393,120	98,280	19,656	511,056
Overhead 10% of Cvl+Ho	182,607	57,095	2,397	242,099
Profits 3%	528,661	70,886	179,864	779,411
Sub-total	18,150,697	2,433,747	819,435	21,403,879
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
d. Pond Construction	234,000	234,000	4,212	472,212
e. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	22,264,177	8,051,079	823,647	31,138,903
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	2,226,418	805,108	40,972	3,072,497
d. Project Administration	222,642	805,108	0	1,027,750
Sub-total of Item 2	3,699,060	1,859,716	228,472	5,787,247
Total(1+2)	25,963,237	9,910,795	1,052,119	36,926,150
3. Physical Contingency	2,596,324	991,080	105,212	3,692,615
4. Price Escalation	3,192,149	2,347,599		5,539,748
Grand total	31,751,710	13,249,474	1,157,330	46,158,514

TABLE F-3.2.1(13) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-1 (4 years-period)
(Viet Nam Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	955,526	106,170	0	1,061,696
Electric Equipment	433,463	288,976	65,020	787,459
Pump House (410m2)	65,600	16,400	3,280	85,280
Overhead 10% of Cvl+Ho	114,301	37,179	1,515	152,994
Profits 3%	79,389	24,123	31,054	134,566
Sub-total	2,725,686	828,238	100,868	3,654,792
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
Sub-total of Item 1	4,788,951	2,677,768	100,868	7,567,587
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	478,895	267,777	5,043	751,715
d. Project Administration	47,890	267,777	0	315,666
Sub-total of Item 2	1,776,785	783,054	192,543	2,752,382
Total(1+2)	6,565,736	3,460,821	293,411	10,319,968
3. Physical Contingency	656,574	346,082	29,341	1,031,997
4. Price Escalation	770,113	683,067		1,453,180
Grand total	7,992,422	4,489,970	322,753	12,805,145

TABLE F-3.2.1(14) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-1 (4 years-period)
(Viet Nam Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	862,683	575,122	0	1,437,805
Electric Equipment	471,055	314,037	70,658	855,750
Pump House (546m2)	87,360	98,280	4,368	190,008
Overhead 10% of Cvl+Ho	152,081	57,095	2,091	211,217
Profits 3%	90,182	45,516	40,710	176,408
Sub-total	3,096,263	1,562,718	117,827	4,776,809
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
d. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	6,651,701	5,543,138	117,827	12,312,666
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	665,170	554,314	5,891	1,225,375
d. Project Administration	66,517	554,314	0	620,831
Sub-total of Item 2	1,981,687	1,358,128	193,391	3,533,206
Total(1+2)	8,633,388	6,901,266	311,218	15,845,872
3. Physical Contingency	863,339	690,127	31,122	1,584,587
4. Price Escalation	1,018,763	1,279,637		2,298,400
Grand total	10,515,490	8,871,029	342,340	19,728,859

TABLE F-3.2.1(15) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-2 (4 years-period)
(Viet Nam Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	955,526	106,170	0	1,061,696
Electric Equipment	433,463	288,976	65,020	787,459
Pump House (410m2)	65,600	16,400	3,280	85,280
Overhead 10% of Cvl+Ho	114,301	37,179	1,515	152,994
Profits 3%	79,389	24,123	31,054	134,566
Sub-total	2,725,686	828,238	100,868	3,654,792
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
Sub-total of Item 1	5,111,055	4,074,993	100,868	9,286,916
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	511,106	407,499	5,043	923,648
d. Project Administration	51,111	407,499	0	458,610
Sub-total of Item 2	1,812,216	1,062,499	192,543	3,067,258
Total(1+2)	6,923,271	5,137,492	293,411	12,354,174
3. Physical Contingency	692,327	513,749	29,341	1,235,417
4. Price Escalation	805,090	915,562		1,720,652
Grand total	8,420,688	6,566,803	322,753	15,310,243

TABLE F-3.2.1(16) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-2 (4 years-period)
(Viet Nam Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	862,683	575,122	0	1,437,805
Electric Equipment	471,055	314,037	70,658	855,750
Pump House (546m2)	87,360	98,280	4,368	190,008
Overhead 10% of Cvl+Ho	152,031	57,095	2,091	211,217
Profits 3%	90,182	45,516	40,710	176,408
Sub-total	3,096,263	1,562,718	117,827	4,776,809
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
e. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	6,975,744	6,946,050	117,827	14,039,621
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	697,574	694,605	5,891	1,398,071
d. Project Administration	69,757	694,605	0	764,362
Sub-total of Item 2	2,017,332	1,638,710	193,391	3,849,433
Total(1+2)	8,993,075	8,584,761	311,218	17,889,054
3. Physical Contingency	899,308	858,476	31,122	1,788,905
4. Price Escalation	1,053,996	1,513,239		2,567,235
Grand total	10,946,379	10,956,475	342,340	22,245,195

TABLE F-3.2.1(17) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-3 (4 years-period)
(Viet Nam Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	955,526	106,170	0	1,061,696
Electric Equipment	433,463	288,976	65,020	787,459
Pump House (410m2)	65,600	16,400	3,280	85,280
Overhead 10% of Cvl+Ho	114,301	37,179	1,515	152,994
Profits 3%	79,389	24,123	31,054	134,566
Sub-total	2,725,686	828,238	100,868	3,654,792
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
d. Pond Construction	234,000	26,000	2,340	262,340
Sub-total of Item 1	5,345,055	4,100,993	103,208	9,549,256
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	534,506	410,099	5,043	949,648
d. Project Administration	53,451	410,099	0	463,550
Sub-total of Item 2	1,837,956	1,067,699	192,543	3,098,198
Total(1+2)	7,183,011	5,168,692	295,751	12,647,454
3. Physical Contingency	718,301	516,869	29,575	1,264,745
4. Price Escalation	834,678	921,162		1,755,840
Grand total	8,735,990	6,606,723	325,327	15,668,040

TABLE F-3.2.1(18) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-3 (4 years-period)
(Viet Nam Pump & Material)

UNIT:USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	862,683	575,122	0	1,437,805
Electric Equipment	471,055	314,037	70,658	855,750
Pump House (548m2)	87,360	98,280	4,368	190,008
Overhead 10% of Cvl+Ho	152,031	57,095	2,091	211,217
Profits 3%	90,182	45,516	40,710	176,408
Sub-total	3,096,263	1,562,718	117,827	4,776,809
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
d. Pond Construction	234,000	234,000	4,212	472,212
e. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	7,209,744	7,180,050	122,039	14,511,833
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	720,974	718,005	5,891	1,444,871
d. Project Administration	72,097	718,005	0	790,102
Sub-total of Item 2	2,043,072	1,685,510	193,391	3,921,973
Total(1+2)	9,252,815	8,865,561	315,430	18,433,806
3. Physical Contingency	925,282	886,556	91,543	1,843,381
4. Price Escalation	1,083,564	1,561,247		2,644,811
Grand total	11,261,661	11,313,363	346,973	22,921,998

TABLE F-3.2.1(19) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-1 (4 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	7,838,678	870,964	0	8,709,642
Electric Equipment	3,559,516	395,502	533,927	4,488,945
Pump House (410m2)	295,200	73,800	14,760	383,760
Overhead 10% of Cv1+Ho	137,261	42,919	1,802	181,981
Profits 3%	387,242	52,157	131,820	571,219
Sub-total	13,295,304	1,790,732	682,309	15,768,345
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
Sub-total of Item 1	15,358,568	3,640,262	682,309	19,681,139
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	1,535,857	364,026	34,115	1,933,998
d. Project Administration	153,586	364,026	0	517,612
Sub-total of Item 2	2,939,442	975,552	221,615	4,136,610
Total(1+2)	18,298,011	4,615,815	903,924	23,817,750
3. Physical Contingency	1,829,801	461,581	90,392	2,381,775
4. Price Escalation	2,104,220	871,999		2,976,219
Grand total	22,232,031	5,949,396	994,317	29,175,744

TABLE F-3.2.1(20) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-1 (4 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	11,496,573	1,277,397	0	12,773,970
Electric Equipment	4,116,784	457,421	617,518	5,191,723
Pump House (546m2)	393,120	98,280	19,656	511,056
Overhead 10% of Cvl+Ho	182,607	57,095	2,397	242,099
Profits 3%	528,661	70,886	179,864	779,411
Sub-total	18,150,697	2,433,747	819,435	21,403,879
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	21,706,135	6,414,166	819,435	28,939,736
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	2,170,614	641,417	40,972	2,853,002
d. Project Administration	217,061	641,417	0	858,478
Sub-total of Item 2	3,637,675	1,532,333	228,472	5,398,480
Total(1+2)	25,343,810	7,946,500	1,047,907	34,338,216
3. Physical Contingency	2,534,381	794,650	104,791	3,433,822
4. Price Escalation	2,909,093	1,450,602		4,359,695
Grand total	30,787,284	10,191,752	1,152,697	42,131,733

TABLE F-3.2.1(21) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-2 (4 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	7,838,678	870,964	0	8,709,642
Electric Equipment	3,559,516	395,502	533,927	4,488,945
Pump House (410m2)	295,200	73,800	14,760	383,760
Overhead 10% of Cvl+Ho	137,261	42,919	1,802	181,981
Profits 3%	387,242	52,157	131,820	571,219
Sub-total	13,295,304	1,790,732	682,309	15,768,345
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
Sub-total of Item 1	15,680,672	5,037,488	682,309	21,400,469
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	1,568,067	503,749	34,115	2,105,931
d. Project Administration	156,807	503,749	0	660,556
Sub-total of Item 2	2,974,874	1,254,998	221,615	4,451,487
Total(1+2)	18,655,546	6,292,485	903,924	25,851,956
3. Physical Contingency	1,865,555	629,249	90,392	2,585,196
4. Price Escalation	2,139,194	1,104,378		3,243,572
Grand total	22,660,295	8,026,112	994,317	31,680,724

TABLE F-3.2.1(22) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-2 (4 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	11,496,573	1,277,397	0	12,773,970
Electric Equipment	4,116,784	457,421	617,518	5,191,723
Pump House (546m2)	393,120	98,280	19,656	511,056
Overhead 10% of Cvl+Ho	182,607	57,095	2,397	242,099
Profits 3%	528,661	70,886	179,864	779,411
Sub-total	18,150,697	2,433,747	819,435	21,403,879
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
d. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	22,030,178	7,817,079	819,435	30,666,691
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	2,203,018	781,708	40,972	3,025,697
d. Project Administration	220,302	781,708	0	1,002,010
Sub-total of Item 2	3,673,320	1,812,916	228,472	5,714,707
Total(1+2)	25,703,497	9,629,995	1,047,907	36,381,398
3. Physical Contingency	2,570,350	962,999	104,791	3,638,140
4. Price Escalation	2,944,329	1,684,089		4,628,417
Grand total	31,218,175	12,277,083	1,152,697	44,647,956

TABLE F-3.2.1(23) SUMMARY OF PROJECT COST (Tan Chi)
Alternative-3 (4 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,077,407	355,390	0	1,432,797
Mechanical Equipment	7,838,678	870,964	0	8,709,642
Electric Equipment	3,559,516	395,502	533,927	4,488,945
Pump House (410m2)	295,200	73,800	14,760	383,760
Overhead 10% of Cv1+Ho	137,261	42,919	1,802	181,981
Profits 3%	387,242	52,157	131,820	571,219
Sub-total	13,295,304	1,790,732	682,309	15,768,345
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Tan Chi	85,644	83,151	0	168,795
Overhead 10%	187,570	168,139	0	355,709
Sub-total	2,063,264	1,849,530	0	3,912,795
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	176,206	516,999	0	693,205
Overhead 10%	29,282	127,021	0	156,303
Sub-total	322,104	1,397,226	0	1,719,330
d. Pond Construction	234,000	26,000	2,340	262,340
Sub-total of Item 1	15,914,672	5,063,488	684,649	21,662,809
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	60,000	0	60,000
c. Consulting Service	1,591,467	506,349	34,115	2,131,931
d. Project Administration	159,147	506,349	0	665,496
Sub-total of Item 2	3,000,614	1,260,198	221,615	4,482,427
Total(1+2)	18,915,286	6,323,685	906,264	26,145,236
3. Physical Contingency	1,891,529	632,369	90,626	2,614,524
4. Price Escalation	1,942,245	1,068,462		3,010,707
Grand total	22,749,060	8,024,516	996,891	31,770,467

TABLE F-3.2.1(24) SUMMARY OF PROJECT COST (Tan Chi + Han Quang)
Alternative-3 (4 years-period)
(Foreign Pump & Material)

UNIT;USD

ITEM	F/C	L/C	TAX	TOTAL
1. Construction Cost				
a. Pump Station				
Civil works	1,432,951	472,669	0	1,905,620
Mechanical Equipment	11,496,573	1,277,397	0	12,773,970
Electric Equipment	4,116,784	457,421	617,518	5,191,723
Pump House (546m2)	393,120	98,280	19,656	511,056
Overhead 10% of Cvl+Ho	182,607	57,095	2,397	242,099
Profits 3%	528,661	70,886	179,864	779,411
Sub-total	18,150,697	2,433,747	819,435	21,403,879
b. Drainage Canal				
Tao Khe Creek	779,124	581,599	0	1,360,723
KT Trinh Xa	215,645	266,118	0	481,763
KT 6 Xa	259,769	226,306	0	486,075
KT Phat Thich	135,477	115,885	0	251,362
KT 4 Xa	114,025	100,736	0	214,761
KT Kau Nau	95,245	91,829	0	187,074
KT Kau Nau-1	97,208	109,465	0	206,673
KT Kau Nau-2	93,558	106,302	0	199,860
KT Conten Creek	74,846	85,042	0	159,888
Other Secondary Canals	190,766	215,767	0	406,533
KT Han Quang	85,644	83,151	0	168,795
Overhead 10%	214,131	198,220	0	412,351
Sub-total	2,355,438	2,180,420	0	4,535,858
c. Irrigation Canal				
South Irrigation Canal	76,098	589,796	0	665,894
N 6 Irrigation Canal	40,518	163,410	0	203,928
Others	177,968	522,169	0	700,137
Overhead 10%	29,458	127,537	0	156,996
Sub-total	324,042	1,402,912	0	1,726,955
d. Pond Construction	234,000	234,000	4,212	472,212
e. Transmission Line	1,200,000	1,800,000	0	3,000,000
Sub-total of Item 1	22,264,178	8,051,079	823,647	31,138,903
2. Association Cost				
a. Construction Machines	1,250,000	187,500	187,500	1,625,000
b. Land Aquisition	0	62,000	0	62,000
c. Consulting Service	2,226,418	805,108	40,972	3,072,497
d. Project Administration	222,642	805,108	0	1,027,750
Sub-total of Item 2	3,699,060	1,859,716	228,472	5,787,247
Total(1+2)	25,963,237	9,910,795	1,052,119	36,926,150
3. Physical Contingency	2,596,324	991,079	105,212	3,692,615
4. Price Escalation	2,660,654	1,688,348		4,349,002
Grand total	31,220,215	12,590,222	1,157,330	44,967,767

TABLE F-3.2.2 (1) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
1. Tao Khe Creek Impr.						
1.1 Earth Works						
Dreadging	215940	cu.m	2.37	511069	373735	137334
Excavation (Back Hoe)	107970	cu.m	2.40	258713	200758	57955
Excavation (Mannual)	35990	cu.m	1.22	43765	0	43765
Fill (Mannual)	7555	cu.m	1.70	12853	0	12853
Fill (Buldozer)	67995	cu.m	0.30	20608	16486	4122
Placing Gravel	4400	cu.m	7.86	34580	0	34580
Spoiled Dike	284350	cu.m	0.30	86180	68944	17236
Sub Total				967,766	659,923	307,843
1.2 Strctural Works						
Concrete Works	1518	cu.m	127.81	194016	10785	183230
R.C. Pipe	280	m	58.69	16433	7758	8675
Gate (Weight)	7620	kg	0.99	7571	6057	1514
Structural Excavation	11282	cu.m	2.40	27033	20978	6056
Structural Fill	7615	cu.m	2.92	22244	1858	20386
Spoiled Dike	3667	cu.m	0.30	1111	889	222
Brick Work	28	cu.m	30.20	846	47	799
Sub Total				269,254	48,371	220,883
1.3 Preparation works	1	LS		123,702	70,829	52,873
1.4 Total				1,360,723	779,124	581,599
					0.57	

TABLE F-3.2.2 (2) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
2. KT Trinh Xa Impr.						
2.1 Earth Works						
Dreadging	55320	cu.m	2.37	130927	95744	35182
Excavation (Back Hoe)	27660	cu.m	2.40	66278	51431	14847
Excavation (Mannual)	9220	cu.m	1.22	11212	0	11212
Fill (Mannual)	3860	cu.m	1.70	6567	0	6567
Fill (Buldozer)	34740	cu.m	0.30	10529	8423	2106
Placing Gravel	4800	cu.m	7.86	37723	0	37723
Spoiled Dike	53600	cu.m	0.30	16245	12996	3249
Sub Total				279,480	168,594	110,886
2.2 Strctural Works						
Concrete Works	904	cu.m	127.81	115540	6423	109117
R.C. Pipe	120	m	58.69	7043	3325	3718
Gate (Weight)	3760	kg	0.99	3736	2989	747
Structural Excavation	6986	cu.m	2.40	16740	12990	3750
Structural Fill	4946	cu.m	2.92	14448	1207	13241
Spoiled Dike	2040	cu.m	0.30	618	495	124
Brick Work	12	cu.m	30.20	362	20	342
Sub Total				158,487	27,447	131,039
2.3 Preparation works	1	LS		43,797	19,604	24,193
2.4 Total				481,763	215,645	266,118
					0.45	

TABLE F-3.2.2 (3) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
3. KT 6 XA Impr.						
3.1 Earth Works						
Dreadging	72480	cu.m	2.37	171540	125444	46096
Excavation (Back Hoe)	36240	cu.m	2.40	86837	67384	19453
Excavation (Mannual)	12080	cu.m	1.22	14690	0	14690
Fill (Mannual)	6880	cu.m	1.70	11704	0	11704
Fill (Buldozer)	61920	cu.m	0.30	18767	15013	3753
Placing Gravel	5200	cu.m	7.86	40867	0	40867
Spoiled Dike	52000	cu.m	0.30	15760	12608	3152
Sub Total				360,164	220,449	139,715
3.2 Strctural Works						
Concrete Works	440	cu.m	127.81	56236	3126	53110
R.C. Pipe	120	m	58.69	7043	3325	3718
Gate (Weight)	2330	kg	0.99	2315	1852	463
Structural Excavation	3510	cu.m	2.40	8411	6526	1884
Structural Fill	2403	cu.m	2.92	7019	586	6433
Spoiled Dike	1107	cu.m	0.30	336	268	67
Brick Work	12	cu.m	30.20	362	20	342
Sub Total				81,722	15,704	66,018
3.3 Preparation works	1	LS		44,189	23,615	20,573
3.4 Total				486,074	259,769	226,306

TABLE F-3.2.2 (4) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
4. KT Phat Thich Impr.						
4.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	54180	cu.m	2.40	129824	100741	29082
Excavation (Mannual)	6020	cu.m	1.22	7320	0	7320
Fill (Mannual)	1640	cu.m	1.70	2790	0	2790
Fill (Buldozer)	14760	cu.m	0.30	4473	3579	895
Placing Gravel	3360	cu.m	7.86	26406	0	26406
Spoiled Dike	43800	cu.m	0.30	13275	10620	2655
Sub Total				184,089	114,940	69,149
4.2 Strctural Works						
Concrete Works	246	cu.m	127.81	31441	1748	29693
R.C. Pipe	40	m	58.69	2348	1108	1239
Gate (Weight)	1320	kg	0.99	1311	1049	262
Structural Excavation	2049	cu.m	2.40	4910	3810	1100
Structural Fill	1402	cu.m	2.92	4095	342	3753
Spoiled Dike	647	cu.m	0.30	196	157	39
Brick Work	4	cu.m	30.20	121	7	114
Sub Total				44,422	8,221	36,202
4.3 Preparation works	.1	LS		22,851	12,316	10,535
4.4 Total				251,362	135,477	115,885

TABLE F-3.2.2 (5) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
5. KT 4 XA Impr.						
5.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	44100	cu.m	2.40	105670	81999	23672
Excavation (Mannual)	4900	cu.m	1.22	5959	0	5959
Fill (Mannual)	1120	cu.m	1.70	1905	0	1905
Fill (Buldozer)	10080	cu.m	0.30	3055	2444	611
Placing Gravel	1120	cu.m	7.86	8802	0	8802
Spoiled Dike	37800	cu.m	0.30	11456	9165	2291
Sub Total				136.848	93.608	43.240
5.2 Strctural Works						
Concrete Works	341	cu.m	127.81	43583	2423	41160
R.C. Pipe	40	m	58.69	2348	1108	1239
Gate (Weight)	1840	kg	0.99	1828	1462	366
Structural Excavation	2402	cu.m	2.40	5756	4466	1289
Structural Fill	1538	cu.m	2.92	4493	375	4117
Spoiled Dike	864	cu.m	0.30	262	209	52
Brick Work	4	cu.m	30.20	121	7	114
Sub Total				58.390	10.051	48.339
5.3 Preparation works	1	LS		19.524	10.366	9.158
5.4 Total				214.761	114.025	100.736
					0.53	

TABLE F-3.2.2 (6) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
6. KT Kau Nau Impr.						
6.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	37260	cu.m	2.40	89281	69281	20000
Excavation (Mannual)	4140	cu.m	1.22	5034	0	5034
Fill (Mannual)	1740	cu.m	1.70	2960	0	2960
Fill (Buldozer)	15660	cu.m	0.30	4746	3797	949
Placing Gravel	2800	cu.m	7.86	22005	0	22005
Spoiled Dike	24000	cu.m	0.30	7274	5819	1455
Sub Total				131.301	78.897	52.404
6.2 Strctural Works						
Concrete Works	202	cu.m	127.81	25818	1435	24382
R.C. Pipe	80	m	58.69	4695	2217	2479
Gate (Weight)	960	kg	0.99	954	763	191
Structural Excavation	1551	cu.m	2.40	3716	2884	833
Structural Fill	1097	cu.m	2.92	3204	268	2937
Spoiled Dike	454	cu.m	0.30	138	110	28
Brick Work	8	cu.m	30.20	242	13	228
Sub Total				38.767	7.690	31.077
6.3 Preparation works	1	LS		17.007	8.659	8.348
6.4 Total				187.074	95.245	91.829
					0.51	

TABLE F-3.2.2 (7) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
7. KT Kau Nau-1 Impr.						
7.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	37080	cu.m	2.40	88849	68946	19903
Excavation (Mannual)	4120	cu.m	1.22	5010	0	5010
Fill (Mannual)	2360	cu.m	1.70	4015	0	4015
Fill (Buldozer)	21240	cu.m	0.30	6437	5150	1287
Placing Gravel	2560	cu.m	7.86	20119	0	20119
Spoiled Dike	17600	cu.m	0.30	5334	4267	1067
Sub Total				129.765	78.363	51.402
7.2 Strctural Works						
Concrete Works	339	cu.m	127.81	43373	2411	40962
R.C. Pipe	40	m	58.69	2348	1108	1239
Gate (Weight)	1831	kg	0.99	1819	1455	364
Structural Excavation	2390	cu.m	2.40	5728	4445	1283
Structural Fill	1531	cu.m	2.92	4471	373	4098
Spoiled Dike	860	cu.m	0.30	261	208	52
Brick Work	4	cu.m	30.20	121	7	114
Sub Total				58.120	10.008	48.112
7.3 Preparation works	1	LS		18.788	8.837	9.951
7.4 Total				206.673	97.208	109.465
					0.47	

TABLE F-3.2.2 (8) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
8. KT Kau Nau-2 Impr.						
8.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	35640	cu.m	2.40	85399	66268	19130
Excavation (Mannual)	3960	cu.m	1.22	4815	0	4815
Fill (Mannual)	1980	cu.m	1.70	3368	0	3368
Fill (Buldozer)	17820	cu.m	0.30	5401	4321	1080
Placing Gravel	2640	cu.m	7.86	20748	0	20748
Spoiled Dike	19800	cu.m	0.30	6001	4801	1200
Sub Total				125.732	75.390	50.343
8.2 Strctural Works						
Concrete Works	326	cu.m	127.81	41688	2317	39371
R.C. Pipe	40	m	58.69	2348	1108	1239
Gate (Weight)	1760	kg	0.99	1749	1399	350
Structural Excavation	2298	cu.m	2.40	5505	4272	1233
Structural Fill	1471	cu.m	2.92	4297	359	3938
Spoiled Dike	826	cu.m	0.30	250	200	50
Brick Work	4	cu.m	30.20	121	7	114
Sub Total				55.958	9.663	46.296
8.3 Preparation works	1	LS		18.169	8.505	9.664
8.4 Total				199.860	93.558	106.302

TABLE F-3.2.2 (9) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
9. KT Tan Chi Impr.						
9.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	32400	cu.m	2.40	77635	60244	17391
Excavation (Mannual)	3600	cu.m	1.22	4378	0	4378
Fill (Mannual)	0	cu.m	1.70	0	0	0
Fill (Buldozer)	0	cu.m	0.30	0	0	0
Placing Gravel	1200	cu.m	7.86	9431	0	9431
Spoiled Dike	36000	cu.m	0.30	10911	8729	2182
Sub Total				102.355	68.973	33.382
9.2 Strctural Works						
Concrete Works	297	cu.m	127.81	37898	2107	35792
R.C. Pipe	40	m	58.69	2348	1108	1239
Gate (Weight)	1600	kg	0.99	1590	1272	318
Structural Excavation	2089	cu.m	2.40	5005	3884	1121
Structural Fill	1337	cu.m	2.92	3907	326	3580
Spoiled Dike	751	cu.m	0.30	228	182	46
Brick Work	4	cu.m	30.20	121	7	114
Sub Total				51.096	8.886	42.210
9.3 Preparation works	1	LS		15.345	7.786	7.559
9.4 Total				168.795	85.644	83.151
					0.51	

1.4 Total

TABLE F-3.2.2 (10) Construction COST

Descfiption	Total	Unit Cost (US $) F/C	L/C
1. Tao Khe Creek Impr.	1.360.723	779.124	581.599
2. KT Trinh Xa Impr.	481.763	215.645	266.118
3. KT 6 XA Impr.	486.074	259.769	226.306
4. KT Phat Thich Impr.	251.362	135.477	115.885
5. KT 4 XA Impr.	214.761	114.025	100.736
6. KT Kau Nau Impr.	187.074	95.245	91.829
7. KT Kau Nau-1 Impr.	206.673	97.208	109.465
8. KT Kau Nau-2 Impr.	199.860	93.558	106.302
9. KT Tan Chi Impr.	168.795	85.644	83.151
	3.557.086	1.875.695	1.681.391
		3557086	

TABLE F-3.2.3 (1) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
1. South Irrigation Canal Impr.						
1.1 Canal Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	4205	cu.m	2.40	10075	7818	2257
Excavation (Mannual)	9811	cu.m	1.22	11931	0	11931
Fill (Mannual)	2803	cu.m	1.70	4769	0	4769
Fill (Buldozer)	25229	cu.m	0.30	7646	6117	1529
Placing Gravel	4906	cu.m	7.86	38556	0	38556
Hauling Work (10km)	14016	cu.m	0.30	4248	3398	850
Brick Work	15081	cu.m	30.20	455450	25319	430132
Sub Total				532,676	42,652	490,024
1.2 Strctural Works						
Concrete Works	561	cu.m	30.20	16942	942	16001
R.C. Pipe D=0.30m	720	m	26.28	18918	8931	9987
R.C. Pipe D=0.45m	120	m	31.28	3753	1523	2230
R.C. Pipe D=0.60m	100	m	45.41	4541	1834	2707
R.C. Pipe D=0.80m	40	m	52.05	2082	983	1099
Gate (Weight)	4960	kg	0.99	4928	3942	986
Structural Excavation	3950	cu.m	2.40	9465	7345	2120
Structural Fill	3697	cu.m	2.92	10799	902	9897
Spoiled Dike	253	cu.m	0.30	77	61	15
Brick Work	39	cu.m	30.20	1178	65	1112
Sub Total				72,683	26,528	46,155
1.3 Preparation works	1	LS		60,536	6,918	53,618
1.4 Total				665,895	76,098	589,796

TABLE F-3.2.3 (2) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
2. N 6 IRRIGATION Impr.						
2.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	3120	cu.m	2.40	7476	5801	1675
Excavation (Mannual)	7280	cu.m	1.22	8853	0	8853
Fill (Mannual)	2080	cu.m	1.70	3539	0	3539
Fill (Buldozer)	18720	cu.m	0.30	5674	4539	1135
Placing Gravel	3640	cu.m	7.86	28607	0	28607
Spoiled Dike	10400	cu.m	0.30	3152	2522	630
Brick Work	2686	cu.m	30.20	81118	4509	76609
Sub Total				138,418	17,371	121,047
2.2 Strctural Works						
Concrete Works	48	cu.m	30.20	1450	81	1369
R.C. Pipe D=0.30m	600	m	26.28	15765	7442	8323
R.C. Pipe D=0.45m	360		31.28	11259	4569	6690
R.C. Pipe D=0.60m	0		45.41	0	0	0
R.C. Pipe D=0.80m	0		52.05	0	0	0
Gate (Weight)	589	kg	0.99	585	468	117
Structural Excavation	3255	cu.m	2.40	7799	6052	1747
Structural Fill	3094	cu.m	2.92	9038	755	8283
Spoiled Dike	161	cu.m	0.30	49	39	10
Brick Work	34	cu.m	30.20	1027	57	970
Sub Total				46,972	19,463	27,508
2.3 Preparation works	1	LS		18,539	3,683	14,855
2.4 Total				203,929	40,518	163,410

TABLE F-3.2.3 (3) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
3. N 4 Irrigation Canal Impr.						
3.1 Canal Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	1320	cu.m	2.40	3163	2454	709
Excavation (Mannual)	3080	cu.m	1.22	3745	0	3745
Fill (Mannual)	880	cu.m	1.70	1497	0	1497
Fill (Buldozer)	7920	cu.m	0.30	2400	1920	480
Placing Gravel	1540	cu.m	7.86	12103	0	12103
Hauling Work (10km)	4400	cu.m	0.30	1334	1067	267
Brick Work	130	cu.m	30.20	3926	218	3708
Sub Total				28,168	5,660	22,508
3.2 Strctural Works						
Concrete Works	212	cu.m	30.20	6402	356	6047
R.C. Pipe D=0.30m	440	m	26.28	11561	5458	6103
R.C. Pipe D=0.45m	0	m	31.28	0	0	0
R.C. Pipe D=0.60m	0	m	45.41	0	0	0
R.C. Pipe D=0.80m	0	m	52.05	0	0	0
Gate (Weight)	1065	kg	0.99	1058	846	212
Structural Excavation	1430	cu.m	2.40	3427	2659	768
Structural Fill	1375	cu.m	2.92	4017	335	3681
Spoiled Dike	55	cu.m	0.30	17	13	3
Brick Work	15	cu.m	30.20	453	25	428
Sub Total				26,934	9,693	17,241
3.3 Preparation works	1	LS		5,510	1,535	3,975
3.4 Total				60,613	16,888	43,725

TABLE F-3.2.3 (4) Construction COST

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
4. NAM NUI CHE IRRIGATION Impr.						
4.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	1116	cu.m	2.40	2674	2075	599
Excavation (Mannual)	2604	cu.m	1.22	3167	0	3167
Fill (Mannual)	744	cu.m	1.70	1266	0	1266
Fill (Buldozer)	6696	cu.m	0.30	2029	1624	406
Placing Gravel	1302	cu.m	7.86	10232	0	10232
Spoiled Dike	3720	cu.m	0.30	1127	902	225
Brick Work	744	cu.m	30.20	22469	1249	21220
Sub Total				42,965	5,850	37,115
4.2 Strctural Works						
Concrete Works	0	cu.m	30.20	0	0	0
R.C. Pipe D=0.30m	372	m	26.28	9774	4614	5160
R.C. Pipe D=0.45m	0		31.28	0	0	0
R.C. Pipe D=0.60m	0		45.41	0	0	0
R.C. Pipe D=0.70m	186		48.73	9064	4279	4785
Gate (Weight)	300	kg	0.99	298	238	60
Structural Excavation	2000	cu.m	2.40	4792	3719	1074
Structural Fill	1859	cu.m	2.92	5430	454	4977
Spoiled Dike	141	cu.m	0.30	43	34	9
Brick Work	20	cu.m	30.20	604	34	570
Sub Total				30,005	13,372	16,634
4.3 Preparation works	1	LS		7,297	1,922	5,375
4.4 Total				80,267	21,143	59,124

TABLE F-3.2.3 (5) Construction COST

Descfiption	Qunt.	Unit	Price	Total	F/C	L/C
5. BAC NUI CHE Irrigation Canal Impr.						
5.1 Canal Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	960	cu.m	2.40	2300	1785	515
Excavation (Mannual)	2240	cu.m	1.22	2724	0	2724
Fill (Mannual)	640	cu.m	1.70	1089	0	1089
Fill (Buldozer)	5760	cu.m	0.30	1746	1397	349
Placing Gravel	1120	cu.m	7.86	8802	0	8802
Hauling Work (10km)	3200	cu.m	0.30	970	776	194
Brick Work	96	cu.m	30.20	2899	161	2738
Sub Total				20,530	4,119	16,411
5.2 Strctural Works						
Concrete Works	0	cu.m	30.20	0	0	0
R.C. Pipe D=0.30m	320	m	26.28	8408	3969	4439
R.C. Pipe D=0.45m	0	m	31.28	0	0	0
R.C. Pipe D=0.60m	0	m	45.41	0	0	0
R.C. Pipe D=0.70m	160	m	48.73	7797	3681	4116
Gate (Weight)	258	kg	0.99	256	205	51
Structural Excavation	1720	cu.m	2.40	4121	3198	923
Structural Fill	1599	cu.m	2.92	4671	390	4281
Spoiled Dike	121	cu.m	0.30	37	29	7
Brick Work	17	cu.m	30.20	513	29	485
Sub Total				25,803	11,501	14,302
5.3 Preparation works	1	LS		4,633	1,562	3,071
5.4 Total				50,967	17,182	33,785

TABLE F-3.2.3 (6) Construction COST

Descfiption	Qunt.	Unit	Price	Total	F/C	L/C
6. N 8 IRRIGATION Impr.						
6.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	1248	cu.m	2.40	2990	2321	670
Excavation (Mannual)	2912	cu.m	1.22	3541	0	3541
Fill (Mannual)	832	cu.m	1.70	1415	0	1415
Fill (Buldozer)	7488	cu.m	0.30	2269	1816	454
Placing Gravel	1456	cu.m	7.86	11443	0	11443
Spoiled Dike	4160	cu.m	0.30	1261	1009	252
Brick Work	117	cu.m	30.20	3533	196	3337
Sub Total				26,453	5,341	21,112
6.2 Strctural Works						
Concrete Works	171	cu.m	30.20	5164	287	4877
R.C. Pipe D=0.30m	416	m	26.28	10930	5160	5770
R.C. Pipe D=0.45m	0		31.28	0	0	0
R.C. Pipe D=0.60m	0		45.41	0	0	0
R.C. Pipe D=0.70m	0		48.73	0	0	0
Gate (Weight)	727	kg	0.99	722	578	144
Structural Excavation	1352	cu.m	2.40	3240	2514	726
Structural Fill	1300	cu.m	2.92	3797	317	3480
Spoiled Dike	52	cu.m	0.30	16	13	3
Brick Work	15	cu.m	30.20	453	25	428
Sub Total				24,323	8,894	15,429
6.3 Preparation works	1	LS		5,078	1,423	3,654
6.4 Total				55,854	15,658	40,195

TABLE F-3.2.3 (7) Construction COST

7. N 34 IRRIGATION CANAL Impr.	Qunt.	Unit	Price	Total	F/C	L/C
7.1 Canal Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	912	cu.m	2.40	2185	1696	490
Excavation (Mannual)	2128	cu.m	1.22	2588	0	2588
Fill (Mannual)	608	cu.m	1.70	1034	0	1034
Fill (Buldozer)	5472	cu.m	0.30	1658	1327	332
Placing Gravel	1064	cu.m	7.86	8362	0	8362
Hauling Work (10km)	3040	cu.m	0.30	921	737	184
Brick Work	869	cu.m	30.20	26244	1459	24785
Sub Total				42,993	5,219	37,775
5.2 Strctural Works						
Concrete Works	0	cu.m	30.20	0	0	0
R.C. Pipe D=0.30m	304	m	26.28	7988	3771	4217
R.C. Pipe D=0.45m	0	m	31.28	0	0	0
R.C. Pipe D=0.60m	0	m	45.41	0	0	0
R.C. Pipe D=0.80m	152	m	52.05	7912	3735	4177
Gate (Weight)	300	kg	0.99	298	238	60
Structural Excavation	1672	cu.m	2.40	4006	3109	897
Structural Fill	1537	cu.m	2.92	4490	375	4115
Spoiled Dike	135	cu.m	0.30	41	33	8
Brick Work	16	cu.m	30.20	483	27	456
Sub Total				25,217	11,288	13,930
5.3 Preparation works	1	LS		6,821	1,651	5,170
5.4 Total				75,032	18,157	56,875

TABLE F-3.2.3 (8) Construction COST

8. IRRIGATION CANAL Impr.	Qunt.	Unit	Price	Total	F/C	L/C
8.1 Earth Works						
Dreadging	0	cu.m	2.37	0	0	0
Excavation (Back Hoe)	17594	cu.m	2.40	42158	32714	9444
Excavation (Mannual)	41053	cu.m	1.22	49921	0	49921
Fill (Mannual)	11729	cu.m	1.70	19954	0	19954
Fill (Buldozer)	105565	cu.m	0.30	31994	25595	6399
Placing Gravel	20527	cu.m	7.86	161323	0	161323
Spoiled Dike	58647	cu.m	0.30	17775	14220	3555
Brick Work	23960	cu.m	30.20	723599	40225	683374
Sub Total				1,046,724	112,754	933,969
2 Strctural Works						
Concrete Works	991	cu.m	30.20	29928	1664	28265
R.C. Pipe D=0.30m	4743	m	26.28	124623	58832	65791
R.C. Pipe D=0.45m	876	m	31.28	27397	11118	16279
R.C. Pipe D=0.60m	284	m	45.41	12896	5208	7688
R.C. Pipe D=0.70m	774	m	48.73	37717	17805	19911
R.C. Pipe D=0.80m	272	m	52.05			
Gate (Weight)	9353	kg	0.99	9292	7434	1858
Structural Excavation	24238	cu.m	2.40	58078	45068	13010
Structural Fill	22763	cu.m	2.92	66493	5554	60939
Spoiled Dike	1475	cu.m	0.30	447	358	89
Brick Work	243	cu.m	30.20	7339	408	6931
Sub Total				374,210	153,448	220,763
.3 Preparation works	1	LS		142,093	26,620	115,473
.4 Total				1,563,028	292,822	1,270,205

TABLE F-3.2.4 (1) CONSTRUCTION COST FOR PUMPING STATION

Descfiption	Qunt.	Unit	Base Price	Total	Unit Cost (US $) F/C	L/C
1. Civil Works						
1.1 Leading Canal						
Dreadging	14000	cu.m	2.37	33134	24230	8904
Excavation (Back Hoe)	4000	cu.m	2.40	9585	7438	2147
Excavation (Mannual)	2000	cu.m	1.22	2432	0	2432
Fill (Mannual)	200	cu.m	1.70	340	0	340
Fill (Buldozer)	1800	cu.m	0.30	546	436	109
Placing Gravel	20	cu.m	7.86	157	0	157
SPOILED DIKE	4000	cu.m	0.30	1212	970	242
BRICK WORK	250	cu.m	30.20	7550	420	7130
Sub Total				54,956	33,494	21,462
1.2 Suction Base						
Concrete Works	990	cu.m	165.26	163604	102517	61088
P.C. Pile D450 L=15m	182	pcs	1014.60	184883	165713	19170
Structural Excavation	14000	cu.m	2.40	33600	26073	7527
Structural Fill	9200	cu.m	2.92	26864	2149	24715
Spoiled Dike	4800	cu.m	0.30	1440	1152	288
Brick Work	50	cu.m	30.20	1510	91	1419
Sub Total				411,901	297,695	114,207
1.3 Suction Basin & Sluice						
Concrete Works	2430	cu.m	165.26	401582	252997	148585
P.C. Pile D450 L=15m	491	pcs	1014.60	498169	446515	51653
Structural Excavation	22100	cu.m	2.40	53040	41371	11669
Structural Fill	2200	LS	2.92	6424	514	5910
Spoiled Dike	19900		0.30	5970	4776	1194
Brick Work	25		30.20	755	45	710
Sub Total				965,939	746,218	219,721
1.4 Civil Work Total				1,432,796	1,077,407	355,390

TABLE F-3.2.4(2) CONSTRUCTION COST FOR PUMPING STATION

Unit Price for Mechanical Equipment (14400m3/h with appurtenant)

(Viet Nam Pump & Materials) Items	No.	Unit	Equipment Cost(USD) Unit price(U	Cost(USD)	Instalation Cost (USD/T)	Cost(USD)	Weigt(Ton)
1 Procurement of Hydraulic equipment							
1)Mixed Flow Pump D=1350x325rpmx550kwx50Hz Q=14400 m3/h	4	set	54,000	216,000	8,100	32,400	64
2)Planetary gear reducer	4	set	25,000	100,000	3,750	15,000	
3)Induction motor550kwx4px3kvx50Hz	4	set	23,800	95,200	3,570	14,280	1
4)Steel Pipe	4	set	5,800	23,200	870	3,480	
5)Others	4	set	50	200	8	30	
6)Replace of Existing Pump	68	set	2,000	136,000	300	20,400	
7)Circulation fee	2	%		8,692			
8)Transportaion charge	4	%		17,384			
Sub total				596,676		85,590	65
2 Gates and Valves							
1)Trash Rack 4.05x6.25	4	set	26,000	104,000	3,900	15,600	7
2)Butterfly Valve D=1350	4	set	0	0	0	0	7
3)Flap Valve D=1650	4	set	3,800	15,200	570	2,280	3
4)Movable Crane 15T LX Lk=4.5m	1	set	100,500	100,500	15,075	15,075	5
5)Holizontal conveyor 750mmWx41mL	1	set	0	0	0	0	3
6)Inclined conveyor 750mmWx15mL	1	set	0	0	0	0	1
7)Circulation fee	2	%		4,394			2
8)Transportation charge	5	%		10,985			
Sub total				235,079		32,955	28
Total 1+2				831,755		118,545	93
3 Elelectric receiving facilities							
1) 34kv Incoming Panel	1	set		22,950	3,443	3,443	
2) 34kv Incoming Circuit Breaker Panel	1	set		24,707	3,706	3,706	
3) 4500KVA Main Transformer	1	set		75,000	11,250	11,250	
4) Circulation fee	2	%		2,453			
5) Transportation charge	5	%		6,133			
Sub total				131,242		18,398	
4 Distribution Panel and Others							
1) 3kv Incoming Panel	1	set	8,320	8,320	1,248	1,248	
2) 3kv Reacor & Capacitor Panel	4	set	6,560	26,240	984	3,936	
3) 3kv Motor Starter Panel	4	set	7,200	28,800	1,080	4,320	
4)Auxiliary Transformer Feeder Panel	1	set	7,440	7,440	1,116	1,116	
5) 500kva Auxiliary Transformer	1	set	6,160	6,160	924	924	
6)Low Voltage Panel	2	set	3,840	7,680	576	1,152	
7)Replace of Transmissionline	1	LS		197,655	0	0	
8)Local Pump Control Panel	4	set	0	0	0	0	
6)Auxiliary Relay Panel	4	set	4,160	16,640	624	2,496	
7)Cables	1	set	15,000	15,000	2,250	2,250	
8) Circulation fee	2	%		6,279			
9) Transportation charge	5	%		15,697			
Sub total				335,910		17,442	
Total of 3+4				467,153		35,840	
4 Total 1+2+3+4				1,298,908		154,385	

5 Unit cost for Mechanical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Weight of Equipment	TON	93	11	15	3	122
Equipment	USD	831,755	7,306	8,739	1,728	849,529
Instalation	USD	118,545	1,029	1,323	261	121,157
Design Fee 2% of Equipment	USD	16,635	146	175	35	16,991
Others 3% of Equipment	USD	24,953	219	262	52	25,486
Contingency 5% of 1+2	USD	47,515	417	503	99	48,534
Total	USD	1,039,403	9,117	11,002	2,175	1,061,696
Unit cost for a pump(14400m3/h)	USD					265,424

6 Unit cost for Electrical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Equipment	USD	467,153	57,293	73,662	13,840	611,947
Instalation	USD	35,840	4,396	5,651	1,062	46,949
Design Fee 2% of Equipment	USD	9,343	1,146	1,473	277	12,239
Others 3% of Equipment	USD	14,015	1,719	2,210	415	18,358
Contingency 5% of 1+2	USD	25,150	3,084	3,966	745	32,945
Total	USD	551,500	67,638	86,963	16,338	722,439
Unit cost for a pump(14400m3/h)	USD	137,875	16,909	21,741	4,085	180,610

TABLE F-3.2.4(3) CONSTRUCTION COST FOR PUMPING STATION

Unit Price for Mechanical Equipment (14400m3/h with appurtenant)

(Viet Nam Pump & Materials) Items	No.	Unit	Equipment Cost(USD) Unit price(U	Cost(USD)	Instalation Cost (USD/T)	Cost(USD)	Weigt(Ton)
1 Procurement of Hydraulic equipment							
1)Mixed Flow Pump D=1350x325rpmx550kwx50Hz Q=14400 m3/h	6	set	54,000	324,000	8,100	48,600	64
2)Planetary gear reducer	6	set	25,000	150,000	3,750	22,500	
3)Induction motor550kwx4px3kvx50Hz	6	set	23,800	142,800	3,570	21,420	1
4)Steel Pipe	6	set	5,800	34,800	870	5,220	
5)Replace of Existing Pump	68	set	2,000	136,000	300	20,400	
6)Others	6	set	50	300	8	45	
7)Circulation fee	2	%		15,758			
8)Transportaion charge	4	%		31,516			
Sub total				835,174		118,185	65
2 Gates and Valves							
1)Trash Rack 4.05x6.25	6	set	26,000	156,000	3,900	23,400	7
2)Butterfly Valve D=1350	6	set	0	0	0	0	7
3)Flap Valve D=1650	6	set	3,800	22,800	570	3,420	3
4)Movable Crane 15T LX Lk=4.5m	1	set	100,500	100,500	15,075	15,075	5
5)Holizontal conveyor 750mmWx41mL	1	set	0	0	0	0	3
6)Inclined conveyor 750mmWx15mL	1	set	0	0	0	0	1
7)Circulation fee	2	%		5,586			2
8)Transportation charge	5	%		13,965			
Sub total				298,851		41,895	28
Total 1+2				1,134,025		160,080	93
3 Elelectric receiving facilities							
1) 34kv Incoming Panel	1	set		22,950	3,443	3,443	
2) 34kv Incoming Circuit Breaker Panel	1	set		24,707	3,706	3,706	
3) 4500KVA Main Transformer	1	set		75,000	11,250	11,250	
4) Circulation fee	2	%		2,453			
5) Transportation charge	5	%		6,133			
Sub total				131,242		18,398	
4 Distribution Panel and Others							
1) 3kv Incoming Panel	1	set	8,320	8,320	1,248	1,248	
2) 3kv Reacor & Capacitor Panel	6	set	6,560	39,360	984	5,904	
3) 3kv Motor Starter Panel	6	set	7,200	43,200	1,080	6,480	
4)Auxiliary Transformer Feeder Panel	1	set	7,440	7,440	1,116	1,116	
5) 500kva Auxiliary Transformer	1	set	6,160	6,160	924	924	
6)Low Voltage Panel	2	set	3,840	7,680	576	1,152	
7)Replace of Transmissionline	1	LS		197,655	0	0	
8)Local Pump Control Panel	6	set	0	0	0	0	
6)Auxiliary Relay Panel	6	set	4,160	24,960	624	3,744	
7)Cables	1	set	15,000	15,000	2,250	2,250	
8) Circulation fee	2	%		6,995			
9) Transportation charge	5	%		17,489			
Sub total				374,259		22,818	
Total of 3+4				505,501		41,216	
4 Total 1+2+3+4				1,639,526		201,296	

5 Unit cost for Mechanical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Weight of Equipment	TON	93	11	15	3	122
Equipment	USD	1,134,025	7,306	8,739	1,728	1,151,799
Instalation	USD	160,080	1,029	1,323	261	162,692
Design Fee 2% of Equipment	USD	22,681	146	175	35	23,036
Others 3% of Equipment	USD	34,021	219	262	52	34,554
Contingency 5% of 1+2	USD	64,705	417	503	99	65,725
Total	USD	1,415,512	9,117	11,002	2,175	1,437,805
Unit cost for a pump(14400m3/h)	USD					239,634

6 Unit cost for Electrical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Equipment	USD	505,501	61,996	79,709	14,976	662,182
Instalation	USD	41,216	5,055	6,499	1,221	53,992
Design Fee 2% of Equipment	USD	10,110	1,240	1,594	300	13,244
Others 3% of Equipment	USD	15,165	1,860	2,391	449	19,865
Contingency 5% of 1+2	USD	27,336	3,353	4,310	810	35,809
Total	USD	599,329	73,503	94,504	17,755	785,092
Unit cost for a pump(14400m3/h)	USD	99,888	12,251	15,751	2,959	130,849

TABLE F-3.2.4(4) CONSTRUCTION COST FOR PUMPING STATION

Unit Price for Mechanical Equipment (14400m3/h with appurtenant)

(Foreign Pump & Materials) Items	No.	Unit	Equipment Cost(USD) Unit price(U	Cost(USD)	Instalation Cost (USD/T)	Cost(USD)	Weigt(Ton)
1 Procurement of Hydraulic equipment							
1)Mixed Flow Pump D=1350x325rpmx550kwx50Hz Q=14400 m3/h	4	set	862,400	3,449,600	129,360	517,440	64
2)Planetary gear reducer	4	set	175,000	700,000	26,250	105,000	
3)Induction motor550kwx4px3kvx50Hz	4	set	166,600	666,400	24,990	99,960	1
4)Steel Pipe	4	set	40,600	162,400	6,090	24,360	
5)Others	4	set	50	200	8	30	
6)Replace of Existing Pump	68		2,000	136,000	300	20,400	
7)Circulation fee	2	%		99,572			
8)Transportaion charge	4	%		199,144			
Sub total				5,413,316		767,190	65
2 Gates and Valves							
1)Trash Rack 4.05x6.25	4	set	182,000	728,000	27,300	109,200	7
2)Butterfly Valve D=1350	4	set	79,800	319,200	11,970	47,880	7
3)Flap Valve D=1650	4	set	26,600	106,400	3,990	15,960	3
4)Movable Crane 15T LX Lk=4.5m	1	set	140,700	140,700	21,105	21,105	5
5)Holizontal conveyor 750mmWx41mL	1	set	77,700	77,700	11,655	11,655	3
6)Inclined conveyor 750mmWx15mL	1	set	72,100	72,100	10,815	10,815	1
7)Circulation fee	2	%		28,882			2
8)Transportation charge	5	%		72,205			
Sub total				1,545,187		216,615	28
Total 1+2				6,958,503		983,805	93
3 Elelectric receiving facilities							
1) 34kv Incoming Panel	1	set		178,500	26,775	26,775	
2) 34kv Incoming Circuit Breaker Panel	1	set		207,200	31,080	31,080	
3) 4500KVA Main Transformer	1	set		525,000	78,750	78,750	
4) Circulation fee	2	%		18,214			
5) Transportation charge	5	%		45,535			
Sub total				974,449		136,605	
4 Distribution Panel and Others							
1) 3kv Incoming Panel	1	set	72,800	72,800	10,920	10,920	
2) 3kv Reacor & Capacitor Panel	4	set	57,400	229,600	8,610	34,440	
3) 3kv Motor Starter Panel	4	set	63,000	252,000	9,450	37,800	
4)Auxiliary Transformer Feeder Panel	1	set	65,100	65,100	9,765	9,765	
5) 500kva Auxiliary Transformer	1	set	53,900	53,900	8,085	8,085	
6)Low Voltage Panel	2	set	33,600	67,200	5,040	10,080	
7)Replace of Transmissionline	1	LS		197,655	0	0	
8)Local Pump Control Panel	4	set	20,300	81,200	3,045	12,180	
6)Auxiliary Relay Panel	4	set	36,400	145,600	5,460	21,840	
7)Cables	1	set	210,000	210,000	31,500	31,500	
8) Circulation fee	2	%		27,501			
9) Transportation charge	5	%		68,753			
Sub total				1,471,309		176,610	
Total of 3+4				2,445,758		313,215	
4 Total 1+2+3+4				9,404,261		1,297,020	

5 Unit cost for Mechanical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Weight of Equipment	TON	93	11	15	3	122
Equipment	USD	6,958,503	7,306	8,739	1,728	6,976,277
Instalation	USD	983,805	1,029	1,323	261	986,417
Design Fee 2% of Equipment	USD	139,170	146	175	35	139,526
Others 3% of Equipment	USD	208,755	219	262	52	209,288
Contingency 5% of 1+2	USD	397,115	417	503	99	398,135
Total	USD	8,687,349	9,117	11,002	2,175	8,709,642
Unit cost for a pump(14400m3/h)	USD					2,177,411

6 Unit cost for Electrical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Equipment	USD	2,445,758	299,954	385,656	72,457	3,203,824
Instalation	USD	313,215	38,414	49,389	9,279	410,296
Design Fee 2% of Equipment	USD	48,915	5,999	7,713	1,449	64,076
Others 3% of Equipment	USD	73,373	8,999	11,570	2,174	96,115
Contingency 5% of 1+2	USD	137,949	16,918	21,752	4,087	180,706
Total	USD	3,019,209	370,284	476,079	89,445	3,955,018
Unit cost for a pump(14400m3/h)	USD	754,802	92,571	119,020	22,361	988,754

TABLE F-3.2.4(5) CONSTRUCTION COST FOR PUMPING STATION

Unit Price for Mechanical Equipment (14400m3/h with appurtenant)

(Foreign Pump & Materials) Items	No.	Unit	Equipment Cost(USD) Unit price(U	Cost(USD)	Instalation Cost (USD/T)	Cost(USD)	Weigt(Ton)
1 Procurement of Hydraulic equipment							
1)Mixed Flow Pump D=1350x325rpmx550kwx50Hz Q=14400 m3/h	6	set	862,400	5,174,400	129,360	776,160	64
2)Planetary gear reducer	6	set	175,000	1,050,000	26,250	157,500	
3)Induction motor550kwx4px3kvx50Hz	6	set	166,600	999,600	24,990	149,940	1
4)Steel Pipe	6	set	40,600	243,600	6,090	36,540	
5)Others	6	set	50	300	8	45	
6)Replace of Existing Pump	68	set	2,000	136,000	300	20,400	
6)Circulation fee	2	%		149,358			
7)Transportaion charge	4	%		298,716			
Sub total				8,051,974		1,140,585	65
2 Gates and Valves							
1)Trash Rack 4.05x6.25	6	set	182,000	1,092,000	27,300	163,800	7
2)Butterfly Valve D=1350	6	set	79,800	478,800	11,970	71,820	7
3)Flap Valve D=1650	6	set	26,600	159,600	3,990	23,940	3
4)Movable Crane 15T LX Lk=4.5m	1	set	140,700	140,700	21,105	21,105	5
5)Holizontal conveyor 750mmWx41mL	1	set	77,700	77,700	11,655	11,655	3
6)Inclined conveyor 750mmWx15mL	1	set	72,100	72,100	10,815	10,815	1
7)Circulation fee	2	%		40,418			2
8)Transportation charge	5	%		101,045			
Sub total				2,162,363		303,135	28
Total 1+2				10,214,337		1,443,720	93
3 Elelectric receiving facilities							
1) 34kv Incoming Panel	1	set		178,500	26,775	26,775	
2) 34kv Incoming Circuit Breaker Panel	1	set		207,200	31,080	31,080	
3) 4500KVA Main Transformer	1	set		525,000	78,750	78,750	
4) Circulation fee	2	%		18,214			
5) Transportation charge	5	%		45,535			
Sub total				974,449		136,605	
4 Distribution Panel and Others							
1) 3kv Incoming Panel	1	set	72,800	72,800	10,920	10,920	
2) 3kv Reacor & Capacitor Panel	6	set	57,400	344,400	8,610	51,660	
3) 3kv Motor Starter Panel	6	set	63,000	378,000	9,450	56,700	
4)Auxiliary Transformer Feeder Panel	1	set	65,100	65,100	9,765	9,765	
5) 500kva Auxiliary Transformer	1	set	53,900	53,900	8,085	8,085	
6)Low Voltage Panel	2	set	33,600	67,200	5,040	10,080	
7)Replace of Transmissionline	1	LS		197,655	0	0	
8)Local Pump Control Panel	6	set	20,300	121,800	3,045	18,270	
6)Auxiliary Relay Panel	6	set	36,400	218,400	5,460	32,760	
7)Cables	1	set	210,000	210,000	31,500	31,500	
8) Circulation fee	2	%		34,585			
9) Transportation charge	5	%		86,463			
Sub total				1,850,303		229,740	
Total of 3+4				2,824,752		366,345	
4 Total 1+2+3+4				13,039,089		1,810,065	

5 Unit cost for Mechanical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Weight of Equipment	TON	93	11	15	3	122
Equipment	USD	10,214,337	7,306	8,739	1,728	10,232,111
Instalation	USD	1,443,720	1,029	1,323	261	1,446,332
Design Fee 2% of Equipment	USD	204,287	146	175	35	204,642
Others 3% of Equipment	USD	306,430	219	262	52	306,963
Contingency 5% of 1+2	USD	582,903	417	503	99	583,922
Total	USD	12,751,677	9,117	11,002	2,175	12,773,970
Unit cost for a pump(14400m3/h)	USD					2,128,995

6 Unit cost for Electrical Equipment

Items	unit	Pump station	Sluice 1 (Pump up)	Sluice 2 (Gravity)	Sluice 3 (Irrig.)	Total
Equipment	USD	2,824,752	346,435	445,417	83,684	3,700,288
Instalation	USD	366,345	44,930	57,767	10,853	479,894
Design Fee 2% of Equipment	USD	56,495	6,929	8,908	1,674	74,006
Others 3% of Equipment	USD	84,743	10,393	13,363	2,511	111,009
Contingency 5% of 1+2	USD	159,555	19,568	25,159	4,727	209,009
Total	USD	3,491,889	428,255	550,613	103,449	4,574,205
Unit cost for a pump(14400m3/h)	USD	581,981	71,376	91,769	17,241	762,368

TABLE F-3.2.5 (1) QUANTITIES CALCULATION FOR TAO KHE CREEK

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
13 K+ 650	0	0									
14 K+ 0	350	350									
15 K+ 0	1350	1000									
15 K+ 500	1850	500									
16 K+ 0	2350	500									
17 K+ 0	3350	1000									
17 K+ 500	3850	500	60		18		42		20		400
18 K+ 0	4350	500	60	30000	18	9000	42	21000	20	10000	400
18 K+ 400	4750	400	72	24000	16	7200	56	16800	35	8000	320
19 K+ 0	5350	600	72	43200	16	9600	56	33600	35	21000	480
19 K+ 750	6100	750	62	54000	3	12000	59	42000	25	26250	600
20 K+ 0	6350	250	62	15500	3	750	59	14750	25	6250	200
21 K+ 0	7350	1000	82	62000	7	3000	75	59000	45	25000	800
22 K+ 0	8350	1000	80	82000	6	7000	74	75000	45	45000	800
22 K+ 300	8650	300	12	24000	12	1800		22200		13500	240
23 K+ 0	9350	700	12	8400	12	8400					560
24 K+ 400	10750	1400		16800		16800					
				359900		75550		284350		155000	4400

TABLE F-3.2.5 (2) QUANTITIES CALCULATION FOR KT TRIN XA

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	45		18		27		22		0
1 K+ 0	1000	1000	34	45000	7	18000	27	27000	12	22000	800
1 K+ 300	1300	300	10	10200	5	2100	5	8100	5	3600	240
2 K+ 0	2000	700	10	7000	5	3500	5	3500	5	3500	560
3 K+ 0	3000	1000	4	10000	4	5000		5000		5000	800
4 K+ 0	4000	1000	10	4000	5	4000	5		5		800
5 K+ 0	5000	1000	6	10000	1	5000	5	5000		5000	800
5 K+ 500	5500	500	6	3000	1	500	5	2500			400
6 K+ 0	6000	500		3000		500		2500			400
				92200		38600		53600		39100	4800

TABLE F-3.2.5 (3) QUANTITIES CALCULATION FOR KT 6 XA

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	25	0	11		14		25		0
1 K+ 0	1000	1000	28	25000	23	11000	5	14000	21	25000	800
2 K+ 0	2000	1000	17	28000	17	23000		5000	15	21000	800
2 K+ 600	2600	600	12	10200	7	10200	5	0	16	9000	480
3 K+ 0	3000	400	12	4800	7	2800	5	2000	16	6400	320
3 K+ 800	3800	800	16	9600	6	5600	10	4000	26	12800	640
4 K+ 0	4000	200	16	3200	6	1200	10	2000	26	5200	160
5 K+ 0	5000	1000	16	16000	6	6000	10	10000	15	26000	800
6 K+ 0	6000	1000	16	16000	6	6000	10	10000	15	15000	800
6 K+ 500	6500	500	16	8000	6	3000	10	5000	15	7500	400
				120800		68800		52000		127900	5200

TABLE F-3.2.5 (4) QUANTITIES CALCULATION FOR KT PHAT TICH

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	14				14		14		0
1 K+ 0	1000	1000	12	14000	0	0	12	14000	0	14000	800
2 K+ 0	2000	1000	17	12000	8	0	9	12000	14	0	800
3 K+ 0	3000	1000	16	17000	2	8000	14	9000	0	14000	800
3 K+ 200	3200	200	14	3200	8	400	6	2800	14	0	160
4 K+ 0	4000	800	14	11200	8	6400	6	4800	14	11200	640
4 K+ 200	4200	200	14	2800	8	1600	6	1200	14	2800	160
				60200		16400		43800		42000	3360

TABLE F-3.2.5 (5) QUANTITIES CALCULATION FOR KT 4 XA

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	35	0	8	0	27	0	30	0	0
1 K+ 0	1000	1000	35	35000	8	8000	27	27000	30	30000	800
1 K+ 400	1400	400	35	14000	8	3200	27	10800	30	12000	320
				49000		11200		37800		42000	1120

TABLE F-3.2.5 (6) QUANTITIES CALCULATION FOR KT CAU NAU

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	21	0	6	0	15	0	20	0	0
0 K+ 800	800	800	18	16800	6	4800	12	12000	18	16000	640
1 K+ 0	1000	200	18	3600	6	1200	12	2400	18	3600	160
2 K+ 0	2000	1000	18	18000	6	6000	12	12000	18	18000	800
2 K+ 500	2500	500	6	9000	4	3000	2	6000	0	9000	400
3 K+ 0	3000	500	6	3000	4	2000	2	1000	0	0	400
4 K+ 0	4000	1000	6	6000	4	4000	2	2000	0	0	800
4 K+ 300	4300	300	6	1800	4	1200	2	600	0	0	240
				41400		17400		24000		30600	2800

TABLE F-3.2.5 (7) QUANTITIES CALCULATION FOR KT CAU NAU-1

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	16	0	8	0	8	0	10	0	0
1 K+ 0	1000	1000	16	16000	8	8000	8	8000	10	10000	800
1 K+ 700	1700	700	12	11200	8	5600	4	5600	8	7000	560
2 K+ 0	2000	300	12	3600	8	2400	4	1200	8	2400	240
2 K+ 200	2200	200	8	2400	6	1600	2	800	6	1600	160
3 K+ 0	3000	800	8	6400	6	4800	2	1600	6	4800	640
3 K+ 200	3200	200	8	1600	6	1200	2	400	6	1200	160
				41200		23600		17600		27000	2560

TABLE F-3.2.5 (8) QUANTITIES CALCULATION FOR KT CAU NAU-2

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	12	0	6	0	6	0	6	0	0
1 K+ 0	1000	1000	12	12000	6	6000	6	6000	6	6000	800
2 K+ 0	2000	1000	12	12000	6	6000	6	6000	6	6000	800
3 K+ 0	3000	1000	12	12000	6	6000	6	6000	6	6000	800
3 K+ 300	3300	300	12	3600	6	1800	6	1800	6	1800	240
				39600		19800		19800		19800	2640

TABLE F-3.2.5 (9) QUANTITIES CALCULATION FOR KON TEN CREEK

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0									
1 K+ 0	1000	1000									
1 K+ 950	1950	950									
2 K+ 0	2000	50									
3 K+ 0	3000	1000									
3 K+ 50	3050	50									

TABLE F-3.2.5 (10) QUANTITIES CALCULATION FOR TAN CHI CANAL

STATION	DISTANCE ACUM. (m)	DISTANCE INTVL. (m)	CUT AREA (m2)	CUT QUANT. (m3)	FILL AREA (m2)	FILL QUQNTI. (m3)	SPOILED BANK AREA (m2)	SPOILED BANK QUANT. (m3)	BORROW AREA LENGTH (m)	BORROW AREA AREA (m2)	BORROW AREA GRAVEL (m3)
0 K+ 0	0	0	24	0	0	0	24	0	10	0	0
1 K+ 0	1000	1000	24	24000	0	0	24	24000	10	10000	800
1 K+ 500	1500	500	24	12000	0	0	24	12000	10	5000	400
				36000		0		36000		15000	1200

TABLE F-3.2.5 (11) LIST OF QUANTITY CALCULATION

ITEM	R.C. PIPE (m)					CONC.	GATE	Canal				Structure		
								BRICK	EXCAV.	FILL	GRAVEL	BRICK	EXCAV.	FILL
CANAL	0.3	0.45	0.6	0.7	0.8	(m3)	(t)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)	(m3)
MAIN CANAL	720	120	100	140	40	561	4.960	15081	14016	28032	4906	39	3950	3697
DAY GANG	68						0.015	14	682	1363	239	2	222	213
DONG BONG	85						0.018	17	848	1696	297	3	276	265
N 3B (N3A)	157			78			0.126	47	1568	3136	549	8	843	784
N 11	80			40			0.064	244	800	1600	280	4	430	400
N 4	440					212	1.065	130	4400	8800	1540	15	1430	1375
N 5	194			97			0.157	607	1944	3888	680	10	1045	972
N 13	240		120				0.156	728	2400	4800	840	13	1260	1184
CAU NGATU	112			56			0.090	34	1120	2240	392	6	602	560
N 15	160				80		0.158	550	1600	3200	560	8	880	809
BAN THONG	56						0.012	11	560	1120	196	2	182	175
NAM NUI CHE	372			186			0.300	744	3720	7440	1302	20	2000	1859
BAC	320			160			0.258	96	3200	6400	1120	17	1720	1599
NGHIA TRANG	38						0.008	8	384	768	134	1	125	120
CHE DOC	36						0.008	7	360	720	126	1	117	112
THUONG LAM	72	36					0.033	22	720	1440	252	4	365	347
N6	600	360				48	0.589	2686	10400	20800	3640	34	3255	3094
HOAI THI	86						0.019	17	864	1728	302	3	281	270
M22	26	360					0.181	149	262	523	92	14	1390	1301
M24	32			16			0.026	1745	320	640	112	2	172	160
N8	416					171	0.727	117	4160	8320	1456	15	1352	1300
N35	128		64				0.083	38	1280	2560	448	7	672	631
N34	304				152		0.300	869	3040	6080	1064	16	1672	1537
TOTAL	4743	876	284	774	272	991	9.353	23960	58647	117294	20527	243	24238	22763

F-3.3 Disbursement Schedule

FIGURE F-3.3.1 IMPLEMENTATION SCHEDULE

Year	1st Year			2nd Year			3rd Year			4th Year			5th Year			6th Year			7th Year		
Items	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
I Detail Design	V1,V2			V3,V4,V5									V6,V7								
II Loan Procedure				V1,V2			V3,V4,V5									V6,V7					
III Tendering					V1,V2			V3,V4,V5										V6,V7			
IV Land Aquisition				V1,V2																	
V Construction																					
1. Equip. Procurement																					
2. Main Drainage System																					
(1) Pump Station						Tanchi pump St.															
(2) Drainage Canal							4.4km				4.5km										
(3) Drainage Structure											n=32										
(4) Transmission Line									n=10												
3. Main Irrigation System																					
(1) Irrigation Canal														5.8km			5.9km			5.8km	
(2) Structure																	n=37			n=37	
4. Secondary Drainage System							KT TANCHI, KT.TRINH XA, KT 4XA, KT CAUNAU,KT 6XA and OTHERS														
5. Secondary Irrigation System														N6			OTHERS				
6. Main Farm Road																					
7. Fish Pond																					
IV Consultant Service																					

TABLE F-3.3.2(1) DISBURSEMENT SCHEDULE (TAN CHI AREA) Viet Nam Pump & Material - Alternative-1

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			373.4	82.8	2453.1	745.4									3654.7
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
KT Tan Chi					85.6	83.2									168.8
Overhead					47.5	37.4	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	355.7
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	242.0	38.3	121.0	38.3	121.0	38.3		38.3		38.3		38.3		38.3	752.1
d. Project Administration	23.9	38.3	12.0	38.3	12.0	38.3		38.3		38.3		38.3		38.3	316.0
3. Physical Contingency	26.6	7.7	50.6	21.9	435.9	160.8	66.6	68.9	27.4	31.5	28.6	32.6	31.5	41.5	1032.1
4. Price Escalation	8.4	4.2	37.8	24.7	520.1	278.9	110.3	163.4	58.7	95.7	75.4	121.8	99.3	185.8	1784.4
Total	300.9	88.5	594.9	266.1	5314.8	2048.1	842.6	921.5	360.6	442.0	389.7	479.9	445.3	642.3	13137.1

TABLE F-3.3.2(2) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Viet Nam Pump & Material - Alternative-1

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			427.5	156.3	2786.6	1406.4									4776.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
Conten Creek					74.8	85.0									159.8
Other canals					190.8	215.8									406.6
KT Han Quang					85.6	83.2									168.8
Overhead					74.1	67.5	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	412.4
d. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	335.5	79.2	167.8	79.2	167.8	79.2		79.2		79.2		79.2		79.2	1225.5
d. Project Administration	33.3	79.2	16.6	79.2	16.6	79.2		79.2		79.2		79.2		79.2	620.9
3. Physical Contingency	36.9	15.8	61.2	37.7	623.6	448.2	66.6	77.1	27.4	39.7	28.6	40.7	31.5	49.7	1584.6
4. Price Escalation	11.7	8.7	45.7	42.5	744.1	777.1	110.3	182.8	58.7	120.5	75.4	152.4	99.3	222.5	2651.5
Total	417.4	183.0	718.8	456.8	7603.5	5707.4	842.6	1030.9	360.6	556.9	389.7	600.4	445.3	768.9	20082.1

TABLE F-3.3.2(3) DISBURSEMENT SCHEDULE (TAN CHI AREA) Viet Nam Pump & Material - Alternative-2

(UNIT;1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			373.4	82.8	2453.1	745.4									3654.7
b. Drainage Canal															0.0
Tac Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
KT Tan Chi					85.6	83.2									168.8
Overhead					47.5	37.4	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	355.7
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											176.2	517.0			693.2
Overhead									11.7	75.3	17.6	51.7			156.3
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	258.1	58.2	129.0	58.2	129.0	58.2		58.2		58.2		58.2		58.2	923.5
d. Project Administration	25.6	58.2	12.8	58.2	12.8	58.2		58.2		58.2		58.2		58.2	458.6
3. Physical Contingency	28.4	11.6	51.5	25.9	436.8	164.8	66.6	72.9	40.3	118.3	48.0	93.4	31.5	45.5	1235.4
4. Price Escalation	9.0	6.4	38.5	29.2	521.2	285.8	110.3	172.8	86.1	359.6	126.5	349.4	99.3	203.6	2397.6
Total	321.1	134.4	605.2	314.3	5325.5	2098.8	842.6	974.7	529.1	1661.1	654.0	1376.9	445.3	703.9	15986.9
INUNDATED AREA (ha)		1937		1937		1937		1101		1060		1019		978	936

TABLE F-3.3.2(4) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Viet Nam Pump & Material - Alternative-2

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			427.5	156.3	2786.6	1406.4									4776.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
Conten Creek					74.8	85.0									159.8
Other canals					190.8	215.8									406.6
KT Han Quang					85.6	83.2									168.8
Overhead					74.1	67.5	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	412.4
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											178.0	522.2			700.2
Overhead									11.7	75.3	17.8	52.2			157.0
d. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	351.7	99.2	175.9	99.2	175.9	99.2		99.2		99.2		99.2		99.2	1397.9
d. Project Administration	34.9	99.2	17.4	99.2	17.4	99.2		99.2		99.2		99.2		99.2	764.1
3. Physical Contingency	38.7	19.8	62.1	41.7	624.5	452.2	66.6	81.1	40.3	126.5	48.2	102.2	31.5	53.7	1788.9
4. Price Escalation	12.2	10.9	46.4	47.0	745.1	784.1	110.3	192.3	86.1	384.5	127.0	382.2	99.3	240.4	3267.7
Total	437.5	229.2	729.2	505.4	7614.4	5758.4	842.6	1084.3	529.1	1776.2	656.7	1506.2	445.3	830.8	22945.2
INUNDATED AREA (ha)		2710		2710		2710		1612		1558		1504		1450	1395

TABLE F-3.3.2(5) DISBURSEMENT SCHEDULE (TAN CHI AREA) Viet Nam Pump & Material - Alternative-3

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			373.4	82.8	2453.1	745.4									3654.7
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
KT Tan Chi					85.6	83.2									168.8
Overhead					47.5	37.4	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	355.7
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											176.2	517.0			693.2
Overhead									11.7	75.3	17.6	51.7			156.3
d. Pond Construction													234.0	28.3	262.3
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	269.8	58.6	134.9	58.6	134.9	58.6		58.6		58.6		58.6		58.6	949.8
d. Project Administration	26.7	58.6	13.4	58.6	13.4	58.6		58.6		58.6		58.6		58.6	463.7
3. Physical Contingency	29.7	11.7	52.2	26.0	437.4	164.9	66.6	73.0	40.3	118.4	48.0	93.5	54.9	48.4	1264.8
4. Price Escalation	9.4	6.4	39.0	29.3	521.9	285.9	110.3	173.0	86.1	359.8	126.5	349.7	173.1	216.7	2487.1
Total	335.5	135.4	612.8	315.3	5333.5	2099.8	842.6	975.8	529.1	1662.2	654.0	1378.0	776.5	748.9	16399.5
INUNDATED AREA (ha)		1937		1937		1937		1101		1060		1019		978	936

TABLE F-3.3.2(6) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Viet Nam Pump & Material - Alternative-3

(UNIT;1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			427.5	156.3	2786.6	1406.4									4776.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
Conten Creek					74.8	85.0									159.8
Other canals					190.8	215.8									406.6
KT Han Quang					85.6	83.2									168.8
Overhead					74.1	67.5	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	412.4
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											178.0	522.2			700.2
Overhead									11.7	75.3	17.8	52.2			157.0
d. Pond Construction													234.0	238.2	472.2
e. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	363.4	102.6	181.7	102.6	181.7	102.6		102.6		102.6		102.6		102.6	1445.0
d. Project Administration	36.0	102.6	18.0	102.6	18.0	102.6		102.6		102.6		102.6		102.6	790.2
3. Physical Contingency	39.9	20.5	62.7	42.4	625.1	452.9	66.6	81.8	40.3	127.2	48.2	102.9	54.9	78.2	1843.4
4. Price Escalation	12.7	11.3	46.8	47.7	745.9	785.3	110.3	193.9	86.1	386.6	127.0	384.8	173.1	350.1	3461.4
Total	452.0	237.0	736.8	513.6	7622.2	5767.0	842.6	1093.4	529.1	1785.7	656.7	1516.2	776.5	1210.0	23738.9
INUNDATED AREA (ha)		2710		2710		2710		1612		1558		1504		1450	1395

TABLE F-3.3.2(7) DISBURSEMENT SCHEDULE (TAN CHI AREA) Foreign Pump & Material - Alternative-1

(UNIT:1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2011.8	179.1	11965.8	1611.7									15768.4
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
KT Tan Chi					85.6	83.2									168.8
Overhead					47.5	37.4	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	355.7
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	785.0	52.0	392.5	52.0	392.5	52.0		52.0		52.0		52.0		52.0	1934.0
d. Project Administration	76.8	52.0	38.4	52.0	38.4	52.0		52.0		52.0		52.0		52.0	517.6
3. Physical Contingency	86.2	10.4	244.3	34.3	1416.9	250.2	66.6	71.7	27.4	34.2	28.6	35.3	31.5	44.2	2381.8
4. Price Escalation	27.3	5.7	182.4	38.7	1690.7	433.8	110.3	169.9	58.7	104.0	75.4	132.0	99.3	198.1	3326.3
Total	975.3	120.1	2869.4	416.1	17277.1	3186.1	842.6	958.1	360.6	480.5	389.7	520.3	445.3	684.7	29525.8

TABLE F-3.3.2(8) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Foreign Pump & Material - Alternative-1

(UNIT;1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2634.5	243.4	16335.6	2190.4									21403.9
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
Conten Creek					74.8	85.0									159.8
Other canals					190.8	215.8									406.6
KT Han Quang					85.6	83.2									168.8
Overhead					74.1	67.5	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	412.4
c. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	1105.8	91.6	552.9	91.6	552.9	91.6		91.6		91.6		91.6		91.6	2852.8
d. Project Administration	108.5	91.6	54.3	91.6	54.3	91.6		91.6		91.6		91.6		91.6	858.3
3. Physical Contingency	121.4	18.3	324.2	48.9	2020.8	529.1	66.6	79.6	27.4	42.1	28.6	43.2	31.5	52.2	3433.8
4. Price Escalation	38.5	10.1	242.1	55.1	2411.2	917.4	110.3	188.6	58.7	128.1	75.4	161.7	99.3	233.6	4729.8
Total	1374.2	211.6	3808.0	592.5	24639.7	6737.3	842.6	1064.0	360.6	591.7	389.7	637.0	445.3	807.3	42501.5

TABLE F-3.3.2(9) DISBURSEMENT SCHEDULE (TAN CHI AREA) Foreign Pump & Material - Alternative-2

(UNIT:1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2011.8	179.1	11965.8	1611.7									15768.4
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
KT Tan Chi					85.6	83.2									168.8
Overhead					47.5	37.4	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	355.7
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											176.2	517.0			693.2
Overhead									11.7	75.3	17.6	51.7			156.3
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	801.1	72.0	400.5	72.0	400.5	72.0		72.0		72.0		72.0		72.0	2106.1
d. Project Administration	78.4	72.0	39.2	72.0	39.2	72.0		72.0		72.0		72.0		72.0	660.8
3. Physical Contingency	88.0	14.4	245.2	38.3	1417.8	254.2	66.6	75.7	40.3	121.1	48.0	96.2	31.5	48.2	2585.2
4. Price Escalation	27.9	7.9	183.1	43.2	1691.8	440.8	110.3	179.4	86.1	368.0	126.5	359.8	99.3	216.0	3939.8
Total	995.3	166.3	2879.7	464.6	17287.8	3237.1	842.6	1011.6	529.1	1699.8	654.0	1417.5	445.3	746.6	32377.4
INUNDATED AREA (ha)		1937		1937		1937		1101		1060		1019		978	936

TABLE F-3.3.2(10) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Foreign Pump & Material - Alternative-2

(UNIT:1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2634.5	243.4	16335.6	2190.4									21403.9
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
Conten Creek					74.8	85.0									159.8
Other canals					190.8	215.8									406.6
KT Han Quang					85.6	83.2									168.8
Overhead					74.1	67.5	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	412.4
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											178.0	522.2			700.2
Overhead									11.7	75.3	17.8	52.2			157.0
d. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	1122.0	111.7	561.0	111.7	561.0	111.7		111.7		111.7		111.7		111.7	3025.9
d. Project Administration	110.2	111.7	55.1	111.7	55.1	111.7		111.7		111.7		111.7		111.7	1002.3
3. Physical Contingency	123.2	22.3	325.1	52.9	2021.7	533.1	66.6	83.6	40.3	129.0	48.2	104.7	31.5	56.2	3638.2
4. Price Escalation	39.0	12.3	242.8	59.6	2412.3	924.3	110.3	198.2	86.1	392.1	127.0	391.6	99.3	251.6	5346.4
Total	1394.5	258.0	3818.4	641.3	24650.5	6788.5	842.6	1117.8	529.1	1811.3	656.7	1543.0	445.3	869.5	45366.5
INUNDATED AREA (ha)		2710		2710		2710		1612		1558		1504		1450	1395

TABLE F-3.3.2(11) DISBURSEMENT SCHEDULE (TAN CHI AREA) Foreign Pump & Material - Alternative-3

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2011.8	179.1	11965.8	1611.7									15768.4
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
KT Tan Chi					85.6	83.2									168.8
Overhead					47.5	37.4	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	355.7
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											176.2	517.0			693.2
Overhead									11.7	75.3	17.6	51.7			156.3
d. Pond Construction													234.0	28.3	262.3
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	812.8	72.3	406.4	72.3	406.4	72.3		72.3		72.3		72.3		72.3	2131.7
d. Project Administration	79.6	72.3	39.8	72.3	39.8	72.3		72.3		72.3		72.3		72.3	665.3
3. Physical Contingency	89.2	14.5	245.8	38.4	1418.5	254.3	66.6	75.7	40.3	121.1	48.0	96.2	54.9	51.1	2614.5
4. Price Escalation	28.3	8.0	183.6	43.3	1692.5	440.9	110.3	179.5	86.1	368.2	126.5	360.0	173.1	228.9	4028.9
Total	1009.9	167.0	2887.4	465.3	17295.7	3237.8	842.6	1012.4	529.1	1700.7	654.0	1418.4	776.5	791.3	32788.2
INUNDATED AREA (ha)		1937		1937		1937		1101		1060		1019		978	936

TABLE F-3.3.2(12) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Foreign Pump & Material - Alternative-3

(UNIT:1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2634.5	243.4	16335.6	2190.4									21403.9
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa											259.8	226.3			486.1
KT Phat Thich									135.5	115.9					251.4
KT 4 Xa									114.0	100.7					214.7
KT Kau Nau													95.2	91.8	187.0
KT Kau Nau-1													97.2	109.5	206.7
KT Kau Nau-2													93.6	106.3	199.9
Conten Creek					74.8	85.0									159.8
Other canals					190.8	215.8									406.6
KT Han Quang					85.6	83.2									168.8
Overhead					74.1	67.5	60.5	55.7	25.0	21.7	26.0	22.6	28.6	30.8	412.4
c. Irrigation Canal															
South Irrigation Canal									76.1	589.8					665.9
N 6 Irrigation Canal									40.5	163.4					203.9
Others											178.0	522.2			700.2
Overhead									11.7	75.3	17.8	52.2			157.0
d. Pond Construction													234.0	238.2	472.2
e. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines					1250.0	375.0									1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	1133.7	115.0	566.8	115.0	566.8	115.0		115.0		115.0		115.0		115.0	3072.3
d. Project Administration	111.3	115.0	55.7	115.0	55.7	115.0		115.0		115.0		115.0		115.0	1027.7
3. Physical Contingency	124.5	23.0	325.7	53.5	2022.3	533.8	66.6	84.3	40.3	129.7	48.2	105.3	54.9	80.7	3692.6
4. Price Escalation	39.4	12.7	243.2	60.4	2413.0	925.5	110.3	199.7	86.1	394.1	127.0	394.1	173.1	361.2	5539.7
Total	1408.9	265.7	3825.9	649.3	24658.3	6796.9	842.6	1126.6	529.1	1820.6	656.7	1552.7	776.5	1248.4	46158.3
INUNDATED AREA (ha)		2710		2710		2710		1612		1558		1504		1450	1395

FIGURE F-3.3.3 IMPLEMENTATION SCHEDULE (4 YEARS)

Items \ Year	1st Year			2nd Year			3rd Year			4th Year		
	I	II	III	I	II	III	I	II	III	I	II	III
I Detail Design	V1,V2	V3,V4	V5,V6	V7								
II Loan Procedure				V1,V2	V3,V4	V5,V6	V7					
III Tendering						V1,V2	V3,V4	V5,V6	V7			
IV Land Acquisition				V1,V2	V3,V4	V5,V6	V7					
V Construction												
1. Equipment Procurement												
2. Main Drainage System												
(1) Pump Station												
(2) Drainage Canal												
(3) Drainage Structures												
(4) Transmission Line												
3. Main Irrigation System												
(1) Irrigation Canal												
(2) Structure												
4. Secondary Drainage System												
5. Secondary Irrigation System												
6. Main Farm Road												
7. Fish Pond												
VI Consultant Service												

TABLE F-3.3.4(1) DISBURSEMENT SCHEDULE (TAN CHI AREA) Viet Nam Pump & Material - Alternative-1

(UNIT;1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			340.6	115.6	2157.9	1040.7									3654.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
KT Tan Chi							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	148.6	139.1	0.0	0.0	0.0	0.0	0.0	0.0	355.7
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	225.6	75.1	112.8	75.1	112.8	75.1		75.1		0.0		0.0		0.0	751.6
d. Project Administration	22.3	75.1	11.2	75.1	11.2	75.1		75.1		0.0		0.0		0.0	345.1
3. Physical Contingency	24.8	15.0	171.5	70.1	271.0	151.1	163.5	168.0	0.0	0.0	0.0	0.0	0.0	0.0	1034.9
4. Price Escalation	7.9	8.3	128.1	79.0	323.4	262.0	270.8	398.2	0.0	0.0	0.0	0.0	0.0	0.0	1477.6
Total	280.5	173.5	2014.1	849.9	3304.9	1923.8	2069.0	2246.1	0.0	0.0	0.0	0.0	0.0	0.0	12861.8

TABLE F-3.3.4(2) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Viet Nam Pump & Material - Alternative-1

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			427.5	156.3	2786.6	1406.4									4776.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
Conten Creek							74.8	85.0							159.8
Other canals							190.8	215.8							406.6
KT Han Quang							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	175.2	169.1	0.0	0.0	0.0	0.0	0.0	0.0	412.4
c. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	335.5	138.6	167.8	138.6	167.8	138.6		138.6		0.0		0.0		0.0	1225.5
d. Project Administration	33.3	138.6	16.6	138.6	16.6	138.6		138.6		0.0		0.0		0.0	620.9
3. Physical Contingency	36.9	27.7	186.2	87.1	460.0	380.3	192.7	213.8	0.0	0.0	0.0	0.0	0.0	0.0	1584.6
4. Price Escalation	11.7	15.2	139.1	98.1	548.8	659.5	319.2	506.8	0.0	0.0	0.0	0.0	0.0	0.0	2298.4
Total	417.4	320.2	2187.1	1055.7	5608.3	4843.3	2438.8	2858.3	0.0	0.0	0.0	0.0	0.0	0.0	19729.1

TABLE F-3.3.4(3) DISBURSEMENT SCHEDULE (TAN CHI AREA) Viet Nam Pump & Material - Alternative-2

(UNIT:1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			340.6	115.6	2157.9	1040.7									3654.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
KT Tan Chi							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	148.6	139.1	0.0	0.0	0.0	0.0	0.0	0.0	355.7
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					176.2	517.0									693.2
Overhead			11.7	75.3	17.6	51.7									156.3
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	241.7	110.1	120.8	110.1	120.8	110.1		110.1		0.0		0.0		0.0	923.7
d. Project Administration	23.9	110.1	12.0	110.1	12.0	110.1		110.1		0.0		0.0		0.0	488.3
3. Physical Contingency	26.6	22.0	185.2	159.9	291.3	214.9	163.5	175.0	0.0	0.0	0.0	0.0	0.0	0.0	1238.4
4. Price Escalation	8.4	12.1	138.3	180.3	347.6	372.7	270.8	414.8	0.0	0.0	0.0	0.0	0.0	0.0	1745.0
Total	300.6	254.3	2175.1	1939.6	3552.0	2737.1	2069.0	2339.7	0.0	0.0	0.0	0.0	0.0	0.0	15367.3
INUNDATED AREA (ha)		1937		1937		1604		1270		936		936		936	936

TABLE F-3.3.4(4) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Viet Nam Pump & Material - Alternative-2

(UNIT;1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			427.5	156.3	2786.6	1406.4									4776.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
Conten Creek							74.8	85.0							159.8
Other canals							190.8	215.8							406.6
KT Han Quang							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	175.2	169.1	0.0	0.0	0.0	0.0	0.0	0.0	412.4
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					178.0	522.2									700.2
Overhead			11.7	75.3	17.8	52.2									157.0
d. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	351.7	173.7	175.9	173.7	175.9	173.7		173.7		0.0		0.0		0.0	1398.3
d. Project Administration	34.9	173.7	17.4	173.7	17.4	173.7		173.7		0.0		0.0		0.0	764.5
3. Physical Contingency	38.7	34.7	199.9	176.9	480.4	444.8	192.7	220.8	0.0	0.0	0.0	0.0	0.0	0.0	1788.9
4. Price Escalation	12.2	19.1	149.3	199.5	573.3	771.2	319.2	523.4	0.0	0.0	0.0	0.0	0.0	0.0	2567.2
Total	437.5	401.2	2348.3	2145.6	5857.9	5664.2	2438.8	2952.1	0.0	0.0	0.0	0.0	0.0	0.0	22245.6

TABLE F-3.3.4(5) DISBURSEMENT SCHEDULE (TAN CHI AREA) Viet Nam Pump & Material - Alternative-3

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			340.6	115.6	2157.9	1040.7									3654.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
KT Tan Chi							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	148.6	139.1	0.0	0.0	0.0	0.0	0.0	0.0	355.7
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					176.2	517.0									693.2
Overhead			11.7	75.3	17.6	51.7									156.3
d. Pond Construction					234.0	28.3									262.3
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	253.4	110.7	126.7	110.7	126.7	110.7		110.7		0.0		0.0		0.0	949.6
d. Project Administration	25.1	110.7	12.5	110.7	12.5	110.7		110.7		0.0		0.0		0.0	492.9
3. Physical Contingency	27.9	22.1	185.8	160.1	315.3	217.9	163.5	175.1	0.0	0.0	0.0	0.0	0.0	0.0	1267.7
4. Price Escalation	8.8	12.2	138.8	180.5	376.3	377.8	270.8	415.1	0.0	0.0	0.0	0.0	0.0	0.0	1780.2
Total	315.2	255.7	2182.6	1941.0	3845.1	2774.7	2069.0	2341.3	0.0	0.0	0.0	0.0	0.0	0.0	15724.6
INUNDATED AREA (ha)		1937		1937		1604		1270		936		936		936	936

TABLE F-3.3.4(6) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Viet Nam Pump & Material - Alternative-3

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			427.5	156.3	2786.6	1406.4									4776.8
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
Conten Creek							74.8	85.0							159.8
Other canals							190.8	215.8							406.6
KT Han Quang							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	175.2	169.1	0.0	0.0	0.0	0.0	0.0	0.0	412.4
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					178.0	522.2									700.2
Overhead			11.7	75.3	17.8	52.2									157.0
d. Pond Construction					234.0	238.2									472.2
e. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	363.4	179.5	181.7	179.5	181.7	179.5		179.5		0.0		0.0		0.0	1444.8
d. Project Administration	36.0	179.5	18.0	179.5	18.0	179.5		179.5		0.0		0.0		0.0	790.0
3. Physical Contingency	39.9	35.9	200.5	178.1	504.5	469.8	192.7	222.0	0.0	0.0	0.0	0.0	0.0	0.0	1843.4
4. Price Escalation	12.7	19.7	149.8	200.8	601.9	814.6	319.2	526.2	0.0	0.0	0.0	0.0	0.0	0.0	2644.8
Total	452.0	414.6	2355.8	2159.7	6151.1	5982.2	2438.8	2967.7	0.0	0.0	0.0	0.0	0.0	0.0	22921.8
INUNDATED AREA (ha)		2710		2710		2272		1834		1395		1395		1395	1395

TABLE F-3.3.4(7) DISBURSEMENT SCHEDULE (TAN CHI AREA) Foreign Pump & Material - Alternative-1

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2011.8	179.1	11965.8	1611.7									15768.4
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
KT Tan Chi							85.6	83.2							168.8
Overhead			0.0	0.0	39.0	29.1	148.6	139.1	0.0	0.0	0.0	0.0	0.0	0.0	355.7
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	785.0	91.0	392.5	91.0	392.5	91.0		91.0		0.0		0.0		0.0	1934.0
d. Project Administration	76.8	91.0	38.4	91.0	38.4	91.0		91.0		0.0		0.0		0.0	517.6
3. Physical Contingency	86.2	18.2	369.3	79.6	1282.5	211.4	163.5	171.2	0.0	0.0	0.0	0.0	0.0	0.0	2381.8
4. Price Escalation	27.3	10.0	275.8	89.8	1530.3	366.5	270.8	405.8	0.0	0.0	0.0	0.0	0.0	0.0	2976.2
Total	975.3	210.2	4337.8	965.5	15638.1	2691.4	2069.0	2288.6	0.0	0.0	0.0	0.0	0.0	0.0	29175.8

TABLE F-3.3.4(8) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Foreign Pump & Material - Alternative-1

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2634.5	243.4	16335.6	2190.4									21403.9
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
Conten Creek							74.8	85.0							159.8
Other canals							190.8	215.8							406.6
KT Han Quang							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	175.2	169.1	0.0	0.0	0.0	0.0	0.0	0.0	412.4
c. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	1105.8	160.4	552.9	160.4	552.9	160.4		160.4		0.0		0.0		0.0	2853.2
d. Project Administration	108.5	160.4	54.3	160.4	54.3	160.4		160.4		0.0		0.0		0.0	858.7
3. Physical Contingency	121.4	32.1	449.2	100.1	1857.1	463.1	192.7	218.1	0.0	0.0	0.0	0.0	0.0	0.0	3433.9
4. Price Escalation	38.5	17.6	335.5	112.9	2216.0	803.0	319.2	517.1	0.0	0.0	0.0	0.0	0.0	0.0	4359.7
Total	1374.2	370.5	5276.3	1214.2	22644.5	5897.2	2438.8	2916.6	0.0	0.0	0.0	0.0	0.0	0.0	42132.2

TABLE F-3.3.4(9) DISBURSEMENT SCHEDULE (TAN CHI AREA) Foreign Pump & Material - Alternative-2

(UNIT;1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2011.8	179.1	11965.8	1611.7									15768.4
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
KT Tan Chi							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	148.6	139.1	0.0	0.0	0.0	0.0	0.0	0.0	355.7
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					176.2	517.0									693.2
Overhead			11.7	75.3	17.6	51.7									156.3
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	801.1	125.9	400.5	125.9	400.5	125.9		125.9		0.0		0.0		0.0	2105.7
d. Project Administration	78.4	125.9	39.2	125.9	39.2	125.9		125.9		0.0		0.0		0.0	660.4
3. Physical Contingency	88.0	25.2	383.0	169.4	1302.8	275.2	163.5	178.1	0.0	0.0	0.0	0.0	0.0	0.0	2585.2
4. Price Escalation	27.9	13.8	286.0	191.0	1554.5	477.2	270.8	422.3	0.0	0.0	0.0	0.0	0.0	0.0	3243.6
Total	995.3	290.8	4498.8	2054.9	15885.2	3504.5	2069.0	2381.9	0.0	0.0	0.0	0.0	0.0	0.0	31680.3
INUNDATED AREA (ha)		1937		1937		1604		1270		936		936		936	936

TABLE F-3.3.4(10) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Foreign Pump & Material - Alternative-2

(UNIT:1000USD)

Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			2634.5	243.4	16335.6	2190.4									21403.9
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
Conten Creek							74.8	85.0							159.8
Other canals							190.8	215.8							406.6
KT Han Quang							85.6	83.2							168.8
Overhead	0.0	0.0	0.0	0.0	39.0	29.1	175.2	169.1	0.0	0.0	0.0	0.0	0.0	0.0	412.4
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					178.0	522.2									700.2
Overhead			11.7	75.3	17.8	52.2									157.0
d. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	1122.0	195.4	561.0	195.4	561.0	195.4		195.4		0.0		0.0		0.0	3025.6
d. Project Administration	110.2	195.4	55.1	195.4	55.1	195.4		195.4		0.0		0.0		0.0	1002.0
3. Physical Contingency	123.2	39.1	462.9	190.0	1877.6	527.6	192.7	225.1	0.0	0.0	0.0	0.0	0.0	0.0	3638.1
4. Price Escalation	39.0	21.5	345.7	214.2	2240.4	914.7	319.2	533.7	0.0	0.0	0.0	0.0	0.0	0.0	4628.4
Total	1394.5	451.4	5437.4	2303.9	22894.1	6717.8	2438.8	3010.2	0.0	0.0	0.0	0.0	0.0	0.0	44647.9
INUNDATED AREA (ha)		2710		2710		2272		1834		1395		1395		1395	1395

TABLE F-3.3.4(11) DISBURSEMENT SCHEDULE (TAN CHI AREA) Foreign Pump & Material - Alternative-3

(UNIT:1000USD)

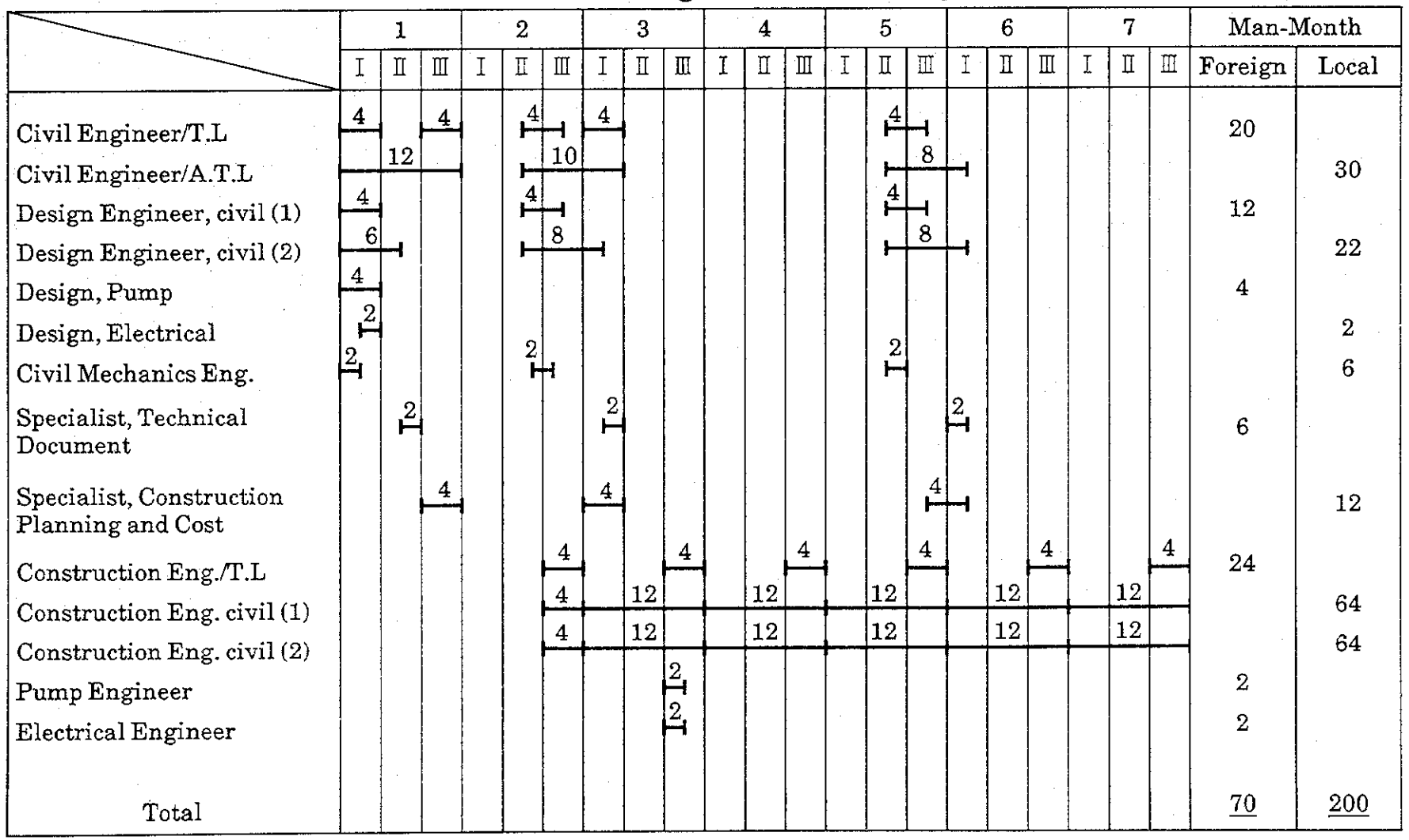
Year / Item	1995		1996		1997		1998		1199		2000		2001		Total
	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			7330.0	895.4	6647.7	895.4									15768.5
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
KT Tan Chi							85.6	83.2							168.8
Overhead			0.0	0.0	39.0	29.1	148.6	139.1	0.0	0.0	0.0	0.0	0.0	0.0	355.7
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					176.2	517.0									693.2
Overhead			11.7	75.3	17.6	51.7	0.0	0.0							156.3
d. Pond Construction							234.0	28.3							262.3
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	60.0											60.0
c. Consulting Service	812.8	126.6	406.4	126.6	406.4	126.6		126.6		0.0		0.0		0.0	2132.0
d. Project Administration	79.6	126.6	39.8	126.6	39.8	126.6		126.6		0.0		0.0		0.0	665.6
3. Physical Contingency	89.2	25.3	915.4	241.2	771.6	203.7	186.9	181.1	0.0	0.0	0.0	0.0	0.0	0.0	2614.6
4. Price Escalation	28.3	13.9	683.7	272.0	920.7	353.2	309.6	429.3	0.0	0.0	0.0	0.0	0.0	0.0	3010.7
Total	1009.9	292.4	10753.6	2925.3	9408.6	2594.1	2365.1	2421.6	0.0	0.0	0.0	0.0	0.0	0.0	31770.8
INUNDATED AREA (ha)		1937		1937		1604		1270		936		936		936	936

TABLE F-3.3.4(12) DISBURSEMENT SCHEDULE (TAN CHI + HANQUANG AREA) Foreign Pump & Material - Alternative-3

(UNIT:1000USD)

Year	1995		1996		1997		1998		1199		2000		2001		Total
Item	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	F.C	L.C	
1. Construction Cost															
a. Pump Station			9894.8	1216.9	9075.3	1216.9									21403.9
b. Drainage Canal															0.0
Tao Khe Creek					389.6	290.8	389.6	290.8							1360.8
KT Trinh Xa							215.6	266.1							481.7
KT 6 Xa							259.8	226.3							486.1
KT Phat Thich							135.5	115.9							251.4
KT 4 Xa							114.0	100.7							214.7
KT Kau Nau							95.2	91.8							187.0
KT Kau Nau-1							97.2	109.5							206.7
KT Kau Nau-2							93.6	106.3							199.9
Conten Creek							74.8	85.0							159.8
Other canals							190.8	215.8							406.6
KT Han Quang							85.6	83.2							168.8
Overhead			0.0	0.0	39.0	29.1	175.2	169.1	0.0	0.0	0.0	0.0	0.0	0.0	412.4
c. Irrigation Canal															
South Irrigation Canal			76.1	589.8											665.9
N 6 Irrigation Canal			40.5	163.4											203.9
Others					178.0	522.2									700.2
Overhead	0.0	0.0	11.7	75.3	17.8	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	157.0
d. Pond Construction							234.0	238.2							472.2
e. Transmission Line					1200.0	1800.0									3000.0
2. Association Cost															
a. Construction Machines			1250.0	375.0											1625.0
b. Land Aquisition			0.0	62.0											62.0
c. Consulting Service	1133.7	201.3	566.8	201.3	566.8	201.3		201.3		0.0		0.0		0.0	3072.5
d. Project Administration	111.3	201.3	55.7	201.3	55.7	201.3		201.3		0.0		0.0		0.0	1027.9
3. Physical Contingency	124.5	40.3	1189.6	288.5	1152.2	431.4	216.1	250.1	0.0	0.0	0.0	0.0	0.0	0.0	3692.6
4. Price Escalation	39.4	22.1	888.4	325.3	1374.8	748.0	358.0	593.0	0.0	0.0	0.0	0.0	0.0	0.0	4349.0
Total	1408.9	465.0	13973.5	3498.8	14049.2	5493.1	2734.9	3344.4	0.0	0.0	0.0	0.0	0.0	0.0	44968.0
INUNDATED AREA (ha)		2710		2710		2272		1834		1395		1395		1395	1395

Figure F-3.4 Consulting Services Manning Schedule



F.4 OPERATION AND MAINTENANCE

TABLE F-4.2.1 LIST OF ESTIMATED OPERATION & MAINTENANCE COST

UNIT:USD

Item \ Alternative	First Alternative		Second Alternative	
	Tan Chi	Han Quang	Tan Chi	Han Quang
1.Salary & Insulance	10500	18600	10500	18600
2.Electric Charges	76500	113100	95200	131800
3.Repair Cost: Structures	4756	6256	9511	12511
Elect. & Mech.	32474	35054	32474	35054
4.Other Cost	27041	35572	54076	71138
5.Total Cost	151271	208582	201761	269103

TABLE F-4.2.2 EXISTING ANUAL OPERATION & MAINTENANCE COST RECORD

(Tan Chi Drainage Pumping Station)

UNIT:1000Dong

Year	Salary & Insulance	Electic Charges	Repair Cost		Other Costs	Total O & M Cost
			Struct.	Elec. & Mech.		
1989	8737	113893	0	50409	11561	184600
1990	11280	119229	0	103206	9025	242740
1991	13105	217246	0	134063	15137	379551
1992	23877	473141	11813	20297	29041	558169
1993	66799	401428	120521	109267	123557	821572
1994	70139	466634	126547	114730	129735	907785

TABLE F-4.2.3 EXISTING ANUAL OPERATION & MAINTENANCE COST RECORD

(Noi Due Irrigation Pumping Station)

UNIT:1000Dong

Year	Salary & Insulance	Electic Charges	Repair Cost		Other Costs	Total O & M Cost
			Struct.	Elec. & Mech.		
1989	1161	10875	6024	10337	3792	32189
1990	1853	9528	0	4807	4089	20277
1991	2138	18988	0	32185	15290	68601
1992	4901	47575	0	3207	6247	61930
1993	14711	41753	95151	135186	25753	312554
1994	15447	43661	99909	141945	27041	328003

TABLE F-4.2.4 ESTIMATED ANUAL ELECTRIC CONSUMPTION

Year	Electric Charge (1000Dong)		Electric Unit Charge (Dong/KWH)	Electric Consumption (KWH)		Remark
	Tan Chi	Noi Due		Tan Chi	Noi Due	
1989	113893	10875	90	1265478	120833	Record
1990	119229	9528	100	1192290	95280	Record
1991	217246	18988	205	1059737	92624	Record
1992	473141	47575	358	1321623	132891	Record
1993	401428	41753	376	1067628	111045	Record
1994	466634	43661	395	1181351	110535	Estimated

TABLE F-4.2.5 ESTIMATION FOR THE OPERATION HOURS OF EXISTING PUMPING ST.

	Drainage (Tan Chi)	Irrigation (Noi Due)	Remark
Anual electric consumption KWH	1181351	110535	
Out-put power per 1 unit	30	30	
Operated pump unit per station	60	2	
Estimated operation hours a year	656	1842	Existing
Estimated operation days a year	27	77	
Existing drng/irrgtn ratio (1/ha)	3.27	1	
Proposed drng/irrgtn ratio (1/ha)	4.85	1.3	
Operation hours for proposed system	962	100	Proposed

TABLE F-4.2.6 CALCULATION OF OPERATION & MAINTENANCE COST

Average monthly salary:50 USD

1.Staff of Pumping Station	Existing	Tan Chi Area		Han Quang	
		New station	Total	Han Quang	Total
Chief	1	0	1	1	2
Admistrator	1	0	1	1	2
O&M Engineer	0	1	1	1	1
Mechanician	2	1	3	2	4
Electrician	2	1	3	2	4
Workers	4	2	6	8	12
Drivers(Heavy)	1	0	1	2	3
Drivers(Vehicle)	1	0.5	1.5	2	3
Total (Persons)	12	5.5	17.5	19	31
2.Anual Salary & Insulance (USD)	7200	3300	10500	11400	18600

2.Electric Charges	Existing Tan Chi	Proposed Tan Chi	Proposed Han Quang
for drainage			
Operation hours (hr)	656	962	962
Out-put power (KWH/unit)	30	550	550
NOS of pump (pcs)	60	4	6
Total Out-put (KWH)	1180800	2116400	3174600
Electric Charges(USD-KWH)	0.0359	0.0359	0.0359
Electric Charge (USD)	42391	76500	113100
for irrigation			
Operation hours (hr)	1842	2400	2400
Out-put power (KWH/unit)	30	30	30
NOS of pump (pcs)	2	2	2
Total Out-put (KWH)	110520	144000	144000
Electric Charges(USD-KWH)	0.0359	0.0359	0.0359
Electric Charge (USD)	3968	18700	18700
Total (Alternative 2) (USD)	46359	95200	131800

3.Repair Cost (Viet Nam Mateirals)	Existing	Tan Chi Area		Han Quang Area	
		New Tan Chi	Total	Han Quang	Total
Civil work Maintenance Cost	9086	9511	9511		12511
Drainage Area(ha)	6420	6720	6720	2120	8840
Cropping Area(ha)	6420	6720	6720	2120	8840
Allocated cost					
Drainage	4543		4756		6256
Irrigation	4543		4756		6255
Mechanical & Eletric					
Maintenance Cost	12909	19565	32474	22145	35054
Repair Cost for Alternative 1		26285	39194		43894
Repair Cost for Alternative 2		29076	41985		47565

*Repair cost for mechanical equipment are estimated as;
(procurement cost)/(life time 30 years)×(30%)

*Other costs are estimated as;
(procurement cost of O&M equipment)/(life time 15 years)×(10%)

APPENDIX G

RURAL SOCIOLOGY AND ORGANIZATION

APPENDIX G

RURAL SOCIOLOGY AND ORGANIZATION

CONTENTS

G-1 Administration and Formation of Villages

1) Administrative Division

The Study Area consist of south westerly 3 districts(huyen) and 1 city(thi xa) of Ha Bac province and a part of 2 eastern districts of Ha Noi capital(thanh pho) as detailed below:

	Tinh Ha Bac	Thanh Pho Ha Noi
Total No. of huyen	14	11
Total No. of thanh xa	2	2(including capital area)
STUDY AREA:		
No. of xa by huyen	Que Vo 23/23*	Dong Anh a part of 3/24
	Yen Phong 4/18	Gia Lam 7/35
	Tien Son 27/27	
No. of xa by thi xa	Bac Ninh 5/ 5	

*No. of xa in Study Area / Total No. of xa in huyen

The administrative boundary is shown as FIG. G.1-1.

2) Formation of Villages and their Distribution

The total No. of villages in the Study Area is 354, and their breakdown by huyen is as below:

Name of Huyen	No. of Village	Name of Huyen	No. of Village
Que Vo	126	Dong Anh	13
Bac Ninh	22	Gia Lam	28
Yen Phong	20	Total in Ha Noi area	41
Tien Son	145		
Total in Ha Bac area	313	Total in Study Area	354

Data Source: Hearing from district P.C.

3) Land Holding System

The result of village survey of 3,653 villages in the northern Vietnam by the central committee of Land Reform in 1953 was as shown below:

Social Classes	Landownership (ha)	Percentage of Total Area	Area per capita (sq.m.)
French Plantations	15,952.05	1.0	
Catholic Church	23,928.07	1.5	
Landlords	390,825.22	24.5	10,093
Communal and Semi-communal Land	398,801.25	25.0	
Rich Peasants	113,259.55	7.1	6,393
Middle Peasants	462,609.45	29.0	1,372
Poor Peasants	159,520.50	10.0	431
Very Poor Peasants	17,547.25	1.1	124
Other Laboring People	12,761.64	0.8	
Total	1,595,204.98	100.0	

Data Source: The traditional village in Vietnam -published by GIOI, Ha Noi, 1993

As shown in the above table, the sizes of land holding were not so large, and some 1.0ha per capita even in case of landlord. There is a survey record of land holding per household in 68 villages of ex-Ha Bac province (south westerly area of Ha Bac province and almostly same as the Study Area) at the French colonial period. The landowner having more than 7.2ha/household was, as shown in table below, 13.9 percent.

Size of Landholding	No. of Household	Percentage
Less than 1.8ha	158	15.6%
1.8- 3.6ha	391	38.5
3.6- 7.2ha	325	32.0
7.2-18.0ha	100	9.9
Over 18.0ha	41	4.0
Total	1,015	100.0%

Data Source: The traditional village in Vietnam

G-2 Population Distribution and its Characteristics

1) Population Distribution

The total population in the Study Area in 1990 was reported as 472,952, and its breakdown by huyen was as below:

Name of Huyen	Population	Name of Huyen	Population
Que Vo	126,129	Dong Anh	13,884
Bac Ninh	64,150	Gia Lam	53,839
Yen Phong	19,570	Total in Ha Noi area	67,723
Tien Son	95,380		
Total in Ha Bac area	405,229	Total in Study Area	472,952

Data Source: Demographic statistics of the Red river basin

The population distribution by xa and the sub-areas of drainage system are shown as TABLE G.2-1.

The ethnical distribution in 6 related huyen of the Study Area were reported as TABLE G.2-2 in the 1989 census.

2) Population Structure by Age Group, Sex and Marital Status

The population structure by age group in whole country of Vietnam in 1989 census shows almostly complete shape of piramid, while huyen of Dong Anh, Gia Lam and Bac Ninh where the urbanization rates are comparatively high show a trend of decrease of population less than 4 years old proving the effect of family planning campaign. The population of huyen by age group are shown as TABLE G.2-3.

The population structure by sex are rather special in the country. In the age group of less than 14 years old, male population is more than that of female regardless whole country nor huyen basis, however the ratio of female population is more than male in the age group over 15 years old. Consequently, the male:female ratio of population is about 48:52 in total. As shown in TABLE G.2-4, only 4 xa show higher or equal ratio of male, and the female ratio shares majority in the remained 65 xa. The lowest ratio of male population is 44.8% in Xa Hien Van of Tien Son district.

As shown in TABLE G.2-5, the ratio of widow is increasing very obviously after 30 years old as a nation-wise trend when the population structure by marital status is checked with the population by sex. Especially, the ratio of widow is more than 10% after 40 years old, and it is hardly possible to accept as a difference of average life of male and female. Therefore some influence of casualty in 30 years of war time, anti-French war in 1946-54 and North-South conflict in 1955-73, up to the re-union of North and South might be considered as a reason of such high ratio of widow.

Similar trend is also seen in the Study Area, and it is assumed as the reason of higher ratio of female population.

3) Present Ratio of Urbanization

The urban/rural population ratio by districts in the Study Area are shown as the table below:

Name of Huyen	Total Population	Urban Area Population	Rural Area Population	Population Ratio of Urban/ Rural
Que Vo	126,129	-	126,129	0:100.0
Bac Ninh	64,150	33,849	30,301	52.8: 47.2
Yen Phong	114,675	-	114,675	0:100.0
Tien Son	201,026	2,540	198,486	1.3: 98.3
Dong Anh	213,092	19,087	194,005	9.0: 91.0
Gia Lam	260,668	51,483	209,185	19.8: 80.2
Total	979,740	106,959	872,781	10.9: 89.1

Data Source: Demograplhic statistics of Red river basin

Although the ratio of total urban population of 6 districts related to the Study Area is shown as 10.9% in the above table the urban areas in Dong Anh and Gia Lam districts are not included in the Study Area, therefore the ratio of urban population is assumed as about 7.7% in the Study Area.

4) Size of Household

The mean size of household by xa in the Study Area were 3.93 -5.35 persons in 1990, and the average of whole area was 4.55 as shown in TABLE G.2-4.

On the other hand, about 36% of population of whole country are belonging to the household size of 4-5 persons from the view-point of the population distribution by the household size,while that of province basis both in Ha Bac and Ha Noi are more than 40%. In case of district basis, most of districts shares more than 40% except Yen Phong, 38.4%, and Bac Ninh, 39.7%.

5) Present Employment by Sectors

The present employment by sectors of population over 13 years old are 73.7% in agriculture, 10.5% in manufacturing, 5.7% in trading, 2.5% in education and 1.0% in administration in whole country basis,while the proportion of employment by sectors in the Study Area are as shown in the table below:

Name of Huyen	Manufactur -ing	Agricul -ture	Trading	Education	Administ -ration
Que Vo	1.9%	93.6%	1.0%	1.8%	0.3%
Bac Ninh	29.1	36.9	12.2	4.6	1.1
Yen Phong	1.7	94.0	1.1	1.6	0.4
Tien Son	6.3	86.4	1.9	2.3	0.3
Dong Anh	11.4	76.0	3.6	2.1	0.6
Gia Lam	22.4	52.0	7.1	3.4	1.0

Data Source: Census Report in 1989

As clearly shown in the above table, the proportion of employed population in agriculture sector is overwhelmingly high except in those districts where the ratio of urban population is comparatively high such as Bac Ninh and Gia Lam. Although no data is available about the employment by sectors in the Study Area, it is assumed with aged group population and proportion shown in the above table as below:

Name of Huyen	Total Population over 13 years old	Ratio in Total Popul. (1)	Working Population over 13 years old	Aged Population Ratio (2)	Total Population in Study Area(3)	Study Area: Working Population	Study Area: Agriculture Population
Que Vo	78,459	62.21%	60,073	76.57%	126,129	60,080	56,235
Bac Ninh	43,967	68.54	28,549	64.93	64,150	28,549	10,534
Yen Phong	72,218	62.98	56,648	78.44	19,570	9,668	9,088
Tien Son	131,005	65.17	100,100	76.41	195,380	97,292	84,060
Total in Ha Bac area:						195,589	159,917
Dong Anh	142,242	66.75	104,585	73.53	13,884	6,814	5,179
Gia Lam	183,494	70.39	118,502	64.58	53,839	24,474	12,727
Total in Ha Noi area:						31,288	17,906
Total in the Study Area:						226,877	177,823

Note: Working Population in Study Area = (3)x(1)x(2)

81.8% of the working population in Ha Bac area of the Study Area are involving in agriculture, while that of Ha Noi area is 57.2%. However, the Ha Noi area in the Study Area is mostly rural area, therefore the ratio of agriculture population in whole Study Area is assumed as more than 80%.

G-3 Farmer's Organization

The relation of villages and farmer's cooperatives in 4 related districts of the Study Area is as shown below:

Name of Huyen	No. of Village	No. of Coop.	Villages/Coop.
Que Vo	126	93	1.35
Bac Ninh	22	11	2.00
Yen Phong	86	86	1.00
Tien Son	145	62	2.34

Data Source: Hearing from P.C. of district

In case of Dong Anh and Gia Lam, each commune or xa has one farmer's cooperative.

G-4 Social Infrastructure in Rural Area

In relation with para. 3.5.3-4 Educational and Cultural Facilities, followings are added:

The ratio of number of pupil/student per the age group population and number of pupil per a teacher by districts are as shown below:

	Primary/Secondary school		High School	
Name of Huyen	No. of pupil/ Aged population	No. of pupil/a teacher	No. of student/ Aged population	No. of student/ a teacher
Que Vo	74.0%	24.3:1	19.1%	18.8:1
Bac Ninh	83.5	24.7:1	31.2	8.2:1
Yen Phong	70.3	25.0:1	19.0	18.9:1
Tien Son	76.3	24.8:1	20.9	16.8:1

Data Source: Socio-economic report of Ha Bac province.

The graduation ratioes of primary and secondary schools are reported as more than 90% in Ha Bac province, therefore the diffusion rate of primary education in the Study Area is considerably high.

The details of ratio of schooling experience by age group and by sex are shown as TABLE G.4-1.

G-5 Outlook of Villages in the Project Area

The outlook of Project Area are explained as below based on the hearing survey of 100 households of farmers in 15 villages, including some surrounded villages, in this area.

1) Demographic structure

The average age of marriage of 100 male and 113 female in the survey were 22.8 and 21.2 years old, respectively. The ratio of marriage before 20 years old was 32.0% in case of male, but that of female was as much as 54.9%. The average age of marriage by generation were as shown below:

	Male		Female	
year of marriage	No.	average age of marriage	No.	average age of marriage
1930s	0	-	5	17.4
40s	1	17.0	4	21.0
50s	15	21.9	18	19.8
60s	12	23.3	12	20.5
70s	34	22.8	35	20.5
80s	29	23.5	31	21.5
90s	9	22.0	8	18.8
total/average	100	22.8	113	21.2

As the difference of age between male and female at the time of marriage, the case that male age was 1-3 years older than female shared as much as 48.4%, then the case of 4-6 years older was 21.0%. Same age marriage was 15.8%, but 7.4% was the case that the age of female was 1-2 years older than male. In case that the difference of age of husband/wife are more than 7 years, 5.3% cases showed that male age was older, and female age was older in 2.1%. Such trend is regardless to the generation, and marriage of near ages is considered as traditional.

The year of experience of schooling is shown as table below, and there is not so much difference between male and female in case of 1-9 classes, but male ratio of schooling experience become higher than female after 10th class. Such trend is very obviously appeared after the year of birth of 1950s proving the diffusion of primary/secondary education in the area.

year of school attendance	year of birth -1940 M	F	41-50 M	F	51-60 M	F	61-70 M	F	71-80 M	F	81- M	F	total M	F
0	2	10	0	0	1	1	0	0	0	0	-	-	3	11
1- 3	15	29	0	4	2	1	2	0	2	0	25	17	46	51
4- 6	10	10	5	5	3	12	5	9	12	7	26	21	61	64
7- 9	9	2	16	8	23	24	22	36	34	35	6	6	110	111
10-12	0	0	4	2	16	2	13	7	16	12	-	-	49	23
13-	4	0	1	0	2	0	0	0	0	0	-	-	7	0
total	40	51	26	19	47	40	42	52	64	54	57	44	276	260

2) Family composition

The total number of household in 15 villages surveyed was 4,131, of which 11.7% were 1-2 persons/household, 44.2% were 3-4, and 34.1% were 5-6. Therefore the average size of a household was 4.38 persons which is almostly same as the average size of 4.42 persons of commune basis in 1990.

The relation of head of family and members of family living in same house were as shown below:

type of family	head of family male	female	total
2 generation	64	9	73
3 generation	23	3	26
4 generation	1	0	1
total	88	12	100

63 households or 86.3% of 2 generation families were composi -tion of husband/wife and their children, and 12 households of 3 generation families were husband/wife and children with parent of husband. The head of family of 14 households of whole surveyed families were single, and 11 cases of which were female head of family.

3) Employment

96.1% of total households or 96.7% of total population were belonging to the farmer's household, and 96.7% of male and 85.7% of female population were composing the farmer's household, however the actual farming population was abount 57.0% of total population; 55.8% of male and 58.1% of female. The population composition from the viewpoint of economic activities were as shown below:

	male	female	total
economically active	58.6%	59.1%	58.9%
farming	91.5%	94.9%	93.3%
non-farming labor	5.3	1.9	3.5
handcraft/trading	1.6	1.2	1.4
public services	1.6	2.1	1.9
economically inactive	41.4%	40.9%	41.1%
children less 6 years	32.7%	32.9%	32.8%
pupil/student	53.8	48.1	50.8
house keeping	4.7	7.8	6.3
old/unable to work	8.9	11.2	10.1
total	100.0%	100.0%	100.0%

As shown above, the ratio of economically active population of male and female are not different so much, and 93.3% of e.a.p. are involving in farming works. A part of pupil/student which shares a half of economically inactive population are also help -ing the farming works in the busy season, therefore it is very obviously that the regional economy is depending to agriculture in considerable extent.

4) Land holding system

The land holding size of 3 types of farmers, viz., farmers who have not livestock having drafting animals and having cattle and pig, are as shown below:

type of farmer	ratio of household	farmland in sao				
		0- 5	5-10	10-20	20-	total
without livestock	46.4%	56.7%	39.6%	3.7%	0.0%	100.0%
with draft animal	2.4	10.6	89.4	0.0	0.0	100.0
with cattle/pig	51.2	24.8	59.0	15.3	0.9	100.0
total	100.0%	39.3	50.7	9.5	0.5	100.0%

As shown above, 39.3% of farmers have less than 5 sao(1,800 sq.m) of land, especially in the case of farmers who have not livestocks, 56.7% have less than 5 sao. On the other hand, in the case of farmers who have drafting animal, nearly 90% of them are holding 5-10 sao of land, and about 60 % of the farmers who have cattle/pig are holding same size of land.

The average farming land of paddy field per a household is 6.43 sao (2,315 sq.m), and 2.56 sao (920 sq.m) per a farmer. However, 33% of farming households are holding 2.6-5.0 sao, 26% have 5.1-7.5 sao and 21% have 7.6-10 sao, therefore 60% of farmers have 1-3 sao per a farmer.

27% of farming family are cultivating upland crops and 16% are cultivating perenial crops such as fruit tree, but the cropping area per a household are only 1.38 sao of upland crops and 0.6 sao of perenial crops.

The average number of plot of farmland are 8 plots in case of paddy field, 2.8 plots of upland crops and 1 plot of perenial crops, while the area per a plot are 0.8 sao, 0.5 sao and 0.6 sao, respectively.

5) Outlook of farmer's organization

In case of the Project Area, most of farmer's cooperatives have been established in 1959-60, and the issue of consolidation of cooperative as one cooperative per a commune encouraged in 1976-82 was not implemented. 61.3% of population of farming family; 58.7% of male and 71.7% of female, are member of farmer's cooperative. Average number of member of a cooperative is 720, which is about 59.3% of average population of a village, and it is almostly equal to the ratio of farmer in total population of 57.0%.

The amount of capital holding are considerably different by each of the cooperatives, and such difference is mainly appeared due to different investment of the cooperatives such as improvement of infrastructure. Some cooperatives have considerable amount of debt due to the large amount of expenditure required for prevention of water logging.

The oldmen's association and women's association have been organized almostly in whole villages, and they are forming main line of farmer's organization together with the farmer's association. The ratio of time of establishment of main farmer's organization in the Project Area are as shown below:

	years of establishment						
	1940s	51-55	56-60	61-70	71-80	81-90	91-
farmer's cooperative			86.7%	6.7%		6.7%	
farmer's association	15.4%				15.4%	30.8	38.5%
oldmen's association			20.0	13.3	20.0	46.7	
women's association	28.6	35.7%	28.6			7.1	
veteran's association						6.7	93.3

As shown above, most of farmer's cooperative have been established in the later half of 1950s following to the implementation of land reform, and aiming to manage the farmland in accordance with the land reform law. The farmer's association was existing even before the revolution in 1945, but the activities were intermitted after the revolution. The farmer's association have been re-organized from the later half of 1970s, and most of villages have such association nowaday. Many of farmers are not recognizing the farmer's cooperative as their own organization, and such cognition of farmer is considered as motive of re-organization of the farmer's association.

The oldmen's association was also existed before the revolution, but formally established after the later half of 1950s. In case of the women's association, it was formally organized immediately after the revolution, and most of villages have been covered with the women's association up to the end of 1950s. This action might be regarded with the basic policy of socialism which encourage the participation of women in the social works. In fact, the role of women in the social affairs in the rural area might be highly evaluated.

The retired army officers and soldiers are forming their own solidarity organization of veteran's association since the end of 1980s, and expanding their influence to the rural communmity.The number of member of veteran's association is not so much, but its impact to the rural community will not be negligible because their country-wide networks.

6) Religion and festivals

From the viewpoint of religion, the rural inhabitants are still depending on their tradition of Confucianism in daily life. Although the religious activities are not so active,many of rural inhabitants, especially elder people,are follower of Buddhism or Catholicism.

Contrarily, the tradition of ancestor worship is deeply rooted in the rural life, and providing the meeting opportunity of community member as different kinds of festivals. It is notable that many of such festivals are held as commune basis, therefore many troubles between the villages such as trouble of water distribution, damage to farmland due to invasion of cattle or buffalo of neighbouring village, conflict of schooling children of different villages, etc. are arbitrated or solved in such occassion of festivals.