

Table L-19 Annual Incremental Economic Benefit Flow, Feasibility Study

I. USP Area

Year in Order	Year	Area under Irrigation (ha)	Build-Up Ratio (%)	Benefit Build-Up (Riel Million)		
				Year 2005 Area	Year 2006 Area	Total
1	2002		50			0
2	2003		75			0
3	2004		85			0
4	2005	576	95	568.5		568.5
5	2006	2,924	100	852.7	2,885.8	3,738.5
6	2007			966.4	4,328.8	5,295.2
7	2008			1,080.1	4,905.9	5,986.0
8	2009			1,137.0	5,483.1	6,620.1
9	2010			1,137.0	5,771.5	6,908.5
10	2011			1,137.0	5,771.5	6,908.5
11	2012			1,137.0	5,771.5	6,908.5
12	2013			1,137.0	5,771.5	6,908.5

Note : Incremental net production value (Rp.'000/ha) 1,973.9

II. SRP Areas

Year in Order	Year	Area under Irrigation (ha)		Build-Up Ratio (%)	Benefit Build-Up (Riel '000)	
		Kim Sei Area	Ang 160 Area		Kim Sei Area	Ang 160 Area
1	2002			40		
2	2003		25	65		12,720
3	2004	27		80	12,960	20,670
4	2005			90	21,060	25,440
5	2006			100	25,920	28,620
6	2007				29,160	31,800
7	2008				32,400	31,800
8	2009				32,400	31,800
9	2010				32,400	31,800
10	2011				32,400	31,800

Note : Incremental net production value (Rp.'000/ha)
Kim Sei; 1,200.0 Ang 160 ; 1,272.0

III. PDP Area

Year in Order	Year	Area under Irrigation (ha)	Build-Up Ratio (%)	Benefit Build-Up (Riel '000)				
				Year 2003 Area	Year 2004 Area	Year 2005 Area	Year 2006 Area	Year 2007 Area
1	2002		50					
2	2003	0.19	80	220				
3	2004	0.39	100	360	460			
4	2005	0.58		450	730	680		
5	2006	0.58		450	920	1,090	680	
6	2007	0.58		450	920	1,370	1,090	680
7	2008	1.16		450	920	1,370	1,370	1,090
8	2009	0.58		450	920	1,370	1,370	1,370
9	2010	0.58		450	920	1,370	1,370	1,370
10	2011	0.58		450	920	1,370	1,370	1,370
11	2012	0.60		450	920	1,370	1,370	1,370
12	2013			450	920	1,370	1,370	1,370
13	2014			450	920	1,370	1,370	1,370
14	2015			450	920	1,370	1,370	1,370
15	2016			450	920	1,370	1,370	1,370

Year in Order	Year	Benefit Build-Up (Riel '000)					
		Year 2008 Area	Year 2009 Area	Year 2010 Area	Year 2011 Area	Year 2012 Area	Total
1	2002						0
2	2003						220
3	2004						820
4	2005						1,860
5	2006						3,140
6	2007						4,510
7	2008	1,370					6,570
8	2009	2,180	680				8,340
9	2010	2,730	1,090	680			9,980
10	2011	2,730	1,370	1,090	680		11,350
11	2012	2,730	1,370	1,370	1,090	710	12,750
12	2013	2,730	1,370	1,370	1,370	1,130	13,450
13	2014	2,730	1,370	1,370	1,370	1,380	13,700
14	2015	2,730	1,370	1,370	1,370	1,380	13,700
15	2016	2,730	1,370	1,370	1,370	1,380	13,700

Note : Incremental net production value (Rp.'000/ha) 2,353.9

Table L-20 Negative Project Benefit, Feasibility Study
(Production Foregone)

Item	NPV Without P. Condition (Riel 000/ha)	Farm Land (ha)	Foregone Amount
1. USP Area			(Riel Million)
Construction of canals	<u>876.8</u>	60.0	52.6
2. SRP Area			(Riel '000)
Kim Sei	<u>859.3</u>	0.2	180
Ang 160	<u>1084.0</u>	0.1	90
3. PDP Site (For 5.82 ha of irrigation development)			(Riel '000)
PDP Area	<u>876.3</u>	0.42	370

Table L-21 Economic Investment Cost, Feasibility Study (1/2)

I. USP Area

(Unit : Riel Million)

Description	Financial Cost			Conversion Factors	Economic Cost									
	F/C	L/C	Total		Total	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Preparatory Works	2,484.9	846.3	3,331.2	0.77	2,567.2		2,567.2							
2. Direct Construction Cost														
1) Tumnap Lok Reservoir	5,000.8	2,216.2	7,217.0	0.77	5,525.0		552.5	1,657.5	3,315.0					
2) Diversion Canal	5,401.4	2,120.6	7,522.0	0.76	5,685.5		1,137.1	4,548.4						
3) Kpob Trobek Reservoir	4,976.3	2,196.6	7,172.9	0.76	5,481.7		548.1	1,644.5	3,289.1					
4) Main Canal	2,203.0	1,002.3	3,205.3	0.77	2,484.1		496.8	1,987.3						
5) Secondary Canal	11,300.8	5,789.6	17,090.4	0.78	13,275.7		1,327.6	3,982.6	7,965.5					
6) Tertiary Development	1,452.0	687.1	2,139.1	0.73	1,566.2			626.5	939.7					
7) Building Works	299.2	225.6	524.8	0.80	418.7	418.7								
3. O&M Equipment	156.7	10.3	167.0	0.82	137.5	133.3	0	1.8	2.4					
4. Institutional Development	666.9	1,760.8	2,427.7	0.82	2,002.2	534.8	143.3	143.3	303.3	506.9	370.6			
5. Relocation Cost /1	3.3	104.5	107.8	0.78	84.3	67.4	16.9							
6. Administration Cost	155.7	824.3	980.0	0.84	827.3	146.5	146.5	159.2	175.0	71.3	45.4	45.4	38.0	
7. Consulting Services	11,921.7	623.5	12,545.2	0.96	12,093.3	3,159.2	1,623.4	1,937.2	1,949.0	3,373.6	50.9			
Total (1 to 7)	46,022.7	18,407.7	64,430.4	0.78	50,163.8	4,041.2	8,559.4	16,061.8	16,999.3	3,951.8	466.9	45.4	38.0	
8. Physical Contingenc (10% of 1 to 7)	4,602.3	1,840.7	6,443.0		5,016.4	404.1	855.9	1,606.2	1,699.9	395.2	46.7	4.5	3.9	
Grand Total	50,625.0	20,248.4	70,873.4		55,180.2	4,445.3	9,415.3	17,668.0	18,699.2	4,347.0	513.6	49.9	41.9	

Note : Excluded the land compensation cost for the economic evaluation

II. SRP Area**(1) Kim Sei SRP**

(Unit : Riel '000)

Description	Financial Cost			Conversion Factors	Economic Cost									
	F/C	L/C	Total		Total	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Preparatory Works	1,560	451	2,011	0.75	1,510		1,510							
2. Direct Construction Cost	128,775	60,522	189,297	0.77	145,080		145,080							
3. Insitutional Development Cost	599	2,923	3,522	0.81	2,840		1,130	920	400	390				
4. Administration Cost	672	2,385	3,057	0.81	2,490		2,490							
5. Engineering Services	3,885	15,244	19,129	0.83	15,900		15,900							
Total (1 to 5)	135,491	81,525	217,016		167,820	0	166,110	920	400	390				
6. Physical Contingencies(10% of 1 to 5)	13,549	8,153	21,702		16,780	0	16,610	90	40	40				
Grand Total	149,040	89,678	238,718		184,600	0	182,720	1,010	440	430				

(2) Ang 160

(Unit : Riel '000)

Description	Financial Cost			Conversion Factors	Economic Cost									
	F/C	L/C	Total		Total	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Preparatory Works	43,613	12,698	56,311	0.76	42,530	42,530								
2. Direct Construction Cost	78,606	38,629	117,235	0.77	90,690	90,690								
3. Insitutional Development Cost	754	3,680	4,434	0.81	3,570	1,240	1,160	590	580					
4. Administration Cost	672	2,385	3,057	0.81	2,490	2,490								
5. Engineering Services	3,524	13,833	17,357	0.83	14,410	14,410								
Total (1 to 5)	127,169	71,225	198,394		153,690	151,360	1,160	590	580					
6. Physical Contingencies (10% of 1 to 5)	12,717	7,122	19,839		15,370	15,140	120	60	50					
Grand Total	139,886	78,347	218,233		169,060	166,500	1,280	650	630					

Table L-21 Economic Investment Cost, Feasibility Study (2/2)

III. PDP Area

(Unit : Riel '000)

Description	Financial Cost			Conversion Factors	Economic Cost										
	F/C	L/C	Total		Total	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Direct Construction Cost	78,618	48,102	126,720	0.70	88,790	3,550	7,100	7,100	8,880	8,880	17,760	8,880	8,880	8,880	8,880
2. Institutional Development Cost	337	1,645	1,982	0.80	1,590	140	530	260	660	0	0	0	0	0	0
3. Administration Cost	362	40	402	0.75	300	170	10	10	10	10	10	10	10	10	50
4. Engineering Services	2,575	10,104	12,679	0.83	10,520	430	840	840	1,050	1,050	2,100	1,050	1,050	1,050	1,060
Total (1 to 4)	81,892	59,891	141,783		101,200	4,290	8,480	8,210	10,600	9,940	19,870	9,940	9,940	9,940	9,990
5. Physical Conting (10% of 1 to 4)	8,189	5,989	14,178		10,120	430	850	820	1,060	990	1,990	990	990	990	1,010
Grand Total	90,081	65,880	155,961		111,320	4,720	9,330	9,030	11,660	10,930	21,860	10,930	10,930	10,930	11,000

IV. Rural Road Improvement Program

(Unit : Riel '000)

Description	Financial Cost			Conversion Factors	Economic Cost										
	F/C	L/C	Total		Total	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Preparatory Works	107,000	45,800	152,800	0.76	116,580		116,580								
2. Direct Construction Cost	1,863,545	1,210,706	3,074,251	0.77	2,382,190		1,310,200	1,071,990							
3. Administration Cost	7,535	26,715	34,250	0.81	27,810	11,120	8,340	8,350							
4. Engineering Services	65,514	257,199	322,713	0.83	268,120	160,870	53,620	53,630							
Total (1 to 4)	2,043,594	1,540,420	3,584,014		2,794,700	171,990	1,488,740	1,133,970	0	0	0	0	0	0	0
5. Physical Contingencies(10% of 1 to 4)	204,359	154,042	358,401		279,470	17,200	148,870	113,400	0	0	0	0	0	0	0
Grand Total	2,247,953	1,694,462	3,942,415		3,074,170	189,190	1,637,610	1,247,370	0	0	0	0	0	0	0

Table L-22 Economic Annual O&M Cost, Feasibility Study (1/4)

I. USP Area**(1) Economic Annual O&M Cost at Full Stage**

Item	Financial Cost (Riel Million)	Conversion Factor	Economic Cost (Riel Million)
1. Materials	57.7	0.84	48.5
2. Equipment	23.4	0.75	17.6
3. Labor	3.7	0.53	2.0
4. O&M Staff (FWUCs and Apex)	108.5	0.85	92.3
Total (3,500 ha)	193.34		160.4
Per ha (Riel)	<u>55,240</u>		<u>45,830</u>

(2) Annual Disbursement of Economic O&M Cost

Year in Order	Year	Area under Irrigation (ha)	Annual O&M Cost (Riel Million)
1	2002		
2	2003		
3	2004		
4	2005		
5	2006	3,500	<u>160.4</u>
6	2007	3,500	160.4
7	2008	3,500	160.4
8	2009	3,500	160.4
9	2010	3,500	160.4
10	2011	3,500	160.4
11	2012	3,500	160.4
12	2013	3,500	160.4
13	2014	3,500	160.4
14	2015	3,500	160.4
15	2016	3,500	160.4

Table L-22 Economic Annual O&M Cost. Feasibility Study (2/4)

II. SRP Areas**(1) Economic Annual O&M Cost at Full Stage**

Item	Financial Cost (Riel '000)	Conversion Factor	Economic Cost (Riel '000)
1. Kim Sei SRP			
1. Materials	20	0.83	20
2. Equipment	280	0.75	210
3. Labor	1,850	0.53	980
4. O&M Staff	1,440	0.85	1,220
Total (27 ha)	3,590		2,430
Per ha (Riel)	<u>132,960</u>		<u>90,000</u>
2. Ang 160 SRP			
1. Materials	20	0.83	20
2. Equipment	280	0.75	210
3. Labor	2,220	0.53	1,180
4. O&M Staff	1,440	0.85	1,220
Total (25 ha)	3,960		2,630
Per ha (Riel)	<u>158,400</u>		<u>105,200</u>

(2) Annual Disbursement of Economic O&M Cost

Kim Sei SRP			Ang 160 SRP		
Year	Area (ha)	O&M Cost (Riel'000)	Year	Area (ha)	O&M Cost (Riel'000)
2002			2002		
2003			2003	25	2,630
2004	27	2,430	2004	25	2,630
2005	27	2,430	2005	25	2,630
2006	27	2,430	2006	25	2,630
2007	27	2,430	2007	25	2,630
2008	27	2,430	2008	25	2,630
2009	27	2,430	2009	25	2,630
2010	27	2,430	2010	25	2,630
2011	27	2,430	2011	25	2,630
2012	27	2,430	2012	25	2,630
2013	27	2,430	2013	25	2,630
2014	27	2,430	2014	25	2,630
2015	27	2,430	2015	25	2,630
2016	27	2,430	2016	25	2,630

Table L-22 Economic Annual O&M Cost, Feasibility Study (3/4)

III. PDP Area**(1) Economic Annual O&M Cost at Full Stage**

Item		Financial Cost (Riel '000)	Conversion Factor	Economic Cost (Riel '000)
1. Pond (Group)				
1. Materials		0	0.82	0
2. Equipment		1,070	0.75	800
3. Labor		540	0.53	290
Total	5.82 ha	1,610		1,090
Per ha (Riel)		<u>276,630</u>		<u>187,290</u>

(2) Annual Disbursement of Economic O&M Cost

Year in Order	Year	Area Newly Irrigated (ha)	O&M Cost Newly Needed (Riel '000)	Cumulative O&M Cost (Riel '000)
1	2002			
2	2003	0.19	40	40
3	2004	0.39	70	110
4	2005	0.58	110	220
5	2006	0.58	110	330
6	2007	0.58	110	440
7	2008	1.16	220	660
8	2009	0.58	110	770
9	2010	0.58	110	880
10	2011	0.58	110	990
11	2012	0.60	100	<u>1,090</u>
12	2013			1,090

Table L-22 Economic Annual O&M Cost, Feasibility Study (4/4)

IV. Rural Road Improvement Program

(1) Economic Annual O&M Cost at Full Stage

Item	Financial Cost (Riel '000)	Conversion Factor	Economic Cost (Riel '000)
1. Materials	2319	0.84	1950
2. Equipment	7,669	0.75	5,750
3. Labor	4,012	0.53	2,130
Total 23.62 km	14,000		9,830
Per km (Riel)	<u>592,720</u>		<u>416,170</u>

(2) Annual Disbursement of Economic O&M Cost

		(Riel '000)
Year in Order	Year	Annual O&M
1	2002	
2	2003	
3	2004	
4	2005	9,830
5	2006	9,830
6	2007	9,830
7	2008	9,830
8	2009	9,830
9	2010	9,830
10	2011	9,830
11	2012	9,830
12	2013	9,830

Table L-23 Economic Replacement Cost, Feasibility Study (1/2)

I. USP Area**(1) Economic Replacement Cost by Item**

Item	Useful Life (year)	Financial Cost (Riel Million)	Conversion Factor	Economic Cost (Riel Million)
1. Irrigation Facilities				
1) Gate	25	1,726.6	0.75	1,295.0
2) Gate	10	45.4	0.75	34.1
3) Wooden stop log	5	11.7	0.75	8.8
2. Offices and Equipment (Project Office and Apex/FWUCs)				
1) Project Office	30	155.6	0.80	124.5
2) SC FWUC and Depots	30	158.0	0.80	126.4
3) Car, bike, generator	10	128.4	0.74	95.0
Scale	10	2.2	0.74	1.6
4) Waky-talky, computers, copy machine	8	26.8	0.74	19.8
Furniture	8	6.7	0.74	5.0
3. Marketing Service Facilities				
1) Facilities	30			
Stage I		72.0	0.80	57.6
Stage II		25.6	0.80	20.5
2) Equipment(Truck, stabilizer)	10			
Stage I		2.9	0.74	2.1
Stage II		160.3	0.74	118.6
3) Equipment (Computer, Fax)	8			
Stage II		6.0	0.74	4.4

(2) Annual Replacement Cost

(Unit : Riel Million)

Year in Order	Year	With 5 Years'	With 8 Years'	With 10 Years'	With 25 Years'	With 30 Years'	Total	Year in Order	Year	With 5 Years'	With 8 Years'	With 10 Years'	With 25 Years'	With 30 Years'	Total
1	2002							26	2027						0
2	2003							27	2028		5.0				5.0
3	2004							28	2029			118.6			118.6
4	2005							29	2030	8.8			1,295.0		1,303.8
5	2006							30	2031						0
6	2007							31	2032			95.0		124.5	219.5
7	2008							32	2033		4.4				4.4
8	2009							33	2034		19.8			126.4	146.2
9	2010	8.8	19.8				28.6	34	2035	8.8		37.8		57.6	104.2
10	2011						0	35	2036		5.0				5.0
11	2012		5.0	95.0			100.0	36	2037						0
12	2013						0	37	2038						0
13	2014						0	38	2039			118.6		20.5	139.1
14	2015	8.8		37.8			46.6	39	2040	8.8					8.8
15	2016						0	40	2041		4.4				4.4
16	2017		4.4				4.4	41	2042		19.8	95.0			114.8
17	2018		19.8				19.8	42	2043						0
18	2019		118.6				118.6	43	2044		5.0				5.0
19	2020	8.8	5.0				13.8	44	2045	8.8		37.8			46.6
20	2021						0	45	2046						0
21	2022			95.0			95.0	46	2047						0
22	2023						0	47	2048						0
23	2024						0	48	2049		4.4	118.6			123.0
24	2025	8.8	4.4	37.8			51.0	49	2050	8.8	19.8				28.6
25	2026		19.8				19.8	50	2051						0

Table L-23 Economic Replacement Cost, Feasibility Study (2/2)

II. SRP Area

(1) Economic Replacement Cost by Item

Item	Useful Life (year)	Financial Cost (Riel '000)	Conversion Factor	Economic Cost (Riel '000)
1. Kim Sei System				
1) Project Facilities				
- Gate	25	272	0.75	200
2. Ang 160 System				
1) Project Facilities				
- Gate	25	8,120	0.75	6,090

(2) Annual Replacement Cost

(Unit : Riel '000)							
Year in Order	Year	With 25 Years'		Year in Order	Year	With 25 Years'	
		Kim Sei	Ang 160			Kim Sei	Ang 160
1	2002	0	0	26	2027	0	6,090
2	2003	0	0	27	2028	200	0
3	2004	0	0	28	2029	0	0
4	2005	0	0	29	2030	0	0
5	2006	0	0	30	2031	0	0
6	2007	0	0	31	2032	0	0
7	2008	0	0	32	2033	0	0
8	2009	0	0	33	2034	0	0
9	2010	0	0	34	2035	0	0
10	2011	0	0	35	2036	0	0
11	2012	0	0	36	2037	0	0
12	2013	0	0	37	2038	0	0
13	2014	0	0	38	2039	0	0
14	2015	0	0	39	2040	0	0
15	2016	0	0	40	2041	0	0
16	2017	0	0	41	2042	0	0
17	2018	0	0	42	2043	0	0
18	2019	0	0	43	2044	0	0
19	2020	0	0	44	2045	0	0
20	2021	0	0	45	2046	0	0
21	2022	0	0	46	2047	0	0
22	2023	0	0	47	2048	0	0
23	2024	0	0	48	2049	0	0
24	2025	0	0	49	2050	0	0
25	2026	0	0	50	2051	0	0

Table L-24 Economic Cost and Benefit Stream, Feasibility Study (1/5)

I. USP

EIRR :	10.20%	Net Present Value (Riel Million)	<i>Benefit</i>	<i>Cost</i>
		(6.50 % discount rate)	73,660	47,535

(Unit : Riel Million)

Year in Order	Year	Economic Cost				Economic Benefit			Net Cash Flow
		Project Invest- ment	O&M	Replace- ment	Total	Irri. & Drainage	Production Foregone	Total	
1	2002	4,445.3			4,445.3			0	-4,445.3
2	2003	9,415.3			9,415.3			0	-9,415.3
3	2004	17,668.0			17,668.0		-20.0	-20.0	-17,688.0
4	2005	18,699.2			18,699.2	569	-52.6	515.9	-18,183.3
5	2006	4,347.0	160.4		4,507.4	3,738.5	-52.6	3,685.9	-821.5
6	2007	513.6	160.4		674.0	5,295.2	-52.6	5,242.6	4,568.6
7	2008	49.9	160.4		210.3	5,986.0	-52.6	5,933.4	5,723.1
8	2009	41.9	160.4		202.3	6,620.1	-52.6	6,567.5	6,365.2
9	2010		160.4	28.6	189.0	6,908.5	-52.6	6,855.9	6,666.9
10	2011		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
11	2012		160.4	100.0	260.4	6,908.5	-52.6	6,855.9	6,595.5
12	2013		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
13	2014		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
14	2015		160.4	46.6	207.0	6,908.5	-52.6	6,855.9	6,648.9
15	2016		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
16	2017		160.4	4.4	164.8	6,908.5	-52.6	6,855.9	6,691.1
17	2018		160.4	19.8	180.2	6,908.5	-52.6	6,855.9	6,675.7
18	2019		160.4	118.6	279.0	6,908.5	-52.6	6,855.9	6,576.9
19	2020		160.4	13.8	174.2	6,908.5	-52.6	6,855.9	6,681.7
20	2021		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
21	2022		160.4	95.0	255.4	6,908.5	-52.6	6,855.9	6,600.5
22	2023		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
23	2024		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
24	2025		160.4	51.0	211.4	6,908.5	-52.6	6,855.9	6,644.5
25	2026		160.4	19.8	180.2	6,908.5	-52.6	6,855.9	6,675.7
26	2027		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
27	2028		160.4	5.0	165.4	6,908.5	-52.6	6,855.9	6,690.5
28	2029		160.4	118.6	279.0	6,908.5	-52.6	6,855.9	6,576.9
29	2030		160.4	1,303.8	1,464.2	6,908.5	-52.6	6,855.9	5,391.7
30	2031		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
31	2032		160.4	219.5	379.9	6,908.5	-52.6	6,855.9	6,476.0
32	2033		160.4	4.4	164.8	6,908.5	-52.6	6,855.9	6,691.1
33	2034		160.4	146.2	306.6	6,908.5	-52.6	6,855.9	6,549.3
34	2035		160.4	104.2	264.6	6,908.5	-52.6	6,855.9	6,591.3
35	2036		160.4	5.0	165.4	6,908.5	-52.6	6,855.9	6,690.5
36	2037		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
37	2038		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
38	2039		160.4	139.1	299.5	6,908.5	-52.6	6,855.9	6,556.4
39	2040		160.4	8.8	169.2	6,908.5	-52.6	6,855.9	6,686.7
40	2041		160.4	4.4	164.8	6,908.5	-52.6	6,855.9	6,691.1
41	2042		160.4	114.8	275.2	6,908.5	-52.6	6,855.9	6,580.7
42	2043		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
43	2044		160.4	5.0	165.4	6,908.5	-52.6	6,855.9	6,690.5
44	2045		160.4	46.6	207.0	6,908.5	-52.6	6,855.9	6,648.9
45	2046		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
46	2047		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
47	2048		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5
48	2049		160.4	123.0	283.4	6,908.5	-52.6	6,855.9	6,572.5
49	2050		160.4	28.6	189.0	6,908.5	-52.6	6,855.9	6,666.9
50	2051		160.4	0	160.4	6,908.5	-52.6	6,855.9	6,695.5

Table L-24 Economic Cost and Benefit Stream, Feasibility Study (2/5)

II. SRP

(II-1) Kim Sei System

EIRR : 13.73% 2003 - 2052		Net Present Value (Riel Million)				Benefit		Cost	
		(6.50 % discount rate)				410,072		206,695	
(Unit : Riel '000)									
Year in Order	Year	Economic Cost				Economic Benefit			Net Cash Flow
		Project Invest- ment	O&M	Replace- ment	Total	Irri. & Drainage	Production Foregone	Total	
1	2002				0			0	0
2	2003	182,720			182,720		(180)	(180)	(182,900)
3	2004	1,010	2,430		3,440	12,960	-180	12,780	9,340
4	2005	440	2,430		2,870	21,060	-180	20,880	18,010
5	2006	430	2,430		2,860	25,920	-180	25,740	22,880
6	2007		2,430		2,430	29,160	-180	28,980	26,550
7	2008		2,430		2,430	32,400	-180	32,220	29,790
8	2009		2,430		2,430	32,400	-180	32,220	29,790
9	2010		2,430		2,430	32,400	-180	32,220	29,790
10	2011		2,430		2,430	32,400	-180	32,220	29,790
11	2012		2,430		2,430	32,400	-180	32,220	29,790
12	2013		2,430		2,430	32,400	-180	32,220	29,790
13	2014		2,430		2,430	32,400	-180	32,220	29,790
14	2015		2,430		2,430	32,400	-180	32,220	29,790
15	2016		2,430		2,430	32,400	-180	32,220	29,790
16	2017		2,430		2,430	32,400	-180	32,220	29,790
17	2018		2,430		2,430	32,400	-180	32,220	29,790
18	2019		2,430		2,430	32,400	-180	32,220	29,790
19	2020		2,430		2,430	32,400	-180	32,220	29,790
20	2021		2,430		2,430	32,400	-180	32,220	29,790
21	2022		2,430		2,430	32,400	-180	32,220	29,790
22	2023		2,430		2,430	32,400	-180	32,220	29,790
23	2024		2,430		2,430	32,400	-180	32,220	29,790
24	2025		2,430		2,430	32,400	-180	32,220	29,790
25	2026		2,430		2,430	32,400	-180	32,220	29,790
26	2027		2,430		2,430	32,400	-180	32,220	29,790
27	2028		2,430	200	2,630	32,400	-180	32,220	29,590
28	2029		2,430		2,430	32,400	-180	32,220	29,790
29	2030		2,430		2,430	32,400	-180	32,220	29,790
30	2031		2,430		2,430	32,400	-180	32,220	29,790
31	2032		2,430		2,430	32,400	-180	32,220	29,790
32	2033		2,430		2,430	32,400	-180	32,220	29,790
33	2034		2,430		2,430	32,400	-180	32,220	29,790
34	2035		2,430		2,430	32,400	-180	32,220	29,790
35	2036		2,430		2,430	32,400	-180	32,220	29,790
36	2037		2,430		2,430	32,400	-180	32,220	29,790
37	2038		2,430		2,430	32,400	-180	32,220	29,790
38	2039		2,430		2,430	32,400	-180	32,220	29,790
39	2040		2,430		2,430	32,400	-180	32,220	29,790
40	2041		2,430		2,430	32,400	-180	32,220	29,790
41	2042		2,430		2,430	32,400	-180	32,220	29,790
42	2043		2,430		2,430	32,400	-180	32,220	29,790
43	2044		2,430		2,430	32,400	-180	32,220	29,790
44	2045		2,430		2,430	32,400	-180	32,220	29,790
45	2046		2,430		2,430	32,400	-180	32,220	29,790
46	2047		2,430		2,430	32,400	-180	32,220	29,790
47	2048		2,430		2,430	32,400	-180	32,220	29,790
48	2049		2,430		2,430	32,400	-180	32,220	29,790
49	2050		2,430		2,430	32,400	-180	32,220	29,790
50	2051		2,430		2,430	32,400	-180	32,220	29,790
51	2052		2,430		2,430	32,400	-180	32,220	29,790

Table L-24 Economic Cost and Benefit Stream, Feasibility Study (3/5)

II. SRP

(II-2) Ang 160 System

EIRR : 14.52%		Net Present Value (Riel Million)				Benefit		Cost	
		(6.50 % discount rate)				403,755		195,935	
(Unit : Riel '000)									
Year in Order	Year	Economic Cost				Economic Benefit			Net Cash Flow
		Project Invest- ment	O&M	Replace- ment	Total	Irri. & Drainage	Production Foregone	Total	
1	2002	166,500			166,500		(90)	(90)	(166,590)
2	2003	1,280	2,630		3,910	12,720	-90	12,630	8,720
3	2004	650	2,630		3,280	20,670	-90	20,580	17,300
4	2005	630	2,630		3,260	25,440	-90	25,350	22,090
5	2006		2,630		2,630	28,620	-90	28,530	25,900
6	2007		2,630		2,630	31,800	-90	31,710	29,080
7	2008		2,630		2,630	31,800	-90	31,710	29,080
8	2009		2,630		2,630	31,800	-90	31,710	29,080
9	2010		2,630		2,630	31,800	-90	31,710	29,080
10	2011		2,630		2,630	31,800	-90	31,710	29,080
11	2012		2,630		2,630	31,800	-90	31,710	29,080
12	2013		2,630		2,630	31,800	-90	31,710	29,080
13	2014		2,630		2,630	31,800	-90	31,710	29,080
14	2015		2,630		2,630	31,800	-90	31,710	29,080
15	2016		2,630		2,630	31,800	-90	31,710	29,080
16	2017		2,630		2,630	31,800	-90	31,710	29,080
17	2018		2,630		2,630	31,800	-90	31,710	29,080
18	2019		2,630		2,630	31,800	-90	31,710	29,080
19	2020		2,630		2,630	31,800	-90	31,710	29,080
20	2021		2,630		2,630	31,800	-90	31,710	29,080
21	2022		2,630		2,630	31,800	-90	31,710	29,080
22	2023		2,630		2,630	31,800	-90	31,710	29,080
23	2024		2,630		2,630	31,800	-90	31,710	29,080
24	2025		2,630		2,630	31,800	-90	31,710	29,080
25	2026		2,630		2,630	31,800	-90	31,710	29,080
26	2027		2,630	6,090	8,720	31,800	-90	31,710	22,990
27	2028		2,630		2,630	31,800	-90	31,710	29,080
28	2029		2,630		2,630	31,800	-90	31,710	29,080
29	2030		2,630		2,630	31,800	-90	31,710	29,080
30	2031		2,630		2,630	31,800	-90	31,710	29,080
31	2032		2,630		2,630	31,800	-90	31,710	29,080
32	2033		2,630		2,630	31,800	-90	31,710	29,080
33	2034		2,630		2,630	31,800	-90	31,710	29,080
34	2035		2,630		2,630	31,800	-90	31,710	29,080
35	2036		2,630		2,630	31,800	-90	31,710	29,080
36	2037		2,630		2,630	31,800	-90	31,710	29,080
37	2038		2,630		2,630	31,800	-90	31,710	29,080
38	2039		2,630		2,630	31,800	-90	31,710	29,080
39	2040		2,630		2,630	31,800	-90	31,710	29,080
40	2041		2,630		2,630	31,800	-90	31,710	29,080
41	2042		2,630		2,630	31,800	-90	31,710	29,080
42	2043		2,630		2,630	31,800	-90	31,710	29,080
43	2044		2,630		2,630	31,800	-90	31,710	29,080
44	2045		2,630		2,630	31,800	-90	31,710	29,080
45	2046		2,630		2,630	31,800	-90	31,710	29,080
46	2047		2,630		2,630	31,800	-90	31,710	29,080
47	2048		2,630		2,630	31,800	-90	31,710	29,080
48	2049		2,630		2,630	31,800	-90	31,710	29,080
49	2050		2,630		2,630	31,800	-90	31,710	29,080
50	2051		2,630		2,630	31,800	-90	31,710	29,080

Table L-24 Economic Cost and Benefit Stream, Feasibility Study (4/5)

III. PDP Area

EIRR :	8.74%
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Net Present Value (Riel Million)	<i>Benefit</i>	<i>Cost</i>
(6.50 % discount rate)	104,858	87,009

(Unit : Riel '000)

Year in Order	Year	Economic Cost				Economic Benefit			Net Cash Flow
		Project Invest- ment	O&M	Replace- ment	Total	Irri. & Drainage	Production Foregone	Total	
1	2002	4,720		-	4,720		(50)	(50)	(4,770)
2	2003	9,330	40	-	9,370	220	(80)	140	(9,230)
3	2004	9,030	110	-	9,140	820	(120)	700	(8,440)
4	2005	11,660	220	-	11,880	1,860	(150)	1,710	(10,170)
5	2006	10,930	330	-	11,260	3,140	(220)	2,920	(8,340)
6	2007	21,860	440	-	22,300	4,510	(260)	4,250	(18,050)
7	2008	10,930	660	-	11,590	6,570	(300)	6,270	(5,320)
8	2009	10,930	770	-	11,700	8,340	(330)	8,010	(3,690)
9	2010	10,930	880	-	11,810	9,980	(370)	9,610	(2,200)
10	2011	11,000	990	-	11,990	11,350	-370	10,980	(1,010)
11	2012		1,090	-	1,090	12,750	-370	12,380	11,290
12	2013		1,090	-	1,090	13,450	-370	13,080	11,990
13	2014		1,090	-	1,090	13,700	-370	13,330	12,240
14	2015		1,090	-	1,090	13,700	-370	13,330	12,240
15	2016		1,090	-	1,090	13,700	-370	13,330	12,240
16	2017		1,090	-	1,090	13,700	-370	13,330	12,240
17	2018		1,090	-	1,090	13,700	-370	13,330	12,240
18	2019		1,090	-	1,090	13,700	-370	13,330	12,240
19	2020		1,090	-	1,090	13,700	-370	13,330	12,240
20	2021		1,090	-	1,090	13,700	-370	13,330	12,240
21	2022		1,090	-	1,090	13,700	-370	13,330	12,240
22	2023		1,090	-	1,090	13,700	-370	13,330	12,240
23	2024		1,090	-	1,090	13,700	-370	13,330	12,240
24	2025		1,090	-	1,090	13,700	-370	13,330	12,240
25	2026		1,090	-	1,090	13,700	-370	13,330	12,240
26	2027		1,090	-	1,090	13,700	-370	13,330	12,240
27	2028		1,090	-	1,090	13,700	-370	13,330	12,240
28	2029		1,090	-	1,090	13,700	-370	13,330	12,240
29	2030		1,090	-	1,090	13,700	-370	13,330	12,240
30	2031		1,090	-	1,090	13,700	-370	13,330	12,240

Table L-24 Economic Cost and Benefit Stream, Feasibility Study (5/5)

IV.RIP

EIRR :								
Without USP	With USP	With USP						
		Net Present Value (Riel Million)				Benefit	Cost	
13.66%	18.83%	(6.50 % discount rate)				11,551,600	2,772,799	
(Unit : Riel '000)								
Year in Order	Year	Economic Cost			Economic Benefit		Net Cash Flow	
		Project Invest-ment	O&M	Total	Without USP	With USP	Without USP	With USP
1	2002	189,190		189,190			(189,190)	(189,190)
2	2003	1,637,610		1,637,610			(1,637,610)	(1,637,610)
3	2004	1,247,370		1,247,370			(1,247,370)	(1,247,370)
4	2005		9,830	9,830	439,140	439,140	429,310	429,310
5	2006		9,830	9,830	442,820	505,160	432,990	495,330
6	2007		9,830	9,830	446,500	571,180	436,670	561,350
7	2008		9,830	9,830	450,180	637,200	440,350	627,370
8	2009		9,830	9,830	453,860	703,220	444,030	693,390
9	2010		9,830	9,830	457,540	769,250	447,710	759,420
10	2011		9,830	9,830	461,780	778,070	451,950	768,240
11	2012		9,830	9,830	466,020	786,890	456,190	777,060
12	2013		9,830	9,830	470,260	795,710	460,430	785,880
13	2014		9,830	9,830	474,500	804,530	464,670	794,700
14	2015		9,830	9,830	478,740	813,350	468,910	803,520
15	2016		9,830	9,830	482,980	822,170	473,150	812,340
16	2017		9,830	9,830	487,220	830,990	477,390	821,160
17	2018		9,830	9,830	491,460	839,810	481,630	829,980
18	2019		9,830	9,830	495,700	848,630	485,870	838,800
19	2020		9,830	9,830	499,940	857,440	490,110	847,610
20	2021		9,830	9,830	505,150	866,550	495,320	856,720
21	2022		9,830	9,830	510,360	875,660	500,530	865,830
22	2023		9,830	9,830	515,570	884,770	505,740	874,940
23	2024		9,830	9,830	520,780	893,880	510,950	884,050
24	2025		9,830	9,830	525,990	902,990	516,160	893,160
25	2026		9,830	9,830	531,200	912,100	521,370	902,270
26	2027		9,830	9,830	536,410	921,210	526,580	911,380
27	2028		9,830	9,830	541,620	930,320	531,790	920,490
28	2029		9,830	9,830	546,830	939,430	537,000	929,600
29	2030		9,830	9,830	552,070	948,490	542,240	938,660
30	2031		9,830	9,830	558,520	959,740	548,690	949,910
31	2032		9,830	9,830	564,970	970,990	555,140	961,160
32	2033		9,830	9,830	571,420	982,240	561,590	972,410
33	2034		9,830	9,830	577,870	993,490	568,040	983,660
34	2035		9,830	9,830	584,320	1,004,740	574,490	994,910
35	2036		9,830	9,830	590,770	1,015,990	580,940	1,006,160
36	2037		9,830	9,830	597,220	1,027,240	587,390	1,017,410
37	2038		9,830	9,830	603,670	1,038,490	593,840	1,028,660
38	2039		9,830	9,830	610,120	1,049,740	600,290	1,039,910
39	2040		9,830	9,830	616,570	1,060,980	606,740	1,051,150
40	2041		9,830	9,830	624,520	1,074,840	614,690	1,065,010
41	2042		9,830	9,830	632,470	1,088,700	622,640	1,078,870
42	2043		9,830	9,830	640,420	1,102,560	630,590	1,092,730
43	2044		9,830	9,830	648,370	1,116,420	638,540	1,106,590
44	2045		9,830	9,830	656,320	1,130,280	646,490	1,120,450
45	2046		9,830	9,830	664,270	1,144,140	654,440	1,134,310
46	2047		9,830	9,830	672,220	1,158,000	662,390	1,148,170
47	2048		9,830	9,830	680,170	1,171,860	670,340	1,162,030
48	2049		9,830	9,830	688,120	1,185,720	678,290	1,175,890
49	2050		9,830	9,830	696,070	1,199,590	686,240	1,189,760
50	2051		9,830	9,830	704,020	1,213,460	694,190	1,203,630

Table L-25 Assessment of Farm Economy, Average Operating Size, Feasibility Study (1/2)

(1) USP Area (0.87 ha)

Item	Present Condition				Future/With Project Condition			
	Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)	Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)
1. Total Income				<u>875.5</u>				<u>1,746.0</u>
1.1 Farm Income				<u>737.6</u>				<u>1,608.1</u>
- Impro.Local Paddy	0.696	1,320	370	339.9	0.458	2,800	370	474.5
- H.Y.V Paddy	0.114	1,300	300	44.5	0.211	3,300	300	208.9
- Maize	0.003	900	600	1.6	0.019	2,000	600	22.8
- Soybean	0	0	0	0	0.019	1,000	1,200	22.8
- Mungbean	0.008	450	1,400	5.0	0.019	1,000	1,400	26.6
- Groundnut	0.003	450	1,300	1.8	0.019	850	1,300	21.0
- Sesame	0	0	0	0	0.019	800	1,800	27.4
- Vegetables	0.012	4,000	630	30.2	0.105	7,400	630	489.5
- Livestock				312.9				312.9
- Fruits and others				1.7				1.7
1.2 Non-farm Income				<u>137.9</u>				<u>137.9</u>
2. Total Expenditure				<u>866.2</u>				<u>1,033.9</u>
		Production Cost (Riel'000/ha)				Production Cost (Riel'000/ha)		
2.1 Production Cost				<u>357.4</u>				<u>525.1</u>
- Impro.Local Paddy	0.696		203	141.3	0.458		373	170.8
- H.Y.V Paddy	0.114		195	22.2	0.211		386	81.4
- Maize	0.003		149	0.4	0.019		256	4.9
- Soybean	0		0	0	0.019		328	6.2
- Mungbean	0.008		203	1.6	0.019		329	6.3
- Groundnut	0.003		264	0.8	0.019		380	7.2
- Sesame	0		0	0	0.019		208	4.0
- Vegetables	0.012		308	3.7	0.105		542	56.9
- Others				187.4				187.4
2.2 Living Expenditure				<u>508.8</u>				<u>508.8</u>
- Rice								
Home consumption				245.1				264.7
Purchase				19.6				0
- Other foods				49.2				49.2
- Others				194.9				194.9
3. Net Reserve				9.3				712.1

(2) PDP Area (1.15 ha)

Item	Present Condition				Future/With Project Condition			
	Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)	Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)
1. Total Income				<u>1,065.6</u>				<u>1,239.2</u>
1.1 Farm Income				<u>821.3</u>				<u>994.9</u>
- Impro.Local Paddy	0.92	1,320	370	449.3	0.854	1,320	370	417.1
- H.Y.V Paddy	0.151	1,300	300	58.9	0.151	1,300	300	58.9
- Maize	0.003	900	600	1.6	0.003	900	600	1.6
- Soybean	0	0	0	0	0.011	1,000	1,200	13.2
- Mungbean	0.010	450	1,400	6.3	0.011	1,000	1,400	15.4
- Groundnut	0.003	0	0	0	0.011	850	1,300	12.2
- Sesame	0	0	0	0	0.011	800	1,800	15.8
- Vegetables	0.016	4,000	630	40.3	0.042	7,400	630	195.8
- Livestock				253.1				253.1
- Fruits and others				11.8				11.8
1.2 Non-farm Income				<u>244.3</u>				<u>244.3</u>
2. Total Expenditure				<u>961.7</u>				<u>978.3</u>
		Production Cost (Riel'000/ha)				Production Cost (Riel'000/ha)		
2.1 Production Cost				<u>330.1</u>				<u>346.7</u>
- Impro.Local Paddy	0.92		203	186.8	0.854		203	173.4
- H.Y.V Paddy	0.151		195	29.4	0.151		195	29.4
- Maize	0.003		149	0.4	0.003		149	0.4
- Soybean	0		0	0	0.011		328	3.6
- Mungbean	0.010		203	2.0	0.011		400	4.4
- Groundnut	0.003		0	0	0.011		380	4.2
- Sesame	0		0	0	0.011		208	2.3
- Vegetables	0.016		308	4.9	0.042		533	22.4
- Others				106.6				106.6
2.2 Living Expenditure				<u>631.6</u>				<u>631.6</u>
- Rice								
Home consumption				267.7				267.7
Purchase				5.2				5.2
- Other foods				63.3				63.3
- Others				295.4				295.4
3. Net Reserve				103.9				260.9

Note : PDP in Trapeang Snao Village, Nhaeng Nhang Commune
5.82 ha of irrigated area operated by 88 farmers (101.2 ha in total, 1.15 ha x 88 farmers)
On average, **0.066** ha per farmer is irrigated by the ponds (5.82 ha/ 88 farmers)

	Soybean	Mungbean	Groundnut	Sesame	Vegetables
Area (ha)	0.011	0.011	0.011	0.011	0.042

Table L-25 Assessment of Farm Economy, Average Operating Size, Feasibility Study (2/2)

(3) SRP Areas**2-1 Kim Sei SRP (1.33 ha)**

Item		Present Condition				Future/With Project Condition			
		Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)	Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)
1. Total Income					<u>1,502.2</u>				<u>2,017.7</u>
1.1 Farm Income					<u>1,160.9</u>				<u>1,676.4</u>
- Impro.L. Paddy	Rainfed	1.120	1,320	370	547.0	0.579	1,320	370	282.8
	Irrigated					0.432	2,800	370	447.6
- H.Y.V Paddy	Rainfed	0.184	1,300	300	71.8	0.022	1,300	300	8.6
	Irrigated					0.216	3,300	300	213.8
- Maize	Rainfed	0.028	900	600	15.1	0.001	900	600	0.5
	Irrigated					0.027	2,000	600	32.4
- Mungbean	Irrigated					0.027	1,000	1,400	37.8
- Vegetables	Rainfed	0.012	4,000	630	30.2	0.012	4,000	630	30.2
	Irrigated					0.027	7,400	630	125.9
- Livestock					479.8				479.8
- Fruits and others					17.0				17.0
1.2 Non-farm Income					<u>341.3</u>				<u>341.3</u>
2. Total Expenditure					<u>1,330.2</u>				<u>1,459.5</u>
			Production Cost (Riel'000/ha)				Production Cost (Riel'000/ha)		
2.1 Production Cost					<u>414.3</u>				<u>543.6</u>
- Impro.L. Paddy	Rainfed	1.120		203	227.4	0.579		203	117.5
	Irrigated					0.432		373	161.1
- H.Y.V Paddy	Rainfed	0.184		195	35.9	0.022		195	4.3
	Irrigated					0.216		386	83.4
- Maize	Rainfed	0.028		149	4.2	0.001		149	0.1
	Irrigated					0.027		256	6.9
- Mungbean	Irrigated					0.027		329	8.9
- Vegetables	Rainfed	0.012		308	3.7	0.012		308	3.7
	Irrigated					0.027		542	14.6
- Others					143.1				143.1
2.2 Living Expenditure					<u>915.9</u>				<u>915.9</u>
- Rice									
	Home consumption				317.9				325.5
	Purchase				7.6				0
- Other foods					74.7				74.7
- Others					515.7				515.7
3. Net Reserve					172.0				558.2

2-2 Ang 160 SRP (1.10 ha)

Item		Present Condition				Future/With Project Condition			
		Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)	Area (ha)	Yield (kg/ha)	Price (Riel/kg)	Amount (Riel'000)
1. Total Income					<u>1034.7</u>				<u>1,184.4</u>
1.1 Farm Income					<u>854.6</u>				<u>1,004.3</u>
- Impro.L. Paddy	Rainfed	0.936	1,320	370	457.1	0.774	1,320	370	378.0
	Irrigated					0.131	2,800	370	135.7
- H.Y.V Paddy	Rainfed	0.154	1,300	300	60.1	0.100	1,300	300	39.0
	Irrigated					0.062	3,300	300	61.4
- Maize	Rainfed	0.023	900	600	12.4	0.016	900	600	8.6
	Irrigated					0.008	2,000	600	9.6
- Soybean	Irrigated					0.008	1,000	1,200	9.6
- Groundnut	Irrigated					0.008	850	1,300	8.8
- Sesame	Irrigated					0.008	800	1,800	11.5
- Vegetables	Rainfed	0.010	4,000	630	25.2	0.002	4,000	630	5.0
	Irrigated					0.008	7,400	630	37.3
- Livestock					276.8				276.8
- Fruits and others					23.0				23.0
1.2 Non-farm Income					<u>180.1</u>				<u>180.1</u>
2. Total Expenditure					<u>983.7</u>				<u>1,023.2</u>
			Production Cost (Riel'000/ha)				Production Cost (Riel'000/ha)		
2.1 Production Cost					<u>332.4</u>				<u>371.9</u>
- Impro.L. Paddy	Rainfed	0.936		203	190.0	0.774		203	157.1
	Irrigated					0.131		373	48.9
- H.Y.V Paddy	Rainfed	0.154		195	30.0	0.100		195	19.5
	Irrigated					0.062		386	23.9
- Maize	Rainfed	0.023		149	3.4	0.016		149	2.4
	Irrigated					0.008		256	2.0
- Soybean	Irrigated					0.008		328	2.6
- Groundnut	Irrigated					0.008		380	3.0
- Sesame	Irrigated					0.008		208	1.7
- Vegetables	Rainfed	0.010		308	3.1	0.002		308	0.6
	Irrigated					0.008		542	4.3
- Others					105.9				105.9
2.2 Living Expenditure					<u>651.3</u>				<u>651.3</u>
- Rice									
Home consumption					324.4				338.2
Purchase					13.8				0
- Other foods					41.5				41.5
- Others					271.6				271.6
3. Net Reserve					51.0				161.2

Table L-26 Cash Flow of FWUC Activities (1/3)

Item	Area(ha)	ISF Rate			ISF Collection (Riel Million)
		In kind (Paddy) kg/ha	Riel/ha	By Cash Riel/ha	
Wet Season	3,500	140	40,600	-	142.10
	500	-	-	40,600	20.30
Dry Season	550	-	-	76,500	42.08
Total (100% Collection)					204.48

ISF Collection Rate : 80.0%

I. Irrigation Activities

(Unit : Riel Million)

Year		Revenue			Expenditure									Annual	Cumulative	
in Order	Year	ISF	Paddy Storage	Total Revenue	Personnel			Annual O&M			Replacement			Total	Balance	
					Apex	SC- FWUCs	Sub- total	Apex	SC- FWUCs	Sub- total	Irrigation Facilities	Office & Equip.	Sub- total			
1	2002															
2	2003															
3	2004															
4	2005															
5	2006	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	15.7
6	2007	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	31.4
7	2008	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	47.1
8	2009	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	62.8
9	2010	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	11.7	26.8	38.5	202.1	-22.8	40.0
10	2011	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	0	0	233.6	-54.3	-14.3
11	2012	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	134.7	134.7	298.3	-119.0	-133.3
12	2013	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-117.6
13	2014	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-101.9
14	2015	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	57.1	2.2	59.3	222.9	-43.6	-145.5
15	2016	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	0	0	233.6	-54.3	-199.8
16	2017	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-184.1
17	2018	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	26.8	26.8	190.4	-11.1	-195.2
18	2019	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-179.5
19	2020	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	11.7	6.7	18.4	182.0	-2.7	-182.2
20	2021	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	0	0	233.6	-54.3	-236.5
21	2022	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	128.4	128.4	292.0	-112.7	-349.2
22	2023	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-333.5
23	2024	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-317.8
24	2025	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	57.1	2.2	59.3	222.9	-43.6	-361.4
25	2026	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	26.8	26.8	260.4	-81.1	-442.5
26	2027	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-426.8
27	2028	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	6.7	6.7	170.3	9.0	-417.8
28	2029	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-402.1
29	2030	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	1,737.7	0	1,737.7	1,901.3	-1,722.0	-2,124.1
30	2031	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	0	0	233.6	-54.3	-2,178.4
31	2032	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	283.6	283.6	447.2	-267.9	-2,446.3
32	2033	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,430.6
33	2034	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	184.8	184.8	348.4	-169.1	-2,599.7
34	2035	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	57.1	2.2	59.3	222.9	-43.6	-2,643.3
35	2036	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	6.7	6.7	240.3	-61.0	-2,704.3
36	2037	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,688.6
37	2038	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,672.9
38	2039	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,657.2
39	2040	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	11.7	0	11.7	175.3	4.0	-2,653.2
40	2041	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	0	0	233.6	-54.3	-2,707.5
41	2042	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	154.8	154.8	318.4	-139.1	-2,846.6
42	2043	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,830.9
43	2044	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	6.7	6.7	170.3	9.0	-2,821.9
44	2045	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	57.1	2.2	59.3	222.9	-43.6	-2,865.5
45	2046	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	0	0	233.6	-54.3	-2,919.8
46	2047	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,904.1
47	2048	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,888.4
48	2049	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	0	0	0	163.6	15.7	-2,872.7
49	2050	163.6	15.7	179.3	10.3	88.9	99.2	28.2	36.2	64.4	11.7	26.8	38.5	202.1	-22.8	-2,895.5
50	2051	163.6	15.7	179.3	10.3	88.9	99.2	63.2	71.2	134.4	0	0	0	233.6	-54.3	-2,949.8
Total		7,525.6	722.2	8,247.8	473.8	4,089.4	4,563.2	1,612.2	1,980.2	3,592.4	2,012.9	1,029.1	3,042.0	11,197.6	-2,949.8	

Table L-26 Cash Flow of FWUC Activities (2/3)

Item	Revenue at Full Stage (Riel Million)	Marketing Operation Rate (%)
Market Charge	54.1	100.00%
Trade Income	128.3	100.00%
Total	182.4	

I. Marketing Support

(Unit : Riel Million)

Year in Order	Year	Revenue			Expenditure								Annual Balance	Cumulative
		Market Charge	Trade Income	Total Revenue	Personnel Apex (M. Unit)	O&M	Equipment Purchase	Replacement			Staff Training	Total		
								Market Facilities	Shipping	Sub- total				
1	2002													
2	2003													
3	2004													
4	2005													
5	2006	18.2		18.2	7.4	5.9				0		13.3	4.9	4.9
6	2007	30.2		30.2	7.4	5.9				0		13.3	16.9	21.8
7	2008	42.1		42.1	7.4	5.9				0		13.3	28.8	50.6
8	2009	48.1		48.1	7.4	5.9				0		13.3	34.8	85.4
9	2010	54.1	128.3	182.4	9.4	20.0	111.9			0	5.3	146.56	35.8	121.2
10	2011	54.1	128.3	182.4	9.4	20.0	80.0			0		109.36	73.0	194.3
11	2012	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	347.3
12	2013	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	500.4
13	2014	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	653.4
14	2015	54.1	128.3	182.4	9.4	20.0		2.9		2.9		32.26	150.1	803.5
15	2016	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	956.6
16	2017	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	1,109.6
17	2018	54.1	128.3	182.4	9.4	20.0			6.0	6		35.36	147.0	1,256.7
18	2019	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	1,409.7
19	2020	54.1	128.3	182.4	9.4	20.0			80.3	80.3		109.66	72.7	1,482.4
20	2021	54.1	128.3	182.4	9.4	20.0			80.0	80.0		109.36	73.0	1,555.5
21	2022	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	1,708.5
22	2023	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	1,861.6
23	2024	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	2,014.6
24	2025	54.1	128.3	182.4	9.4	20.0		2.9		2.9		32.26	150.1	2,164.7
25	2026	54.1	128.3	182.4	9.4	20.0			6.0	6.0		35.36	147.0	2,311.8
26	2027	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	2,464.8
27	2028	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	2,617.9
28	2029	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	2,770.9
29	2030	54.1	128.3	182.4	9.4	20.0			80.3	80.3		109.66	72.7	2,843.6
30	2031	54.1	128.3	182.4	9.4	20.0			80.0	80.0		109.36	73.0	2,916.7
31	2032	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	3,069.7
32	2033	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	3,222.8
33	2034	54.1	128.3	182.4	9.4	20.0			6.0	6.0		35.36	147.0	3,369.8
34	2035	54.1	128.3	182.4	9.4	20.0		74.9		74.9		104.26	78.1	3,447.9
35	2036	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	3,601.0
36	2037	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	3,754.0
37	2038	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	3,907.1
38	2039	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	4,060.1
39	2040	54.1	128.3	182.4	9.4	20.0			105.9	105.9		135.26	47.1	4,107.2
40	2041	54.1	128.3	182.4	9.4	20.0			80.0	80.0		109.36	73.0	4,180.3
41	2042	54.1	128.3	182.4	9.4	20.0			6.0	6.0		35.36	147.0	4,327.3
42	2043	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	4,480.4
43	2044	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	4,633.4
44	2045	54.1	128.3	182.4	9.4	20.0		2.9		2.9		32.26	150.1	4,783.5
45	2046	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	4,936.6
46	2047	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	5,089.6
47	2048	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	5,242.7
48	2049	54.1	128.3	182.4	9.4	20.0				0		29.36	153.0	5,395.7
49	2050	54.1	128.3	182.4	9.4	20.0			86.3	86.3		115.66	66.7	5,462.4
50	2051	54.1	128.3	182.4	9.4	20.0			80.0	80.0		109.36	73.0	5,535.5
		2,410.8	5,388.6	7,799.4	422.7	863.6	191.9	83.6	696.8	780.4	5.3	2,263.9	5,535.5	-

Table L-26 Cash Flow of FWUC Activities (3/3)

ISF Collection Rate : 80.0%

Rate of Marketing Operation :
 Market charge 100.0%
 Trade impcme 100.0%

I. FWUCs' Whole Activities

(Unit : Riel Million)

Year in Order	Year	Revenue			Expenditure							Balance	Cumulative
		Irrigation Activities	Marteing Support	Total Revenue	Personnel	O&M	Equipment Purchase	Replacement			Total		
								Irrigation Activities	Marteing Support	Sub- total			
1	2002												
2	2003												
3	2004												
4	2005												
5	2006	179.3	18.2	197.5	106.6	70.3	0	0	0	0	176.9	20.6	20.6
6	2007	179.3	30.2	209.5	106.6	70.3	0	0	0	0	176.9	32.6	53.2
7	2008	179.3	42.1	221.4	106.6	70.3	0	0	0	0	176.9	44.5	97.7
8	2009	179.3	48.1	227.4	106.6	70.3	0	0	0	0	176.9	50.5	148.2
9	2010	179.3	182.4	361.7	108.6	84.4	111.9	38.5	0	38.5	343.4	18.3	166.5
10	2011	179.3	182.4	361.7	108.6	154.4	80.0	0	0	0	343.0	18.7	185.3
11	2012	179.3	182.4	361.7	108.6	84.4	0	134.7	0	134.7	327.7	34.0	219.3
12	2013	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	388.1
13	2014	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	556.8
14	2015	179.3	182.4	361.7	108.6	84.4	0	59.3	2.9	62.2	255.2	106.5	663.3
15	2016	179.3	182.4	361.7	108.6	154.4	0	0	0	0	263.0	98.7	762.1
16	2017	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	930.8
17	2018	179.3	182.4	361.7	108.6	84.4	0	26.8	6	32.8	225.8	135.9	1,066.8
18	2019	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	1,235.5
19	2020	179.3	182.4	361.7	108.6	84.4	0	18.4	80.3	98.7	291.7	70.0	1,305.5
20	2021	179.3	182.4	361.7	108.6	154.4	0	0	80.0	80.0	343.0	18.7	1,324.3
21	2022	179.3	182.4	361.7	108.6	84.4	0	128.4	0	128.4	321.4	40.3	1,364.6
22	2023	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	1,533.4
23	2024	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	1,702.1
24	2025	179.3	182.4	361.7	108.6	84.4	0	59.3	2.9	62.2	255.2	106.5	1,808.6
25	2026	179.3	182.4	361.7	108.6	154.4	0	26.8	6	32.8	295.8	65.9	1,874.6
26	2027	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	2,043.3
27	2028	179.3	182.4	361.7	108.6	84.4	0	7	0	6.7	199.7	162.0	2,205.4
28	2029	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	2,374.1
29	2030	179.3	182.4	361.7	108.6	84.4	0	1,737.7	80.3	1,818.0	2,011.0	(1,649.3)	724.8
30	2031	179.3	182.4	361.7	108.6	154.4	0	0	80.0	80.0	343.0	18.7	743.6
31	2032	179.3	182.4	361.7	108.6	84.4	0	283.6	0	283.6	476.6	(114.9)	628.7
32	2033	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	797.5
33	2034	179.3	182.4	361.7	108.6	84.4	0	184.8	6.0	190.8	383.8	(22.1)	775.4
34	2035	179.3	182.4	361.7	108.6	84.4	0	59.3	74.9	134.2	327.2	34.5	809.9
35	2036	179.3	182.4	361.7	108.6	154.4	0	6.7	0	6.7	269.7	92.0	902.0
36	2037	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	1,070.7
37	2038	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	1,239.5
38	2039	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	1,408.2
39	2040	179.3	182.4	361.7	108.6	84.4	0	11.7	105.9	117.6	310.6	51.1	1,459.3
40	2041	179.3	182.4	361.7	108.6	154.4	0	0	80.0	80	343.0	18.7	1,478.1
41	2042	179.3	182.4	361.7	108.6	84.4	0	154.8	6.0	160.8	353.8	7.9	1,486.0
42	2043	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	1,654.8
43	2044	179.3	182.4	361.7	108.6	84.4	0	6.7	0	6.7	199.7	162.0	1,816.8
44	2045	179.3	182.4	361.7	108.6	84.4	0	59.3	2.9	62.2	255.2	106.5	1,923.3
45	2046	179.3	182.4	361.7	108.6	154.4	0	0	0	0	263.0	98.7	2,022.1
46	2047	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	2,190.8
47	2048	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	2,359.6
48	2049	179.3	182.4	361.7	108.6	84.4	0	0	0	0	193.0	168.7	2,528.3
49	2050	179.3	182.4	361.7	108.6	84.4	0	38.5	86.3	124.8	317.8	43.9	2,572.2
50	2051	179.3	182.4	361.7	108.6	154.4	0	0	80.0	80.0	343.0	18.7	2,591.0
		8,247.8	7,799.4	16,047.2	4,985.9	4,456.0	191.9	3,042.0	780.4	3,822.4	13,456.2	2,591.0	-