

TABLES

Table 1 URBAN WATER DEMAND

(Unit: MCM/yr)

Zone No.	Demand Center	1981	1986	1991	1996	2001
1	Nong Tamlung	0	0.3	0.6	0.6	0.7
1	Phanat Nikhom	0.5	0.7	0.8	0.9	1.0
1	Tha Bun Mi	0.2	0.2	0.3	0.4	0.4
1	Ban Bung	0.1	0.2	0.3	0.4	0.4
2	Chon Buri	12.2	12.4	12.7	17.8	23.3
4	Laem Chabang	3.9	4.8	6.4	11.4	18.5
5	Pattaya	1.0	4.3	7.8	10.9	15.2
6	Huai Yai	0	0.4	0.8	0.9	1.0
7	Sattahip	0	1.0	1.9	2.4	2.9
8	Ban Chang	0	0.7	0.9	1.0	1.1
9	Map Ta Phut	0	0.8	1.5	2.6	4.0
10	Rayong	2.3	3.1	4.0	6.4	9.3
10	Ban Khai	0.1	0.2	0.3	0.4	0.4
Total		20.3	29.1	38.3	56.1	78.2

Table 2 RURAL WATER DEMAND

(Unit: MCM/yr)

Zone No.	1981	1986	1991	1996	2001
1	0.3	1.8	3.1	4.6	5.8
2	0.1	0.1	0.1	0.1	0.1
3	0	0.1	0.2	0.3	0.3
4	0.3	0.3	0.7	1.0	1.2
5	0	0.1	0.2	0.3	0.3
6	0	0	0	0.1	0.1
7	0	0.6	1.0	1.5	2.0
8	0	0	0	0	0
9	0	0.1	0.1	0.2	0.2
10	0.1	0.9	1.7	2.5	3.3
Total	0.8	4.0	7.1	10.6	13.3

Table 3 INDUSTRIAL WATER DEMAND

(Unit: MCM/yr)

Zone No.	1981	1986	1991	1996	2001
1	0	3.3	6.6	6.6	6.6
1-1	4.3	4.3	4.3	4.3	4.3
2	0	0	0	0	0
3	2.3	2.3	2.3	2.3	2.3
4	2.1	7.5	16.0	19.5	27.8
5	0	0.7	0.7	0.7	0.7
6	0	0	0	0	0
7	0	3.9	3.9	3.9	3.9
8	0	0	0	0	0
9	0	33.0	35.8	38.5	41.3
10	1.6	1.6	1.6	1.6	1.6
Total	10.3	56.6	71.2	77.4	88.5

Table 4 10-DAY UNIT IRRIGATION DIVERSION REQUIREMENT
(Cropping intensity 150 %)

(Unit: lit/s/ha)

Year	Month		(1)	(2)	(3)
1979	May	1 - 10	0.03	0	0
		11 - 20	0.03	0	0
		21 - 31	0	0	0
	June	1 - 10	0.01	0.01	0.01
		11 - 20	0.02	0.02	0.02
		21 - 30	0.08	0.12	0.09
	July	1 - 10	0.23	0.27	0.25
		11 - 20	0.82	0.79	0.82
		21 - 31	0.60	0.77	0.65
	Aug.	1 - 10	1.30	1.09	1.41
		11 - 20	1.52	1.64	1.64
		21 - 31	1.26	0.35	1.36
	Sep.	1 - 10	1.03	0.74	1.11
		11 - 20	0.18	0.56	0.18
		21 - 30	0	0	0
	Oct.	1 - 10	0.94	1.25	1.02
		11 - 20	0.92	1.00	0.99
		21 - 31	0.13	0.69	0.14
	Nov.	1 - 10	0.40	0.43	0.43
		11 - 20	0.21	0.22	0.22
		21 - 30	0.25	0.26	0.25
	Dec.	1 - 10	0.31	0.31	0.26
		11 - 20	0.38	0.32	0.31
		21 - 31	0.40	0.34	0.34
1980	Jan.	1 - 10	0.49	0.42	0.43
		11 - 20	0.55	0.47	0.49
		21 - 31	0.59	0.50	0.52
	Feb.	1 - 10	0.67	0.56	0.60
		11 - 20	0.61	0.49	0.54
		21 - 29	0.58	0.28	0.51
	Mar.	1 - 10	0.57	0.32	0.49
		11 - 20	0.26	0.11	0.22
		21 - 31	0.20	0.12	0.16
	Apr.	1 - 10	0.22	0.10	0.15
		11 - 20	0.01	0.04	0.01
		21 - 30	0.10	0.02	0.03

Note : (1) : The requirement for Bang Phra, Thap Ma and Ban Khai Extension Schemes.

(2) : The requirement for Khlong Luang Scheme.

(3) : The requirement for Existing Ban Khai Scheme.

Table 5 IRRIGATION WATER DEMAND

(Unit: MCM/yr)

Zone No.	Project Name	Area (ha)	1981	1986	1991	1996	2001
1	Khlong Luang	4,700	-	-	60.1	60.1	60.1
2	Ban Phra	1,120	15.4	15.4	15.4	15.4	15.4
10	Ban Khai	4,800	65.8	65.8	65.8	65.8	65.8
	Ban Khai Extension	5,400	-	75.1	75.1	75.1	75.1
	Thap Ma	2,200	-	-	-	30.6	30.6
Total		18,220	81.2	156.3	216.4	247.0	247.0

Table 6 MAINTENANCE FLOW

Zone No.	Balance Point	Maintenance Flow	
		(m ³ /s)	(MCM/yr)
1	Proposed Khlong Luang damsite	0.06	1.9
1-1	Ban Bung dam	0.01	0.4
2	Estuary of the Khlong Yai Cheng river	-	-
3	Bang Phra dam	0.25	8.0
4	Estuary of the Khlong Ban Lamung river	-	- /1
5	Map Prachan dam	0.08	2.5
6	Estuary of the Huai Yai river	-	-
8	Estuary of the Khlong Phayun river	-	-
9	Estuary of the Khlong Huai Yai river	-	-
10	Ban Khai weir	0.38	12.0
10-1	Proposed Khlong Thap Ma damsite	0.33	10.5

/1 ; Maintenance flow from the Nong Kho dam is estimated at 3.2 MCM/year, which will be withdrawn for irrigation purpose, in between the Nong Kho dam and the estuary.

Table 7 GROSS WATER DEMAND

Year	Item	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10	Zone 10-1	Total	
1981	(1) Domestic water	0.7	12.2	0	3.9	1.0	0	0	0.3	0	2.4	0	20.6	
	Urban	0.3	0.1	0	0.3	0	0	0	0	0	0.1	0	0.8	
	Rural	1.0	12.3	0	4.2	1.0	0	0	0.3	0	2.5	0	21.4	
	Sub-total	0	0	2.3	2.1	0	0	0	0	0	0	1.6	0	10.0
	(2) Industrial water	0	15.4	0	0	0	0	0	0	0	0	60.3	0	75.7
(3) Irrigation water	1.9	0.4	8.0	0	2.5	0	0	0	0	0	12.0	0	24.8	
(4) Maintenance flow	2.9	4.5	10.3	6.3	3.5	0	0	0	0.3	0	76.4	0	131.9	
1986	(1) Domestic water	1.2	12.4	0	4.8	4.3	0.4	1.0	0.7	0.8	3.3	0	29.1	
	Urban	1.8	0.1	0.1	0.3	0.1	0	0.6	0	0.1	0.9	0	4.0	
	Rural	3.0	12.5	0.1	5.1	4.4	0.4	1.6	0.7	0.9	4.2	0	33.1	
	Sub-total	3.3	4.0	2.3	7.5	0.7	0	3.9	0	33.0	1.6	0	56.3	
	(2) Industrial water	0	15.4	0	0	0	0	0	0	0	0	142.3	0	157.7
(3) Irrigation water	1.9	0.4	8.0	3.2	2.5	0	0	0	0	0	12.0	0	28.0	
(4) Maintenance flow	8.2	27.9	10.4	15.8	7.6	0.4	5.5	0.7	0.7	33.9	160.1	0	275.1	
1991	(1) Domestic water	1.7	12.7	0	6.4	7.8	0.8	1.9	0.9	1.5	4.3	0	38.3	
	Urban	3.1	0.1	0.2	0.7	0.2	0	1.0	0	0.1	1.7	0	7.1	
	Rural	4.8	12.8	0.2	7.1	8.0	0.8	2.9	0.9	1.6	6.0	0	45.4	
	Sub-total	6.6	4.0	2.3	16.0	0.7	0	3.9	0	35.8	1.6	0	70.9	
	(2) Industrial water	96.1	15.4	0	0	0	0	0	0	0	153.4	0	231.6	
(3) Irrigation water	1.9	0.4	8.0	3.2	2.5	0	0	0	0	12.0	0	28.0		
(4) Maintenance flow	109.4	28.2	10.5	26.3	11.2	0.8	6.8	0.9	0.9	37.4	173.0	0	375.9	
1996	(1) Domestic water	1.9	17.8	0	11.4	10.9	0.9	2.4	1.0	2.6	6.8	0	56.1	
	Urban	4.6	0.1	0.3	1.0	0.3	0.1	1.5	0	0.2	2.5	0	10.6	
	Rural	6.5	17.9	0.3	12.4	11.2	1.0	3.9	1.0	2.8	9.3	0	66.7	
	Sub-total	6.6	4.0	2.3	19.5	0.7	0	3.9	0	38.5	1.6	0	77.1	
	(2) Industrial water	96.1	15.4	0	0	0	0	0	0	0	153.4	38.9	262.2	
(3) Irrigation water	1.9	0.4	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5		
(4) Maintenance flow	111.1	33.3	10.6	35.1	14.4	1.0	7.8	1.0	41.3	176.3	49.4	444.5		
2001	(1) Domestic water	2.1	23.3	0	18.5	15.2	1.0	2.9	1.1	4.0	9.7	0	78.2	
	Urban	5.8	0.1	0.3	1.2	0.3	0.1	2.0	0	0.2	3.3	0	13.2	
	Rural	7.9	23.4	0.3	19.7	15.5	1.1	4.9	1.1	4.2	13.0	0	91.5	
	Sub-total	6.6	4.0	2.3	27.8	0.7	0	3.9	0	41.3	1.6	0	88.2	
	(2) Industrial water	96.1	15.4	0	0	0	0	0	0	0	153.4	38.9	262.2	
(3) Irrigation water	1.9	0.4	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5		
(4) Maintenance flow	112.5	38.8	10.6	50.7	18.7	1.1	8.8	1.1	45.5	180.0	49.4	480.4		

Table 8 10-DAY DISCHARGE AT BALANCE POINT (1/2)

		(Unit: m ³ /s)					
Year	Month	Zone 1 (526.0)	Zone 1-1 (51.2)	Zone 2 (30.1)	Zone 3 (123.0)	Zone 4 (301.0)	
1979	May	1 - 10	5.08	0.12	0.07	0.30	0.73
		11 - 20	2.52	0.30	0.18	0.72	1.78
		21 - 31	0.54	0.10	0.06	0.24	0.58
	Jun.	1 - 10	0.72	0.20	0.12	0.47	1.16
		11 - 20	1.81	0.81	0.47	1.94	4.74
		21 - 30	1.07	0.09	0.05	0.22	0.53
	Jul.	1 - 10	0.36	0.04	0.02	0.08	0.21
		11 - 20	0.32	0.00	0.00	0.01	0.02
		21 - 31	0.66	0.15	0.09	0.36	0.88
	Aug.	1 - 10	1.47	0.08	0.04	0.18	0.44
		11 - 20	0.51	0.17	0.10	0.41	0.99
		21 - 31	0.38	0.05	0.03	0.13	0.32
	Sep.	1 - 10	0.54	0.25	0.15	0.61	1.49
		11 - 20	0.68	0.59	0.35	1.42	3.48
		21 - 30	3.72	1.14	0.67	2.73	6.69
	Oct.	1 - 10	11.61	0.93	0.55	2.24	5.48
		11 - 20	0.74	0.18	0.11	0.44	1.07
		21 - 31	0.32	0.12	0.07	0.30	0.72
	Nov.	1 - 10	0.21	0.20	0.12	0.48	1.17
		11 - 20	0.20	0.10	0.06	0.23	0.56
		21 - 30	0.16	0.07	0.04	0.16	0.39
	Dec.	1 - 10	0.15	0.08	0.05	0.20	0.49
		11 - 20	0.17	0.20	0.12	0.47	1.16
		21 - 31	0.17	0.05	0.03	0.13	0.32
1980	Jan.	1 - 10	0.15	0.04	0.03	0.11	0.26
		11 - 20	0.10	0.03	0.02	0.07	0.18
		21 - 31	0.10	0.02	0.01	0.06	0.14
	Feb.	1 - 10	0.09	0.00	0.00	0.00	0.00
		11 - 20	0.07	0.03	0.02	0.08	0.20
		21 - 29	0.02	0.60	0.35	1.45	3.55
	Mar.	1 - 10	0.00	0.04	0.03	0.11	0.26
		11 - 20	0.41	0.04	0.02	0.10	0.24
		21 - 31	1.09	0.12	0.07	0.29	0.70
	Apr.	1 - 10	0.30	0.05	0.03	0.11	0.27
		11 - 20	0.42	0.10	0.06	0.25	0.60
		21 - 20	0.41	0.10	0.06	0.23	0.56

Note : (1) Balancing Point : Zone 1 : Khlong Luang potential damsite

Zone 1-1 : Ban Bung dam

Zone 2 : Estuary of the Khlong Yai Cheng river

Zone 3 : Bang Phra dam

Zone 4 : Estuary of the Khlong Bang Lamung river

(2) Figures in parentheses show the catchment area

Table 8 10-DAY DISCHARGE AT BALANCE POINT (2/2)

(Unit: m³/s)

Year	Month	Zone 5 (37.9)	Zone 6 (119.0)	Zone 8 (31.8)	Zone 9 (120.0)	Zone 10 (1,143.0)	Zone 10-1 (158.0)	
1979	May	1 - 10	0.09	0.29	0.08	0.29	6.59	0.39
		11 - 20	0.22	0.70	0.19	0.71	4.45	0.93
		21 - 31	0.07	0.23	0.06	0.23	1.82	0.30
	Jun.	1 - 10	0.15	0.46	0.12	0.46	3.02	0.61
		11 - 20	0.60	1.87	0.50	1.89	15.34	2.49
		21 - 30	0.07	0.21	0.06	0.21	3.00	0.28
	Jul.	1 - 10	0.03	0.08	0.02	0.08	2.25	0.11
		11 - 20	0.00	0.01	0.00	0.01	2.60	0.01
		21 - 31	0.11	0.35	0.09	0.35	7.22	0.46
	Aug.	1 - 10	0.06	0.18	0.05	0.18	2.24	0.23
		11 - 20	0.13	0.39	0.10	0.40	1.93	0.52
		21 - 31	0.04	0.13	0.03	0.13	1.08	0.17
	Sep.	1 - 10	0.19	0.59	0.16	0.59	5.50	0.78
		11 - 20	0.44	1.37	0.37	1.39	13.17	1.82
		21 - 30	0.84	2.65	0.71	2.67	21.79	3.51
	Oct.	1 - 10	0.69	2.17	0.58	2.19	40.34	2.88
		11 - 20	0.13	0.42	0.11	0.42	5.35	0.56
		21 - 31	0.09	0.29	0.08	0.29	7.04	0.38
	Nov.	1 - 10	0.15	0.46	0.12	0.47	3.61	0.61
		11 - 20	0.07	0.22	0.06	0.22	1.82	0.29
		21 - 30	0.05	0.16	0.04	0.16	1.32	0.21
	Dec.	1 - 10	0.06	0.19	0.05	0.19	1.63	0.26
		11 - 20	0.15	0.46	0.12	0.46	1.79	0.61
		21 - 31	0.04	0.13	0.03	0.13	1.07	0.17
1980	Jan.	1 - 10	0.03	0.10	0.03	0.10	0.73	0.14
		11 - 20	0.02	0.07	0.02	0.07	0.57	0.09
		21 - 31	0.02	0.06	0.02	0.06	0.49	0.08
	Feb.	1 - 10	0.00	0.00	0.00	0.00	0.59	0.00
		11 - 20	0.02	0.08	0.02	0.08	0.63	0.10
		21 - 29	0.45	1.40	0.37	1.41	5.66	1.86
	Mar.	1 - 10	0.03	0.10	0.03	0.10	0.83	0.14
		11 - 20	0.03	0.09	0.03	0.09	1.08	0.12
		21 - 31	0.09	0.28	0.07	0.28	4.33	0.37
	Apr.	1 - 10	0.03	0.11	0.03	0.11	0.91	0.14
		11 - 20	0.08	0.24	0.06	0.24	2.30	0.31
		21 - 30	0.07	0.22	0.06	0.22	2.15	0.29

Note ; (1) Balancing Point : Zone 5 : Map Prachan dam
 Zone 6 : Estuary of the Huai Yai river
 Zone 8 : Estuary of the Khlong Phayun river
 Zone 9 : Estuary of the Khlong Huai Yai river
 Zone 10 : Ban Khai Weir
 Zone 10-1 : Khlong Thap Ma potential dam

(2) Figures in parentheses show the catchment area

Table 9 LARGE SCALE WATER WORKS

Water Works	Served Zone	Plant Capacity (m ³ /day)	Water Resources
1. Phanat Nikhom	1	2,160	Sarika Stream
2. Ban Bung	1-1	480	Ma Fai Stream & Chang Nam pondage
3. Chon Buri	2, 3, 4	48,000	Bang Phra Reservoir
4. Na Klua-Pattaya	5	25,920	Map Prachan Reservoir
5. Rayong	10	7,680	Ban Khai Weir & Si Phet Lake

Table 10 RURAL WATER WORKS

Water Works	Served Zone	Plant Capacity (m ³ /day)	Water Resources
1. Nong Kakha	1	240	Pondage
2. Phan Thong	1	720	Drainage
3. Tha Bun Mi	1	720	Drainage
4. Ban Soet	1	480	Stream
5. Ao Udom	4	1,200	Pondage
6. Ban Chang	8	1,200	Pondage
7. Ban Khai	10	480	Dok Krai Reservoir
8. Pluak Daeng	10	240	Stream

Table 11 GROUNDWATER USE

(Unit: $10^6 \text{ m}^3/\text{yr}$)

Zone No.	Tube-well			Shallow dug-well			Total
	Industrial	Rural	Sub-total	Municipal	Rural	Sub-total	
1	0.277 ^{/1}	0.013	0.290	0.087	6.404	6.491	6.781
2	-	0.043	0.043	0.363	0.363	2.153	2.196
3	-	-	-	-	2.850	2.850	2.850
4	-	-	-	0.103	1.318	1.421	1.421
5	-	0.047	0.047	0.134	0.349	0.483	0.530
6	0.016 ^{/2}	0.398	0.414	0.141	0.275	0.416	0.830
7	-	0.006	0.006	-	2.414	2.414	2.420
8	-	-	-	-	0.408	0.408	0.408
9	0.179 ^{/3}	-	0.179	-	0.549	0.549	0.728
10	0.077	0.115	0.192	0.249	3.876	4.125	4.317
Total	0.549	0.622	1.171	1.077	20.233	21.310	22.481

^{/1} Sugar factory^{/2} Mineral water production^{/3} Gas industry

Table 12 AVAILABLE LOCAL WATER RESOURCES

Zone No.	Available Local Water Resources	Amount (MCM/yr)
1	Phanat Nikhom Water Works	0.7
1	Nong Kakha Water Works	0.1
1	Phan Thong Water Works	0.2
1	Ban Soet Water Works	0.1
1-1	Groundwater for industrial use	0.3
1-1	Ban Bung Water Works	0.1
8	Ban Chang Water Works	0.4
9	Ground water for industrial use	0.2

Table 13 FUTURE WATER DEMAND AND DEFICIT (1/13)
(Zone 1)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	1.2	1.7	1.9	2.1
Rural	1.8	3.1	4.6	5.8
Sub-total	3.0	4.8	6.5	7.9
2. Industrial Water	(3.3)	(6.6)	(6.6)	(6.6)
3. Irrigation Water	0	60.1	60.1	60.1
4. Maintenance Flow	1.9	1.9	1.9	1.9
Total ^{/1}	<u>4.9</u>	<u>66.8</u>	<u>68.5</u>	<u>69.9</u>
Available Local Water	1.1	1.1	1.1	1.1
<u>WITHDRAWAL</u>	<u>3.8</u>	<u>65.7</u>	<u>67.4</u>	<u>68.8</u>
Available River Water	3.5	15.4	16.1	16.3
<u>DEFICIT</u> (without Existing Reservoir)	<u>0.3</u>	<u>50.3</u>	<u>51.3</u>	<u>52.5</u>
Water Supply Capacity	0	0	0	0
<u>BALANCE</u>	<u>0.3</u>	<u>50.3</u>	<u>51.3</u>	<u>52.5</u>

Note : (1) Available Local Water

	1986	1991	1996	2001
Water Works	1.1	1.1	1.1	1.1

(2) Supply of industrial water has been dependent on Bang Phra reservoir in Zone 3.

/1 : Not including industrial water demand

Table 13 FUTURE WATER DEMAND AND DEFICIT (2/13)
(Zone 1-1)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	0.2	0.3	0.4	0.4
Rural	0	0	0	0
Sub-total	0.2	0.3	0.4	0.4
2. Industrial Water	4.3	4.3	4.3	4.3
3. Irrigation Water	0	0	0	0
4. Maintenance Flow	0.4	0.4	0.4	0.4
Total	<u>4.9</u>	<u>5.0</u>	<u>5.1</u>	<u>5.1</u>
Available Local Water	0.4	0.4	0.4	0.4
<u>WITHDRAWAL</u>	<u>4.5</u>	<u>4.6</u>	<u>4.7</u>	<u>4.7</u>
Available River Water	0	0	0	0
<u>DEFICIT (without Existing Reservoir)</u>	<u>4.5</u>	<u>4.6</u>	<u>4.7</u>	<u>4.7</u>
Water Supply Capacity of Ban Bung Reservoir	2.2	2.2	2.2	2.2
<u>BALANCE</u>	<u>2.3</u>	<u>2.4</u>	<u>2.5</u>	<u>2.5</u>

Note : Available Local Water	1986	1991	1996	2001
Water Works	0.1	0.1	0.1	0.1
Groundwater	0.3	0.3	0.3	0.3
Total	0.4	0.4	0.4	0.4

Table 13 FUTURE WATER DEMAND AND DEFICIT (3/13)
(Zone 2)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	12.4	12.7	17.8	23.3
Rural	0.1	0.1	0.1	0.1
Sub-total	12.5	12.8	17.9	23.4
2. Industrial Water	0	0	0	0
3. Irrigation Water	(15.4)	(15.4)	(15.4)	(15.4)
4. Maintenance Flow				
Total ^{/1}	<u>12.5</u>	<u>12.8</u>	<u>17.9</u>	<u>23.4</u>
Available Local Water	0	0	0	0
<u>WITHDRAWAL</u>	<u>12.5</u>	<u>12.8</u>	<u>17.9</u>	<u>23.4</u>
Available River Water	0	0	0	0
<u>DEFICIT (without Existing Reservoir)</u>	<u>12.5</u>	<u>12.8</u>	<u>17.9</u>	<u>23.4</u>
Water Supply Capacity	0	0	0	0
<u>BALANCE</u>	<u>12.5</u>	<u>12.8</u>	<u>17.9</u>	<u>23.4</u>

Note ; (1) Supply of irrigation water has been dependent on Bang Phra reservoir in Zone 3.

/1 : Not including irrigation water

Table 13 FUTURE WATER DEMAND AND DEFICIT (4/13)
(Zone 3)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	0	0	0	0
Rural	0.1	0.2	0.3	0.3
Sub-total	0.1	0.2	0.3	0.3
2. Industrial Water	7.7	11.0	11.0	11.0
3. Irrigation Water	(15.4)	(15.4)	(15.4)	(15.4)
4. Maintenance Flow	8.0	8.0	8.0	8.0
Total	<u>31.2</u>	<u>34.6</u>	<u>34.7</u>	<u>34.7</u>
Available Local Water	0	0	0	0
<u>WITHDRAWAL</u>	<u>31.2</u>	<u>34.6</u>	<u>34.7</u>	<u>34.7</u>
Available River Water	0	0	0	0
<u>DEFICIT (without Existing Reservoir)</u>	<u>31.2</u>	<u>34.6</u>	<u>34.7</u>	<u>34.7</u>
Water Supply Capacity of Bang Phra Reservoir	34.7	34.7	34.7	34.7
<u>BALANCE</u>	<u>-3.5</u>	<u>-0.1</u>	<u>0.0</u>	<u>0.0</u>

Note : (1) The irrigation water demand of 15.4 MCM has been committed by Zone 2.

(2) The industrial water demand includes the following commitment.

	<u>1986</u>	<u>1991</u>	<u>1996</u>	<u>2001</u>
Zone 1	3.3	6.6	6.6	6.6
Zone 4	2.1	2.1	2.1	2.1

Table 13 FUTURE WATER DEMAND AND DEFICIT (5/13)
(Zone 4)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	4.8	6.4	11.4	18.5
Rural	0.3	0.7	1.0	1.2
Sub-total	5.1	7.1	12.4	19.7
2. Industrial Water	7.5	16.0	19.5	27.8
3. Irrigation Water	0	0	0	0
4. Maintenance Flow	3.2	3.2	3.2	3.2
Total ^{/1}	<u>13.7</u>	<u>24.2</u>	<u>33.0</u>	<u>48.6</u>
Available Local Water	0	0	0	0
<u>WITHDRAWAL</u>	<u>13.7</u>	<u>24.2</u>	<u>33.0</u>	<u>48.6</u>
Available River Water	8.8	14.0	16.8	19.6
<u>DEFICIT (without Existing Reservoir)</u>	<u>4.9</u>	<u>10.2</u>	<u>16.2</u>	<u>29.0</u>
Water Supply Capacity of Nong Kho Reservoir	12.6	12.6	12.6	12.6
<u>BALANCE</u>	<u>-7.7</u>	<u>-2.4</u>	<u>3.6</u>	<u>16.4</u>

Note : (1) Out of total industrial water demand, 2.1 MCM/yr
has been dependent on Bang Phra reservoir in Zone 3

/1 : Not including 2.1 MCM/yr of industrial water demand

Table 13 FUTURE WATER DEMAND AND DEFICIT (6/13)
(Zone 5)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	4.3	7.8	10.9	15.2
Rural	0.1	0.2	0.3	0.3
Sub-total	4.4	8.0	11.2	15.5
2. Industrial Water	0.7	0.7	0.7	0.7
3. Irrigation Water	0	0	0	0
4. Maintenance Flow	2.5	2.5	2.5	2.5
Total	<u>7.6</u>	<u>11.2</u>	<u>14.4</u>	<u>18.7</u>
Available Local Water	0	0	0	0
<u>WITHDRAWAL</u>	<u>7.6</u>	<u>11.2</u>	<u>14.4</u>	<u>18.7</u>
Available River Water	0	0	0	0
<u>DEFICIT (without Existing Reservoir)</u>	<u>7.6</u>	<u>11.2</u>	<u>14.4</u>	<u>18.7</u>
Water Supply Capacity of Map Prachan Reservoir	9.2	9.2	9.2	9.2
<u>BALANCE</u>	<u>-1.6</u>	<u>2.0</u>	<u>5.2</u>	<u>9.5</u>

Table 13 FUTURE WATER DEMAND AND DEFICIT (7/13)
(Zone 6)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	0.4	0.8	0.9	1.0
Rural	0	0	0.1	0.1
Sub-total	0.4	0.8	1.0	1.1
2. Industrial Water	0	0	0	0
3. Irrigation Water	0	0	0	0
4. Maintenance Flow	0	0	0	0
Total	<u>0.4</u>	<u>0.8</u>	<u>1.0</u>	<u>1.1</u>
Available Local Water	0	0	0	0
<u>WITHDRAWAL</u>	<u>0.4</u>	<u>0.8</u>	<u>1.0</u>	<u>1.1</u>
Available River Water	0.4	0.8	0.9	1.0
<u>DEFICIT (without Existing Reservoir)</u>	<u>0</u>	<u>0</u>	<u>0.1</u>	<u>0.1</u>
Water Supply Capacity	0	0	0	0
<u>BALANCE</u>	<u>0</u>	<u>0</u>	<u>0.1</u>	<u>0.1</u>

Table 13 FUTURE WATER DEMAND AND DEFICIT (8/13)
(Zone 7)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	1.0	1.9	2.4	2.9
Rural	0.6	1.0	1.5	2.0
Sub-total	1.6	2.9	3.9	4.9
2. Industrial Water	3.9	3.9	3.9	3.9
3. Irrigation Water	0	0	0	0
4. Maintenance Flow	0	0	0	0
Total	<u>5.5</u>	<u>6.8</u>	<u>7.8</u>	<u>8.8</u>
Available Local Water	0	0	0	0
<u>WITHDRAWAL</u>	<u>5.5</u>	<u>6.8</u>	<u>7.8</u>	<u>8.8</u>
Available River Water	0	0	0	0
<u>DEFICIT (without Existing Reservoir)</u>	<u>5.5</u>	<u>6.8</u>	<u>7.8</u>	<u>8.8</u>
Water Supply Capacity	0	0	0	0
<u>BALANCE</u>	<u>5.5</u>	<u>6.8</u>	<u>7.8</u>	<u>8.8</u>

Table 13 FUTURE WATER DEMAND AND DEFICIT (9/13)
(Zone 8)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1.. Domestic Water				
Urban	0.7	0.9	1.0	1.1
Rural	0	0	0	0
Sub-total	0.7	0.9	1.0	1.1
2. Industrial Water	0	0	0	0
3. Irrigation Water	0	0	0	0
4. Maintenance Flow	0	0	0	0
Total	<u>0.7</u>	<u>0.9</u>	<u>1.0</u>	<u>1.1</u>
Available Local Water	0.4	0.4	0.4	0.4
<u>WITHDRAWAL</u>	<u>0.3</u>	<u>0.5</u>	<u>0.6</u>	<u>0.7</u>
Available River Water	0	0	0	0
<u>DEFICIT (without Existing Reservoir)</u>	<u>0.3</u>	<u>0.5</u>	<u>0.6</u>	<u>0.7</u>
Water Supply Capacity	0	0	0	0
<u>BALANCE</u>	<u>0.3</u>	<u>0.5</u>	<u>0.6</u>	<u>0.7</u>

Table 13 FUTURE WATER DEMAND AND DEFICIT (10/13)
(Zone 9)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	0.8	1.5	2.6	4.0
Rural	0.1	0.1	0.2	0.2
Sub-total	0.9	1.6	2.8	4.2
2. Industrial Water	33.0	35.8	38.5	41.3
3. Irrigation Water	0	0	0	0
4. Maintenance Flow	0	0	0	0
Total	<u>33.9</u>	<u>37.4</u>	<u>41.3</u>	<u>45.5</u>
Available Local Water	0.2	0.2	0.2	0.2
<u>WITHDRAWAL</u>	<u>33.7</u>	<u>37.2</u>	<u>41.1</u>	<u>45.3</u>
Available River Water	0	0	0	0
<u>DEFICIT (without Existing Reservoir)</u>	<u>33.7</u>	<u>37.2</u>	<u>41.1</u>	<u>45.3</u>
Water Supply Capacity	0	0	0	0
<u>BALANCE</u>	<u>33.7</u>	<u>37.2</u>	<u>41.1</u>	<u>45.3</u>

Table 13 FUTURE WATER DEMAND AND DEFICIT (11/13)
(Zone 10)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	3.3	4.3	6.8	9.7
Rural	0.9	1.7	2.5	3.3
Sub-total	4.2	6.0	9.3	13.0
2. Industrial Water	(1.6)	(1.6)	(1.6)	(1.6)
3. Irrigation Water	140.9	140.9	140.9	140.9
4. Maintenance Flow	12.0	12.0	12.0	12.0
Total	<u>158.7</u>	<u>160.5</u>	<u>163.8</u>	<u>167.5</u>
Available Local Water	0	0	0	0
<u>WITHDRAWAL</u>	<u>158.7</u>	<u>160.5</u>	<u>163.8</u>	<u>167.5</u>
Available River Water	38.2	38.6	39.1	39.7
<u>DEFICIT (without Existing Reservoir)</u>	<u>120.5</u>	<u>121.9</u>	<u>124.7</u>	<u>127.8</u>
Water Supply Capacity of Dok Krai & Nong Pla Lai Reservoir	159.3	159.3	159.3	159.3
<u>BALANCE</u>	<u>-38.8</u>	<u>-37.4</u>	<u>-34.6</u>	<u>-31.5</u>

Note ; (1) Industrial water demand has been dependent on
Dok Krai reservoir

Table 13 FUTURE WATER DEMAND AND DEFICIT (12/13)
(Zone 10-1)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	-	-	0	0
Rural	-	-	0	0
Sub-total	-	-	0	0
2. Industrial Water	-	-	0	0
3. Irrigation Water	-	-	30.6	30.6
4. Maintenance Flow	-	-	10.5	10.5
Total	<u>-</u>	<u>-</u>	<u>41.1</u>	<u>41.1</u>
Available Local Water	-	-	0	0
<u>WITHDRAWAL</u>	<u>-</u>	<u>-</u>	<u>41.1</u>	<u>41.1</u>
Available River Water	-	-	12.3	12.3
<u>DEFICIT (without Existing Reservoir)</u>	<u>-</u>	<u>-</u>	<u>28.8</u>	<u>28.8</u>
Water Supply Capacity	-	-	0	0
<u>BALANCE</u>	<u>-</u>	<u>-</u>	<u>28.8</u>	<u>28.8</u>

Table 13 FUTURE WATER DEMAND AND DEFICIT (13/13)
(STUDY AREA)

	(Unit: MCM/yr)			
Year	1986	1991	1996	2001
<u>DEMANDS</u>				
1. Domestic Water				
Urban	29.1	38.3	56.1	78.2
Rural	4.0	7.1	10.6	13.3
Sub-total	33.1	45.4	66.7	91.5
2. Industrial Water	56.6	71.2	77.4	88.5
3. Irrigation Water	156.3	216.4	247.0	247.0
4. Maintenance Flow	28.0	28.0	38.5	38.5
Total	<u>274.0</u>	<u>361.0</u>	<u>429.6</u>	<u>465.5</u>
Available Local Water	2.1	2.1	2.1	2.1
<u>WITHDRAWAL</u>	<u>271.9</u>	<u>358.9</u>	<u>427.5</u>	<u>463.4</u>
Available River Water	50.9	68.8	85.2	88.9
<u>DEFICIT (without Existing Reservoir)</u>	<u>221.0</u>	<u>290.1</u>	<u>342.3</u>	<u>374.5</u>
Water Supply Capacity	218.0	218.0	218.0	218.0
<u>BALANCE</u>	<u>3.0</u>	<u>72.1</u>	<u>124.3</u>	<u>156.5</u>

Table 14 WATER BALANCE IN ZONE 1 (1/4)

(Unit: 10^6 m^3)

Year 1986	Demand			Available Local Water				Water Deficit		
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water			
	DIID	IRD	MF	GW	LRW	NW	RW	(+)	WD	(-)
May	1 - 10	0.08	-	0.05	-	0.03	0.10	4.38		4.28
	11 - 20	0.08	-	0.05	-	0.03	0.10	2.17		2.07
	21 - 31	0.10	-	0.06	-	0.03	0.13	0.51		0.38
	Total	0.26	-	0.16	-	0.09	0.33	7.06		6.73
June	1 - 10	0.08	-	0.05	-	0.03	0.10	0.61		0.51
	11 - 20	0.08	-	0.05	-	0.03	0.10	1.56		1.46
	21 - 30	0.08	-	0.05	-	0.03	0.10	0.92		0.82
	Total	0.24	-	0.15	-	0.09	0.30	3.09		2.79
July	1 - 10	0.08	-	0.05	-	0.03	0.10	0.31		0.21
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.27		0.17
	21 - 31	0.10	-	0.06	-	0.03	0.13	0.64		0.51
	Total	0.26	-	0.16	-	0.09	0.33	1.22		0.89
Aug.	1 - 10	0.08	-	0.05	-	0.03	0.10	1.27		1.17
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.44		0.34
	21 - 31	0.10	-	0.06	-	0.03	0.13	0.36		0.23
	Total	0.26	-	0.16	-	0.09	0.33	2.07		1.74
Sep.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.47		0.37
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.59		0.49
	21 - 30	0.08	-	0.15	-	0.03	0.10	3.21		3.11
	Total	0.24	-	0.15	-	0.09	0.30	4.27		3.97
Oct.	1 - 10	0.08	-	0.05	-	0.03	0.10	10.02		9.92
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.64		0.54
	21 - 31	0.10	-	0.06	-	0.03	0.13	0.30		0.17
	Total	0.26	-	0.16	-	0.09	0.33	10.96		10.63
Nov.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.18		0.08
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.16		0.06
	21 - 30	0.08	-	0.05	-	0.03	0.10	0.14		0.04
	Total	0.24	-	0.15	-	0.09	0.30	0.48		0.18
Dec.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.13		0.03
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.15		0.05
	21 - 31	0.10	-	0.06	-	0.03	0.13	0.17		0.04
	Total	0.26	-	0.16	-	0.09	0.33	0.45		0.12
Jan.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.13		0.03
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.08	0.02	
	21 - 31	0.10	-	0.06	-	0.03	0.13	0.10	0.03	
	Total	0.26	-	0.16	-	0.09	0.33	0.31	0.05	0.03
Feb.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.07	0.03	
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.06	0.04	
	21 - 28	0.06	-	0.04	-	0.03	0.07	0.01	0.06	
	Total	0.22	-	0.14	-	0.09	0.27	0.14	0.13	
Mar.	1 - 10	0.08	-	0.05	-	0.03	0.10	0	0.10	
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.35		0.25
	21 - 31	0.10	-	0.06	-	0.03	0.13	1.03		0.90
	Total	0.26	-	0.16	-	0.09	0.33	1.38	0.10	1.15
Apr.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.26		0.16
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.36		0.26
	21 - 30	0.08	-	0.05	-	0.03	0.10	0.36		0.26
	Total	0.24	-	0.15	-	0.09	0.30	0.98		0.68
Annual	3.0	-	1.9	-	1.1	3.8	32.4	0.3	28.9	

Note : (1) Industrial water demand of 3.3 MCM/yr is excluded, for it depends on the Bang Phra reservoir.

(2) The quantity of Local River is that of water works.

Table 14 WATER BALANCE IN ZONE 1 (2/4)

ZONE 1		(Unit: $10^6 m^3$)									
Year	1991	Demand			Available Local Water				Water Deficit		
		D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD	(-)
May	1 - 10	0.13	0	0.05	-	0.03	0.15	4.38			4.23
	11 - 20	0.13	0	0.05	-	0.03	0.15	2.17			2.02
	21 - 31	0.15	0	0.06	-	0.03	0.18	0.51			0.33
	Total	0.41	0	0.16	-	0.09	0.48	7.06			6.58
June	1 - 10	0.13	0.04	0.05	-	0.03	0.19	6.61			0.42
	11 - 20	0.13	0.07	0.05	-	0.03	0.22	1.56			1.34
	21 - 30	0.13	0.49	0.05	-	0.03	0.64	0.92			0.28
	Total	0.39	0.60	0.15	-	0.09	1.05	3.09			2.02
July	1 - 10	0.13	1.10	9.05	-	0.03	1.25	0.31	0.94		
	11 - 20	0.13	3.20	0.05	-	0.03	3.35	0.27	3.08		
	21 - 31	0.15	3.44	0.06	-	0.03	3.62	0.64	2.98		
	Total	0.41	7.74	0.16	-	0.09	8.22	1.22	7.00		
Aug.	1 - 10	0.13	4.43	0.05	-	0.03	4.58	1.27	3.31		
	11 - 20	0.13	6.66	0.05	-	0.03	6.81	0.44	6.37		
	21 - 31	0.15	1.56	0.06	-	0.03	1.74	0.36	1.38		
	Total	0.41	12.65	0.16	-	0.09	13.13	2.07	11.06		
Sep.	1 - 10	0.13	3.00	0.05	-	0.03	3.15	0.47	2.68		
	11 - 20	0.13	2.27	0.05	-	0.03	2.42	0.59	1.83		
	21 - 30	0.13	0	0.05	-	0.03	0.15	3.21			3.06
	Total	0.39	5.27	0.15	-	0.09	5.72	4.27	4.51		3.06
Oct.	1 - 10	0.13	5.08	0.05	-	0.03	5.23	10.02			4.79
	11 - 20	0.13	4.06	0.05	-	0.03	4.21	0.64	3.57		
	21 - 31	0.15	3.08	0.06	-	0.03	3.26	0.30	2.96		
	Total	0.41	12.22	0.16	-	0.09	12.70	10.96	6.53		4.79
Nov.	1 - 10	0.13	1.75	0.05	-	0.03	1.90	0.18	1.72		
	11 - 20	0.13	0.89	0.05	-	0.03	1.04	0.16	0.88		
	21 - 30	0.13	1.06	0.05	-	0.03	1.21	0.14	1.07		
	Total	0.39	3.70	0.15	-	0.09	4.15	0.48	3.67		
Dec.	1 - 10	0.13	1.26	0.05	-	0.03	1.41	0.13	1.28		
	11 - 20	0.13	1.30	0.05	-	0.03	1.45	0.15	1.30		
	21 - 31	0.15	1.52	0.06	-	0.03	1.70	0.17	1.53		
	Total	0.41	4.08	0.16	-	0.09	4.56	0.45	4.11		
Jan.	1 - 10	0.13	1.71	0.05	-	0.03	1.86	0.13	1.73		
	11 - 20	0.13	1.91	0.05	-	0.03	2.06	0.08	1.98		
	21 - 31	0.15	2.23	0.06	-	0.03	2.41	0.10	2.31		
	Total	0.41	5.85	0.16	-	0.09	6.33	0.31	6.02		
Feb.	1 - 10	0.13	2.27	0.05	-	0.03	2.42	0.07	2.35		
	11 - 20	0.13	1.99	0.05	-	0.03	2.14	0.06	2.08		
	21 - 28	0.12	0.91	0.05	-	0.03	1.05	0.01	1.04		
	Total	0.38	5.17	0.15	-	0.09	5.61	0.14	5.47		
Mar.	1 - 10	0.13	1.30	0.05	-	0.03	1.45	0	1.45		
	11 - 20	0.13	0.45	0.05	-	0.03	0.60	0.35	0.25		
	21 - 31	0.15	0.53	0.06	-	0.03	0.71	1.03			0.32
	Total	0.41	2.28	0.16	-	0.09	2.76	1.38	1.70		0.32
Apr.	1 - 10	0.13	0.41	0.05	-	0.03	0.56	0.26	0.30		
	11 - 20	0.13	0.15	0.05	-	0.03	0.30	0.36			0.06
	21 - 30	0.13	0.07	0.05	-	0.03	0.22	0.36			0.14
	Total	0.39	0.63	0.15	-	0.09	1.08	0.98	0.30		0.20
Annual	4.8	60.1	1.9	-	1.1	65.7	32.4	50.3		17.0	

Note: (1) Industrial water demand of 6.6 MCM/yr is excluded, for it depends on the Bang Phra reservoir.
 (2) The quantity of Local River consists of water works for domestic use and tributary run-off for irrigation use.

Table 14 WATER BALANCE IN ZONE 1 (3/4)

ZONE 1		(Unit: 10 ⁶ m ³)								
Year		Demand			Available Local Water			Water Deficit		
		D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD
1996										
May	1 - 10	0.18	0	0.05	-	0.03	0.20	4.38		4.18
	11 - 20	0.18	0	0.05	-	0.03	0.20	2.17		1.97
	21 - 31	0.19	0	0.06	-	0.03	0.22	0.51		0.29
	Total	0.55	0	0.16	-	0.09	0.62	7.06		6.44
June	1 - 10	0.18	0.04	0.05	-	0.03	0.24	0.61		0.37
	11 - 20	0.18	0.07	0.05	-	0.03	0.27	1.56		1.29
	21 - 30	0.18	0.49	0.05	-	0.03	0.69	0.92		0.23
	Total	0.54	0.60	0.16	-	0.09	1.20	3.09		1.89
July	1 - 10	0.18	1.10	0.05	-	0.03	1.30	0.31	0.99	
	11 - 20	0.18	3.20	0.05	-	0.03	3.40	0.27	3.13	
	21 - 31	0.19	3.44	0.06	-	0.03	3.66	0.64	3.02	
	Total	0.55	7.74	0.16	-	0.09	8.36	1.22	7.14	
Aug.	1 - 10	0.18	4.43	0.05	-	0.03	4.63	1.27	3.36	
	11 - 20	0.18	6.66	0.05	-	0.03	6.86	0.44	6.42	
	21 - 31	0.19	1.56	0.06	-	0.03	1.78	0.36	1.42	
	Total	0.55	12.65	0.16	-	0.09	13.27	2.07	11.20	
Sep.	1 - 10	0.18	3.00	0.05	-	0.03	3.20	0.47	2.73	
	11 - 20	0.18	2.27	0.05	-	0.03	2.47	0.59	1.88	
	21 - 30	0.18	0.00	0.05	-	0.03	0.20	3.21		3.01
	Total	0.54	5.27	0.16	-	0.09	5.87	4.27	4.61	3.01
Oct.	1 - 10	0.18	5.08	0.05	-	0.03	5.28	10.02		4.74
	11 - 20	0.18	4.06	0.05	-	0.03	4.26	0.64	3.62	
	21 - 31	0.19	3.08	0.06	-	0.03	3.30	0.30	3.00	
	Total	0.55	12.22	0.16	-	0.09	12.84	10.96	6.62	4.74
Nov.	1 - 10	0.18	1.75	0.05	-	0.03	1.95	0.18	1.77	
	11 - 20	0.18	0.89	0.05	-	0.03	1.09	0.16	0.93	
	21 - 30	0.18	1.06	0.05	-	0.03	1.26	0.14	1.12	
	Total	0.54	3.70	0.16	-	0.09	4.30	0.48	3.82	
Dec.	1 - 10	0.18	1.26	0.05	-	0.03	1.46	0.13	1.33	
	11 - 20	0.18	1.30	0.05	-	0.03	1.50	0.15	1.35	
	21 - 31	0.19	1.52	0.06	-	0.03	1.74	0.17	1.57	
	Total	0.55	4.08	0.16	-	0.09	4.70	0.45	4.25	
Jan.	1 - 10	0.18	1.71	0.05	-	0.03	1.91	0.13	1.78	
	11 - 20	0.18	1.91	0.05	-	0.03	2.11	0.08	2.03	
	21 - 31	0.19	2.23	0.06	-	0.03	2.45	0.10	2.35	
	Total	0.55	5.85	0.16	-	0.09	6.47	0.31	6.16	
Feb.	1 - 10	0.18	2.27	0.05	-	0.03	2.47	0.07	2.40	
	11 - 20	0.18	1.99	0.05	-	0.03	2.19	0.06	2.13	
	21 - 28	0.16	0.91	0.05	-	0.03	1.09	0.01	1.08	
	Total	0.52	5.17	0.15	-	0.09	5.75	0.14	5.61	
Mar.	1 - 10	0.18	1.30	0.05	-	0.03	1.50	0.00	1.50	
	11 - 20	0.18	0.45	0.05	-	0.03	0.65	0.35	0.30	
	21 - 31	0.19	0.53	0.06	-	0.03	0.75	1.03		0.28
	Total	0.55	2.28	0.16	-	0.09	2.90	1.38	1.80	0.28
Apr.	1 - 10	0.18	0.41	0.05	-	0.03	0.61	0.26	0.35	
	11 - 20	0.18	0.15	0.05	-	0.03	0.35	0.36		0.01
	21 - 30	0.18	0.07	0.05	-	0.03	0.27	0.36		0.08
	Total	0.54	0.63	0.16	-	0.09	1.23	0.98	0.35	0.09
Annual	6.5	60.1	1.9	-	1.1	67.4	32.4	51.3	16.3	

Note : (1) Industrial water demand of 6.6 MCM/yr is excluded, for it depends on the Bang Phra reservoir.

(2) The quantity of Local River consists of water works for domestic use and tributary run-off for irrigation use.

Table 14 WATER BALANCE IN ZONE 1 (4/4)

(Unit: 10⁶ m³)

ZONE 1											
Year		Demand			Available Local Water			River Water RW	Water Deficit		
		D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW		(+)	WD	(-)
2001											
May	1 - 10	0.22	0	0.05	-	0.03	0.24	4.38		4.14	
	11 - 20	0.22	0	0.05	-	0.03	0.24	2.17		1.93	
	21 - 31	0.23	0	0.06	-	0.03	0.26	0.51		0.25	
	Total	0.67	0	0.16	-	0.09	0.74	7.06		6.32	
June	1 - 10	0.22	0.04	0.05	-	0.03	0.28	0.61		0.33	
	11 - 20	0.22	0.07	0.05	-	0.03	0.31	1.56		1.25	
	21 - 30	0.22	0.49	0.05	-	0.03	0.73	0.92		0.19	
	Total	0.66	0.60	0.15	-	0.09	1.32	3.09		1.77	
July	1 - 10	0.22	1.10	0.05	-	0.03	1.34	0.31	1.03		
	11 - 20	0.22	3.20	0.05	-	0.03	3.44	0.27	3.17		
	21 - 31	0.23	3.44	0.06	-	0.03	3.70	0.64	3.06		
	Total	0.67	7.74	0.16	-	0.09	8.48	1.22	7.26		
Aug.	1 - 10	0.22	4.43	0.05	-	0.03	4.67	1.27	3.40		
	11 - 20	0.22	6.66	0.05	-	0.03	6.90	0.44	6.46		
	21 - 31	0.23	1.56	0.06	-	0.03	1.82	0.36	1.46		
	Total	0.67	12.65	0.16	-	0.09	13.39	2.07	11.32		
Sep.	1 - 10	0.22	3.00	0.05	-	0.03	3.24	0.47	2.77		
	11 - 20	0.22	2.27	0.05	-	0.03	2.51	0.59	1.92		
	21 - 30	0.22	0.	0.05	-	0.03	0.24	3.21		2.97	
	Total	0.66	5.27	0.15	-	0.09	5.99	4.27	4.69	2.97	
Oct.	1 - 10	0.22	5.08	0.05	-	0.03	5.32	10.02		4.71	
	11 - 20	0.22	4.06	0.05	-	0.03	4.30	0.64	3.66		
	21 - 31	0.23	3.08	0.06	-	0.03	3.34	0.30	3.04		
	Total	0.67	12.22	0.16	-	0.09	12.96	10.96	6.70	4.71	
Nov.	1 - 10	0.22	1.75	0.05	-	0.03	1.99	0.18	1.81		
	11 - 20	0.22	0.89	0.05	-	0.03	1.13	0.16	0.97		
	21 - 30	0.22	1.06	0.05	-	0.03	1.30	0.14	1.16		
	Total	0.66	3.70	0.15	-	0.09	4.42	0.48	3.94		
Dec.	1 - 10	0.22	1.26	0.05	-	0.03	1.50	0.13	1.37		
	11 - 20	0.22	1.30	0.05	-	0.03	1.54	0.15	1.39		
	21 - 31	0.23	1.52	0.06	-	0.03	1.78	0.17	1.61		
	Total	0.67	4.08	0.16	-	0.09	4.82	0.45	4.37		
Jan.	1 - 10	0.22	1.71	0.05	-	0.03	1.95	0.13	1.82		
	11 - 20	0.22	1.91	0.05	-	0.03	2.15	0.08	2.07		
	21 - 31	0.23	2.23	0.06	-	0.03	2.49	0.10	2.39		
	Total	0.67	5.85	0.16	-	0.09	6.59	0.31	6.28		
Feb.	1 - 10	0.22	2.27	0.05	-	0.03	2.51	0.07	2.44		
	11 - 20	0.22	1.99	0.05	-	0.03	2.23	0.06	2.17		
	21 - 28	0.19	0.91	0.05	-	0.03	1.12	0.01	1.11		
	Total	0.63	5.17	0.15	-	0.09	5.86	0.14	5.72		
Mar.	1 - 10	0.22	1.30	0.05	-	0.03	1.54	0	1.54		
	11 - 20	0.22	0.45	0.05	-	0.03	0.69	0.35	0.34		
	21 - 31	0.23	0.53	0.06	-	0.03	0.79	1.03		0.23	
	Total	0.67	2.28	0.16	-	0.09	3.02	1.38	1.88	0.23	
Apr.	1 - 10	0.22	0.41	0.05	-	0.03	0.65	0.26	0.38		
	11 - 20	0.22	0.15	0.05	-	0.03	0.39	0.36	0.04		
	21 - 30	0.22	0.07	0.05	-	0.03	0.31	0.36		0.05	
	Total	0.66	0.63	0.15	-	0.09	1.35	0.98	0.42	0.05	
Annual		7.9	60.1	1.9	-	1.1	68.8	32.4	52.5	16.1	

Note : (1) Industrial water demand of 6.6 MCM/yr is excluded, for it depends on the Bang Phra reservoir.

(2) The quantity of Local River consists of water works for domestic use and tributary run-off for irrigation use.

Table 15 WATER BALANCE IN ZONE 1-1 (1/3)

ZONE 1-1

(Unit: 10⁶ m³)

Year 1986	D & I DID	Demand		Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
		Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			WD	(-)
May	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 31	0.15	-	0.01	0.01	-	0.15	-	0.15	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
June	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 30	0.12	-	0.01	0.01	-	0.12	-	0.12	
	Total	0.36	-	0.03	0.03	-	0.36	-	0.36	
July	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 31	0.15	-	0.01	0.01	-	0.15	-	0.15	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Aug.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 31	0.15	-	0.01	0.01	-	0.15	-	0.15	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Sep.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 30	0.12	-	0.01	0.01	-	0.12	-	0.12	
	Total	0.36	-	0.03	0.03	-	0.36	-	0.36	
Oct.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 31	0.15	-	0.01	0.01	-	0.15	-	0.15	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Nov.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 30	0.12	-	0.01	0.01	-	0.12	-	0.12	
	Total	0.36	-	0.03	0.03	-	0.36	-	0.36	
Dec.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 31	0.15	-	0.01	0.01	-	0.15	-	0.15	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Jan.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 31	0.15	-	0.01	0.01	-	0.15	-	0.15	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Feb.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 28	0.10	-	0.01	0.01	-	0.10	-	0.10	
	Total	0.34	-	0.03	0.03	-	0.34	-	0.34	
Mar.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 31	0.15	-	0.01	0.01	-	0.15	-	0.15	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Apr.	1 - 10	0.12	-	0.01	0.01	-	0.12	-	0.12	
	11 - 20	0.12	-	0.01	0.01	-	0.12	-	0.12	
	21 - 30	0.12	-	0.01	0.01	-	0.12	-	0.12	
	Total	0.36	-	0.03	0.03	-	0.36	-	0.36	
	Annual	4.5	-	0.4	0.3	0.1	4.5	-	4.5	

Table 15 WATER BALANCE IN ZONE 1-1 (2/3)

ZONE 1-1

(Unit: 10⁶ m³)

Year	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			(-)	
1991										
May	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 31	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
June	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
July	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 31	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Aug.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 31	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Sep.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Oct.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 31	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Nov.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Dec.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 31	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Jan.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 31	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Feb.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 28	0.11	-	0.01	0.01	-	0.11	-	0.11	
	Total	0.37	-	0.03	0.03	-	0.37	-	0.37	
Mar.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 31	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Apr.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13	
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13	
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13	
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39	
Annual		4.6	-	0.4	0.3	0.1	4.6	-	4.6	

Table 15 WATER BALANCE IN ZONE 1-1 (3/3)

ZONE 1-1		(Unit: $10^6 m^3$)									
Year 1996, 2001	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			WD (-)		
May	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 31	0.14	-	0.01	0.01	-	0.14	-	0.14		
	Total	0.40	-	0.03	0.03	-	0.40	-	0.40		
June	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13		
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39		
July	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 31	0.14	-	0.01	0.01	-	0.14	-	0.14		
	Total	0.40	-	0.03	0.03	-	0.40	-	0.40		
Aug.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 31	0.14	-	0.01	0.01	-	0.14	-	0.14		
	Total	0.40	-	0.03	0.03	-	0.40	-	0.40		
Sep.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13		
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39		
Oct.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 31	0.14	-	0.01	0.01	-	0.14	-	0.14		
	Total	0.40	-	0.03	0.03	-	0.40	-	0.40		
Nov.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13		
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39		
Dec.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 31	0.14	-	0.01	0.01	-	0.14	-	0.14		
	Total	0.40	-	0.03	0.03	-	0.40	-	0.40		
Jan.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 31	0.14	-	0.01	0.01	-	0.14	-	0.14		
	Total	0.40	-	0.03	0.03	-	0.40	-	0.40		
Feb.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 28	0.10	-	0.01	0.01	-	0.10	-	0.10		
	Total	0.36	-	0.03	0.03	-	0.36	-	0.36		
Mar.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 31	0.14 ^a	-	0.01	0.01	-	0.14	-	0.14		
	Total	0.40	-	0.03	0.03	-	0.40	-	0.40		
Apr.	1 - 10	0.13	-	0.01	0.01	-	0.13	-	0.13		
	11 - 20	0.13	-	0.01	0.01	-	0.13	-	0.13		
	21 - 30	0.13	-	0.01	0.01	-	0.13	-	0.13		
	Total	0.39	-	0.03	0.03	-	0.39	-	0.39		
Annual	4.7	-	0.4	0.3	0.1	4.7	-	4.7			

Table 16 WATER BALANCE IN ZONE 2 (1/4)

ZONE, 2

(Unit: 10⁶ m³)

Year 1986	Demand			Available Local Water			River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW		(+)	(-)
May	1 - 10	0.34	(0.03)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.03)	-	-	0.34	-	0.34	
	21 - 31	0.37	(0)	-	-	0.37	-	0.37	
	Total	1.05	(0.06)	-	-	1.05	-	1.05	
June	1 - 10	0.34	(0.02)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.02)	-	-	0.34	-	0.34	
	21 - 30	0.34	(0.08)	-	-	0.34	-	0.34	
	Total	1.02	(0.11)	-	-	1.02	-	1.02	
July	1 - 10	0.34	(0.22)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.79)	-	-	0.34	-	0.34	
	21 - 31	0.37	(0.58)	-	-	0.37	-	0.37	
	Total	1.05	(1.59)	-	-	1.05	-	1.05	
Aug.	1 - 10	0.34	(1.26)	-	-	0.34	-	0.34	
	11 - 20	0.34	(1.47)	-	-	0.34	-	0.34	
	21 - 31	0.37	(1.22)	-	-	0.37	-	0.37	
	Total	1.05	(3.95)	-	-	1.05	-	1.05	
Sep.	1 - 10	0.34	(1.00)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.17)	-	-	0.34	-	0.34	
	21 - 30	0.34	(0)	-	-	0.34	-	0.34	
	Total	1.02	(1.17)	-	-	1.02	-	1.02	
Oct.	1 - 10	0.34	(0.91)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.89)	-	-	0.34	-	0.34	
	21 - 31	0.37	(0.13)	-	-	0.37	-	0.37	
	Total	1.05	(1.93)	-	-	1.05	-	1.05	
Nov.	1 - 10	0.34	(0.39)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.20)	-	-	0.34	-	0.34	
	21 - 30	0.34	(0.24)	-	-	0.34	-	0.34	
	Total	1.02	(0.83)	-	-	1.02	-	1.02	
Dec.	1 - 10	0.34	(0.30)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.37)	-	-	0.34	-	0.34	
	21 - 31	0.37	(0.39)	-	-	0.37	-	0.37	
	Total	1.05	(1.06)	-	-	1.05	-	1.05	
Jan.	1 - 10	0.34	(0.47)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.53)	-	-	0.34	-	0.34	
	21 - 31	0.37	(0.57)	-	-	0.37	-	0.37	
	Total	1.05	(1.57)	-	-	1.05	-	1.05	
Feb.	1 - 10	0.34	(0.65)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.59)	-	-	0.34	-	0.34	
	21 - 28	0.27	(0.56)	-	-	0.27	-	0.27	
	Total	0.95	(1.80)	-	-	0.95	-	0.95	
Mar.	1 - 10	0.34	(0.55)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.25)	-	-	0.34	-	0.34	
	21 - 31	0.37	(0.19)	-	-	0.37	-	0.37	
	Total	1.05	(0.99)	-	-	1.05	-	1.05	
Apr.	1 - 10	0.34	(0.21)	-	-	0.34	-	0.34	
	11 - 20	0.34	(0.01)	-	-	0.34	-	0.34	
	21 - 30	0.34	(0.10)	-	-	0.34	-	0.34	
	Total	1.02	(0.32)	-	-	1.02	-	1.02	
Annual	12.5	(15.4)	-	-	12.5	-	12.5		

Note : Figures in parentheses are not used for water balance calculation because they are supplied from the Bang Phra reservoir.

Table 16 WATER BALANCE IN ZONE 2 (2/4)

ZONE 2

(Unit: $10^6 m^3$)

Year	Demand			Available Local Water			Withdrawal	River Water	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	NW			RW	(+)
1991	1 - 10	0.35	(0.03)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.03)	-	-	-	0.35	-	0.35	
	21 - 31	0.38	(0)	-	-	-	0.38	-	0.38	
	Total	1.08	(0.06)	-	-	-	1.08	-	1.08	
May	1 - 10	0.35	(0.02)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.02)	-	-	-	0.35	-	0.35	
	21 - 30	0.35	(0.08)	-	-	-	0.35	-	0.35	
	Total	1.05	(0.11)	-	-	-	1.05	-	1.05	
June	1 - 10	0.35	(0.02)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.02)	-	-	-	0.35	-	0.35	
	21 - 30	0.35	(0.08)	-	-	-	0.35	-	0.35	
	Total	1.05	(0.11)	-	-	-	1.05	-	1.05	
July	1 - 10	0.35	(0.22)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.79)	-	-	-	0.35	-	0.35	
	21 - 31	0.38	(0.58)	-	-	-	0.38	-	0.38	
	Total	1.08	(1.59)	-	-	-	1.08	-	1.08	
Aug.	1 - 10	0.35	(1.26)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(1.47)	-	-	-	0.35	-	0.35	
	21 - 31	0.38	(1.22)	-	-	-	0.38	-	0.38	
	Total	1.08	(3.95)	-	-	-	1.08	-	1.08	
Sep.	1 - 10	0.35	(1.00)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.17)	-	-	-	0.35	-	0.35	
	21 - 30	0.35	(0)	-	-	-	0.35	-	0.35	
	Total	1.05	(1.17)	-	-	-	1.05	-	1.05	
Oct.	1 - 10	0.35	(0.91)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.89)	-	-	-	0.35	-	0.35	
	21 - 31	0.38	(0.13)	-	-	-	0.38	-	0.38	
	Total	1.08	(1.93)	-	-	-	1.08	-	1.08	
Nov.	1 - 10	0.35	(0.39)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.20)	-	-	-	0.35	-	0.35	
	21 - 30	0.35	(0.24)	-	-	-	0.35	-	0.35	
	Total	1.05	(0.83)	-	-	-	1.05	-	1.05	
Dec.	1 - 10	0.35	(0.30)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.37)	-	-	-	0.35	-	0.35	
	21 - 31	0.38	(0.39)	-	-	-	0.38	-	0.38	
	Total	1.08	(1.06)	-	-	-	1.08	-	1.08	
Jan.	1 - 10	0.35	(0.47)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.53)	-	-	-	0.35	-	0.35	
	21 - 31	0.38	(0.57)	-	-	-	0.38	-	0.38	
	Total	1.08	(1.57)	-	-	-	1.08	-	1.08	
Feb.	1 - 10	0.35	(0.65)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.59)	-	-	-	0.35	-	0.35	
	21 - 28	0.28	(0.56)	-	-	-	0.28	-	0.28	
	Total	0.98	(1.80)	-	-	-	0.98	-	0.98	
Mar.	1 - 10	0.35	(0.55)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.25)	-	-	-	0.35	-	0.35	
	21 - 31	0.38	(0.19)	-	-	-	0.38	-	0.38	
	Total	1.08	(0.99)	-	-	-	1.08	-	1.08	
Apr.	1 - 10	0.35	(0.21)	-	-	-	0.35	-	0.35	
	11 - 20	0.35	(0.01)	-	-	-	0.35	-	0.35	
	21 - 30	0.35	(0.10)	-	-	-	0.35	-	0.35	
	Total	1.05	(0.32)	-	-	-	1.05	-	1.05	
Annual	12.8	(15.4)	-	-	-	12.8	-	12.8		

Note : Figures in parentheses are not used for water balance calculation because they are supplied from the Bang Phra reservoir.

Table 16 WATER BALANCE IN ZONE 2 (3/4)

ZONE 2

(Unit: 10⁶ m³)

Year 1996	Demand			Available Local Water			Water Deficit			
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water	(+)	WD	(-)
	OID	IRD	MF	GW	LRW	NW	RW			
May	1 - 10	0.49	(0.03)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.03)	-	-	0.49	-	0.49		
	21 - 31	0.53	(0)	-	-	0.53	-	0.53		
	Total	1.51	(0.06)	-	-	1.51	-	1.51		
June	1 - 10	0.49	(0.02)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.02)	-	-	0.49	-	0.49		
	21 - 30	0.49	(0.08)	-	-	0.49	-	0.49		
	Total	1.47	(0.11)	-	-	1.47	-	1.47		
July	1 - 10	0.49	(0.22)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.79)	-	-	0.49	-	0.49		
	21 - 31	0.53	(0.58)	-	-	0.53	-	0.53		
	Total	1.51	(1.59)	-	-	1.51	-	1.51		
Aug.	1 - 10	0.49	(1.26)	-	-	0.49	-	0.49		
	11 - 20	0.49	(1.47)	-	-	0.49	-	0.49		
	21 - 31	0.53	(1.22)	-	-	0.53	-	0.53		
	Total	1.51	(3.95)	-	-	1.51	-	1.51		
Sep.	1 - 10	0.49	(1.00)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.17)	-	-	0.49	-	0.49		
	21 - 30	0.49	(0)	-	-	0.49	-	0.49		
	Total	1.47	(1.17)	-	-	1.47	-	1.47		
Oct.	1 - 10	0.49	(0.91)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.89)	-	-	0.49	-	0.49		
	21 - 31	0.53	(0.13)	-	-	0.53	-	0.53		
	Total	1.51	(1.93)	-	-	1.51	-	1.51		
Nov.	1 - 10	0.49	(0.39)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.20)	-	-	0.49	-	0.49		
	21 - 30	0.49	(0.24)	-	-	0.49	-	0.49		
	Total	1.47	(0.83)	-	-	1.47	-	1.47		
Dec.	1 - 10	0.49	(0.30)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.37)	-	-	0.49	-	0.49		
	21 - 31	0.53	(0.39)	-	-	0.53	-	0.53		
	Total	1.51	(1.06)	-	-	1.51	-	1.51		
Jan.	1 - 10	0.49	(0.47)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.53)	-	-	0.49	-	0.49		
	21 - 31	0.53	(0.57)	-	-	0.53	-	0.53		
	Total	1.51	(1.57)	-	-	1.51	-	1.51		
Feb.	1 - 10	0.49	(0.65)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.59)	-	-	0.49	-	0.49		
	21 - 28	0.39	(0.56)	-	-	0.39	-	0.39		
	Total	1.37	(1.80)	-	-	1.37	-	1.37		
Mar.	1 - 10	0.49	(0.55)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.25)	-	-	0.49	-	0.49		
	21 - 31	0.53	(0.19)	-	-	0.53	-	0.53		
	Total	1.51	(0.99)	-	-	1.51	-	1.51		
Apr.	1 - 10	0.49	(0.21)	-	-	0.49	-	0.49		
	11 - 20	0.49	(0.01)	-	-	0.49	-	0.49		
	21 - 30	0.49	(0.10)	-	-	0.49	-	0.49		
	Total	1.47	(0.32)	-	-	1.47	-	1.47		
Annual	17.9	(15.4)	-	-	17.9	-	17.9			

Note : Figures in parentheses are not used for water balance calculation because they are supplied from the Bang Phra reservoir.

Table 16 WATER BALANCE IN ZONE 2 (4/4)

ZONE 2

(Unit: $10^6 m^3$)

Year 2001	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			(-)	
May	1 - 10	0.64	(0.03)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.03)	-	-	-	0.64	-	0.64	
	21 - 31	0.70	(0)	-	-	-	0.70	-	0.70	
	Total	1.98	(0.06)	-	-	-	1.98	-	1.98	
June	1 - 10	0.64	(0.02)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.02)	-	-	-	0.64	-	0.64	
	21 - 30	0.64	(0.08)	-	-	-	0.64	-	0.64	
	Total	1.92	(0.11)	-	-	-	1.92	-	1.92	
July	1 - 10	0.64	(0.22)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.79)	-	-	-	0.64	-	0.64	
	21 - 31	0.70	(0.58)	-	-	-	0.70	-	0.70	
	Total	1.98	(1.59)	-	-	-	1.98	-	1.98	
Aug.	1 - 10	0.64	(1.26)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(1.47)	-	-	-	0.64	-	0.64	
	21 - 31	0.70	(1.22)	-	-	-	0.70	-	0.70	
	Total	1.98	(3.95)	-	-	-	1.98	-	1.98	
Sep.	1 - 10	0.64	(1.00)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.17)	-	-	-	0.64	-	0.64	
	21 - 30	0.64	(0)	-	-	-	0.64	-	0.64	
	Total	1.92	(1.17)	-	-	-	1.92	-	1.92	
Oct.	1 - 10	0.64	(0.91)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.89)	-	-	-	0.64	-	0.64	
	21 - 31	0.70	(0.13)	-	-	-	0.70	-	0.70	
	Total	1.98	(1.93)	-	-	-	1.98	-	1.98	
Nov.	1 - 10	0.64	(0.39)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.20)	-	-	-	0.64	-	0.64	
	21 - 30	0.64	(0.24)	-	-	-	0.64	-	0.64	
	Total	1.92	(0.83)	-	-	-	1.92	-	1.92	
Dec.	1 - 10	0.64	(0.30)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.37)	-	-	-	0.64	-	0.64	
	21 - 31	0.70	(0.39)	-	-	-	0.70	-	0.70	
	Total	1.98	(1.06)	-	-	-	1.98	-	1.98	
Jan.	1 - 10	0.64	(0.47)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.53)	-	-	-	0.64	-	0.64	
	21 - 31	0.70	(0.57)	-	-	-	0.70	-	0.70	
	Total	1.98	(1.57)	-	-	-	1.98	-	1.98	
Feb.	1 - 10	0.64	(0.65)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.59)	-	-	-	0.64	-	0.64	
	21 - 28	0.51	(0.56)	-	-	-	0.51	-	0.51	
	Total	1.79	(1.80)	-	-	-	1.79	-	1.79	
Mar.	1 - 10	0.64	(0.55)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.25)	-	-	-	0.64	-	0.64	
	21 - 31	0.70	(0.19)	-	-	-	0.70	-	0.70	
	Total	1.98	(0.99)	-	-	-	1.98	-	1.98	
Apr.	1 - 10	0.64	(0.21)	-	-	-	0.64	-	0.64	
	11 - 20	0.64	(0.01)	-	-	-	0.64	-	0.64	
	21 - 30	0.64	(0.10)	-	-	-	0.64	-	0.64	
	Total	1.92	(0.32)	-	-	-	1.92	-	1.92	
Annual	23.4	(15.4)	-	-	-	23.4	-	23.4		

Note : Figures in parentheses are not used for water balance calculation because they are supplied from the Bang Phra reservoir.

Table 17 WATER BALANCE IN ZONE 3 (1/3)

ZONE 3

(Unit: $10^6 m^3$)

Year 1986	Demand			Available Local Water			River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW		(+)	WD (-)
May	1 - 10	0.21	0.03	0.22	-	-	0.46	-	0.46
	11 - 20	0.21	0.03	0.22	-	-	0.46	-	0.46
	21 - 31	0.24	0	0.24	-	-	0.48	-	0.48
	Total	0.66	0.06	0.68	-	-	1.40	-	1.40
June	1 - 10	0.21	0.02	0.22	-	-	0.45	-	0.45
	11 - 20	0.21	0.02	0.22	-	-	0.45	-	0.45
	21 - 30	0.21	0.08	0.22	-	-	0.51	-	0.51
	Total	0.63	0.11	0.66	-	-	1.41	-	1.41
July	1 - 10	0.21	0.22	0.22	-	-	0.65	-	0.65
	11 - 20	0.21	0.79	0.22	-	-	1.22	-	1.22
	21 - 31	0.24	0.58	0.24	-	-	1.06	-	1.06
	Total	0.66	1.59	0.68	-	-	2.93	-	2.93
Aug.	1 - 10	0.21	1.26	0.22	-	-	1.69	-	1.69
	11 - 20	0.21	1.47	0.22	-	-	1.90	-	1.90
	21 - 31	0.24	1.22	0.24	-	-	1.70	-	1.70
	Total	0.66	3.95	0.68	-	-	5.29	-	5.29
Sep.	1 - 10	0.21	1.00	0.22	-	-	1.43	-	1.43
	11 - 20	0.21	0.17	0.22	-	-	0.60	-	0.60
	21 - 30	0.21	0	0.22	-	-	0.43	-	0.43
	Total	0.63	1.17	0.66	-	-	2.46	-	2.46
Oct.	1 - 10	0.21	0.91	0.22	-	-	1.34	-	1.34
	11 - 20	0.21	0.89	0.22	-	-	1.32	-	1.32
	21 - 31	0.24	0.13	0.24	-	-	0.61	-	0.61
	Total	0.66	1.93	0.68	-	-	3.27	-	3.27
Nov.	1 - 10	0.21	0.39	0.22	-	-	0.82	-	0.82
	11 - 20	0.21	0.20	0.22	-	-	0.63	-	0.63
	21 - 30	0.21	0.24	0.22	-	-	0.67	-	0.67
	Total	0.63	0.83	0.66	-	-	2.12	-	2.12
Dec.	1 - 10	0.21	0.30	0.22	-	-	0.73	-	0.73
	11 - 20	0.21	0.37	0.22	-	-	0.80	-	0.80
	21 - 31	0.24	0.39	0.24	-	-	0.87	-	0.87
	Total	0.66	1.06	0.68	-	-	2.40	-	2.40
Jan.	1 - 10	0.21	0.47	0.22	-	-	0.90	-	0.90
	11 - 20	0.21	0.53	0.22	-	-	0.96	-	0.96
	21 - 31	0.21	0.57	0.24	-	-	1.02	-	1.02
	Total	0.63	1.57	0.68	-	-	2.88	-	2.88
Feb.	1 - 10	0.21	0.65	0.22	-	-	1.08	-	1.08
	11 - 20	0.21	0.59	0.22	-	-	1.02	-	1.02
	21 - 28	0.17	0.56	0.21	-	-	0.94	-	0.94
	Total	0.59	1.80	0.65	-	-	3.04	-	3.04
Mar.	1 - 10	0.21	0.55	0.22	-	-	0.98	-	0.98
	11 - 20	0.21	0.25	0.22	-	-	0.68	-	0.68
	21 - 31	0.24	0.19	0.24	-	-	0.67	-	0.67
	Total	0.66	0.99	0.68	-	-	2.33	-	2.33
Apr.	1 - 10	0.21	0.21	0.22	-	-	0.64	-	0.64
	11 - 20	0.21	0.01	0.22	-	-	0.44	-	0.44
	21 - 30	0.21	0.10	0.22	-	-	0.53	-	0.53
	Total	0.63	0.32	0.66	-	-	1.61	-	1.61
Annual	7.8	15.4	8.0	-	-	31.2	-	31.2	

Note : (1) The irrigation water demand is actually accrued from Zone No.2.

(2) The D&I water demand includes 5.4 MCM/yr of water to be diverted to other zones; 3.3 MCM/yr to Zone No.1 and 2.1 MCM/yr to Zone No.4.

Table 17 WATER BALANCE IN ZONE 3 (2/3)

ZONE 3		(Unit: 10 ⁶ m ³)								
Year 1991	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			WD	(-)
May	1 - 10	0.31	0.03	0.22	-	-	0.56	-	0.56	
	11 - 20	0.31	0.03	0.22	-	-	0.56	-	0.56	
	21 - 31	0.34	0	0.24	-	-	0.58	-	0.58	
	Total	0.96	0.06	0.68	-	-	1.70	-	1.70	
June	1 - 10	0.31	0.02	0.22	-	-	0.55	-	0.55	
	11 - 20	0.31	0.02	0.22	-	-	0.55	-	0.55	
	21 - 30	0.31	0.08	0.22	-	-	0.61	-	0.61	
	Total	0.93	0.12	0.66	-	-	1.71	-	1.71	
July	1 - 10	0.31	0.22	0.22	-	-	0.75	-	0.75	
	11 - 20	0.31	0.79	0.22	-	-	1.32	-	1.32	
	21 - 31	0.34	0.58	0.24	-	-	1.16	-	1.16	
	Total	0.96	1.59	0.68	-	-	3.23	-	3.23	
Aug.	1 - 10	0.31	1.26	0.22	-	-	1.79	-	1.79	
	11 - 20	0.31	1.47	0.22	-	-	2.00	-	2.00	
	21 - 31	0.34	1.22	0.24	-	-	1.80	-	1.80	
	Total	0.96	3.95	0.68	-	-	5.59	-	5.59	
Sep.	1 - 10	0.31	1.00	0.22	-	-	1.53	-	1.53	
	11 - 20	0.31	0.17	0.22	-	-	0.70	-	0.70	
	21 - 30	0.31	0	0.22	-	-	0.53	-	0.53	
	Total	0.93	1.17	0.66	-	-	2.76	-	2.76	
Oct.	1 - 10	0.31	0.91	0.22	-	-	1.44	-	1.44	
	11 - 20	0.31	0.89	0.22	-	-	1.42	-	1.42	
	21 - 31	0.34	0.13	0.24	-	-	0.71	-	0.71	
	Total	0.96	1.93	0.68	-	-	3.57	-	3.57	
Nov.	1 - 10	0.31	0.39	0.22	-	-	0.92	-	0.92	
	11 - 20	0.31	0.20	0.22	-	-	0.73	-	0.73	
	21 - 30	0.31	0.24	0.22	-	-	0.77	-	0.77	
	Total	0.93	0.83	0.66	-	-	2.42	-	2.42	
Dec.	1 - 10	0.31	0.30	0.22	-	-	0.83	-	0.83	
	11 - 20	0.31	0.37	0.22	-	-	0.90	-	0.90	
	21 - 31	0.34	0.39	0.24	-	-	0.97	-	0.97	
	Total	0.96	1.06	0.68	-	-	2.70	-	2.70	
Jan.	1 - 10	0.31	0.47	0.22	-	-	1.00	-	1.00	
	11 - 20	0.31	0.53	0.22	-	-	1.06	-	1.06	
	21 - 31	0.34	0.57	0.24	-	-	1.15	-	1.15	
	Total	0.96	1.57	0.68	-	-	3.21	-	3.21	
Feb.	1 - 10	0.31	0.65	0.22	-	-	1.18	-	1.18	
	11 - 20	0.31	0.59	0.22	-	-	1.12	-	1.12	
	21 - 28	0.25	0.56	0.21	-	-	1.02	-	1.02	
	Total	0.87	1.80	0.65	-	-	3.32	-	3.32	
Mar.	1 - 10	0.31	0.55	0.22	-	-	1.08	-	1.08	
	11 - 20	0.31	0.25	0.22	-	-	0.78	-	0.78	
	21 - 31	0.34	0.19	0.24	-	-	0.77	-	0.77	
	Total	0.96	0.99	0.68	-	-	2.63	-	2.63	
Apr.	1 - 10	0.31	0.21	0.22	-	-	0.74	-	0.74	
	11 - 20	0.31	0.01	0.22	-	-	0.54	-	0.54	
	21 - 30	0.31	0.10	0.22	-	-	0.63	-	0.63	
	Total	0.93	0.32	0.66	-	-	1.91	-	1.91	
Annual	11.2	15.4	8.0	-	-	34.6	-	34.6		

Note: (1) The irrigation water demand is actually accrued from Zone No.2.

(2) The D&I water demand includes 8.7 MCM/yr of water to be diverted to other zones; 6.6 MCM/yr to Zone No.1 and 2.1 MCM/yr to Zone No.4.

Table 17 WATER BALANCE IN ZONE 3 (3/3)

ZONE-3

(Unit: 10⁶ m³)

Year 1996, 2001	Demand			Available Local Water				Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water	(+)	WD (-)
	DiD	IRD	MF	GW	LRW	NW	RW		
May	1 - 10	0.31	0.03	0.22	-	-	0.56	-	0.56
	11 - 20	0.31	0.03	0.22	-	-	0.56	-	0.56
	21 - 31	0.34	0	0.24	-	-	0.58	-	0.58
	Total	0.96	0.06	0.68	-	-	1.70	-	1.70
June	1 - 10	0.31	0.02	0.22	-	-	0.55	-	0.55
	11 - 20	0.31	0.02	0.22	-	-	0.55	-	0.55
	21 - 30	0.31	0.08	0.22	-	-	0.61	-	0.61
	Total	0.93	0.12	0.66	-	-	1.71	-	1.71
July	1 - 10	0.31	0.22	0.22	-	-	0.75	-	0.75
	11 - 20	0.31	0.79	0.22	-	-	1.32	-	1.32
	21 - 31	0.34	0.58	0.24	-	-	1.16	-	1.16
	Total	0.96	1.59	0.68	-	-	3.23	-	3.23
Aug.	1 - 10	0.31	1.26	0.22	-	-	1.79	-	1.79
	11 - 20	0.31	1.47	0.22	-	-	2.00	-	2.00
	21 - 31	0.34	1.22	0.24	-	-	1.80	-	1.80
	Total	0.96	3.95	0.68	-	-	5.59	-	5.59
Sep.	1 - 10	0.31	1.00	0.22	-	-	1.53	-	1.53
	11 - 20	0.31	0.17	0.22	-	-	0.70	-	0.70
	21 - 30	0.31	0	0.22	-	-	0.53	-	0.53
	Total	0.93	1.17	0.66	-	-	2.76	-	2.76
Oct.	1 - 10	0.31	0.91	0.22	-	-	1.44	-	1.44
	11 - 20	0.31	0.89	0.22	-	-	1.42	-	1.42
	21 - 31	0.34	0.13	0.24	-	-	0.71	-	0.71
	Total	0.96	1.93	0.68	-	-	3.57	-	3.57
Nov.	1 - 10	0.31	0.39	0.22	-	-	0.92	-	0.92
	11 - 20	0.31	0.20	0.22	-	-	0.73	-	0.73
	21 - 30	0.31	0.24	0.22	-	-	0.77	-	0.77
	Total	0.93	0.83	0.66	-	-	2.42	-	2.42
Dec.	1 - 10	0.31	0.30	0.22	-	-	0.83	-	0.83
	11 - 20	0.31	0.37	0.22	-	-	0.90	-	0.90
	21 - 31	0.34	0.39	0.24	-	-	0.97	-	0.97
	Total	0.96	1.06	0.68	-	-	2.70	-	2.70
Jan.	1 - 10	0.31	0.47	0.22	-	-	1.00	-	1.00
	11 - 20	0.31	0.53	0.22	-	-	1.06	-	1.06
	21 - 31	0.34	0.57	0.24	-	-	1.15	-	1.15
	Total	0.96	1.57	0.68	-	-	3.21	-	3.21
Feb.	1 - 10	0.31	0.65	0.22	-	-	1.18	-	1.18
	11 - 20	0.31	0.59	0.22	-	-	1.12	-	1.12
	21 - 28	0.25	0.56	0.21	-	-	1.02	-	1.02
	Total	0.87	1.80	0.65	-	-	3.32	-	3.32
Mar.	1 - 10	0.31	0.55	0.22	-	-	1.08	-	1.08
	11 - 20	0.31	0.25	0.22	-	-	0.78	-	0.78
	21 - 31	0.34	0.19	0.24	-	-	0.77	-	0.77
	Total	0.96	0.99	0.68	-	-	2.63	-	2.63
Apr.	1 - 10	0.31	0.21	0.22	-	-	0.74	-	0.74
	11 - 20	0.31	0.01	0.22	-	-	0.54	-	0.54
	21 - 30	0.31	0.10	0.22	-	-	0.63	-	0.63
	Total	0.93	0.32	0.66	-	-	1.91	-	1.91
Annual	11.3	15.4	8.0	-	-	34.7	-	34.7	

Note : (1) The irrigation water demand is actually accrued from Zone No.2

(2) The D&I water demand includes 8.7 MCM/yr of water to be diverted to other zones; 6.6 MCM/yr to Zone No.1 and 2.1 MCM/yr to Zone No.4.

Table 18 WATER BALANCE IN ZONE 4 (1/4)

ZONE 4

(Unit: 10^6 m^3)

Year 1986	Demand			Available Local Water				Water Deficit		
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water	(+)	WD	(-)
	DID	IRD	MF	GW	LRW	NW	RW			
May	1 - 10	0.29	-	(0.09)	-	-	0.29	0.52		0.23
	11 - 20	0.29	-	(0.09)	-	-	0.29	1.28		0.99
	21 - 31	0.31	-	(0.09)	-	-	0.31	0.46		0.15
	Total	0.89	-	(0.27)	-	-	0.89	2.26		1.37
June	1 - 10	0.29	-	(0.09)	-	-	0.29	0.84		0.55
	11 - 20	0.29	-	(0.09)	-	-	0.29	3.44		3.15
	21 - 30	0.29	-	(0.09)	-	-	0.29	0.39		0.10
	Total	0.87	-	(0.27)	-	-	0.87	4.67		3.80
July	1 - 10	0.29	-	(0.09)	-	-	0.29	0.16	0.13	
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.02	0.27	
	21 - 31	0.31	-	(0.09)	-	-	0.31	0.70		0.39
	Total	0.89	-	(0.27)	-	-	0.89	0.88	0.40	0.39
Aug.	1 - 10	0.29	-	(0.09)	-	-	0.29	0.32		0.03
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.71		0.42
	21 - 31	0.31	-	(0.09)	-	-	0.31	0.26	0.05	
	Total	0.89	-	(0.27)	-	-	0.89	1.29	0.05	0.45
Sep.	1 - 10	0.29	-	(0.09)	-	-	0.29	1.08		0.79
	11 - 20	0.29	-	(0.09)	-	-	0.29	2.52		2.23
	21 - 30	0.29	-	(0.09)	-	-	0.29	4.85		4.56
	Total	0.87	-	(0.27)	-	-	0.87	8.45		7.58
Oct.	1 - 10	0.29	-	(0.09)	-	-	0.29	3.97		3.68
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.77		0.48
	21 - 31	0.31	-	(0.09)	-	-	0.31	0.58		0.27
	Total	0.89	-	(0.27)	-	-	0.89	5.32		4.43
Nov.	1 - 10	0.29	-	(0.09)	-	-	0.29	0.84		0.55
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.40		0.11
	21 - 30	0.29	-	(0.09)	-	-	0.29	0.29		0
	Total	0.87	-	(0.27)	-	-	0.87	1.53		0.66
Dec.	1 - 10	0.29	-	(0.09)	-	-	0.29	0.35		0.06
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.84		0.55
	21 - 31	0.31	-	(0.09)	-	-	0.31	0.26	0.05	
	Total	0.89	-	(0.27)	-	-	0.89	1.45	0.05	0.61
Jan.	1 - 10	0.29	-	(0.09)	-	-	0.29	0.20	0.09	
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.13	0.16	
	21 - 31	0.31	-	(0.09)	-	-	0.31	0.11	0.20	
	Total	0.89	-	(0.27)	-	-	0.89	0.44	0.45	
Feb.	1 - 10	0.29	-	(0.09)	-	-	0.29	0.01	0.28	
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.15	0.14	
	21 - 28	0.23	-	(0.07)	-	-	0.23	2.05		1.82
	Total	0.81	-	(0.25)	-	-	0.81	2.21	0.42	1.82
Mar.	1 - 10	0.29	-	(0.09)	-	-	0.29	0.19	0.10	
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.18	0.11	
	21 - 31	0.31	-	(0.09)	-	-	0.31	0.56		0.25
	Total	0.89	-	(0.27)	-	-	0.89	0.93	0.21	0.25
Apr.	1 - 10	0.29	-	(0.09)	-	-	0.29	0.20	0.09	
	11 - 20	0.29	-	(0.09)	-	-	0.29	0.43		0.14
	21 - 30	0.29	-	(0.09)	-	-	0.29	0.40		0.11
	Total	0.87	-	(0.27)	-	-	0.87	1.03	0.09	0.25
Annual	10.5	-	(3.2)	-	-	10.5	30.5	1.7	21.7	

Note : (1) Figures in parentheses are not used for water balance calculation because they are sustained by the Nong Kho reservoir.

(2) Out of the total industrial water demand, 2.1 MCM/yr is excluded since it depends on the Bang Phara reservoir in Zone No.3.

Table 18 WATER BALANCE IN ZONE 4 (2/4)

ZONE 4

(Unit: $10^6 m^3$)

Year 1991	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			WD	(-)	
May	1 - 10	0.57	-	(0.09)	-	-	0.57	0.52	0.05		
	11 - 20	0.57	-	(0.09)	-	-	0.57	1.28		0.71	
	21 - 31	0.64	-	(0.09)	-	-	0.64	0.46	0.18		
	Total	1.78	-	(0.27)	-	-	1.78	2.26	0.23	0.71	
June	1 - 10	0.57	-	(0.09)	-	-	0.57	0.84		0.27	
	11 - 20	0.57	-	(0.09)	-	-	0.57	3.44		2.87	
	21 - 30	0.57	-	(0.09)	-	-	0.57	0.39	0.18		
	Total	1.71	-	(0.27)	-	-	1.71	4.67	0.18	3.14	
July	1 - 10	0.57	-	(0.09)	-	-	0.57	0.16	0.41		
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.02	0.55		
	21 - 31	0.64	-	(0.09)	-	-	0.64	0.70		0.06	
	Total	1.78	-	(0.27)	-	-	1.78	0.88	0.96	0.06	
Aug.	1 - 10	0.57	-	(0.09)	-	-	0.57	0.32	0.25		
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.71		0.14	
	21 - 31	0.64	-	(0.09)	-	-	0.64	0.26	0.38		
	Total	1.78	-	(0.27)	-	-	1.78	1.29	0.63	0.14	
Sep.	1 - 10	0.57	-	(0.09)	-	-	0.57	1.08		0.51	
	11 - 20	0.57	-	(0.09)	-	-	0.57	2.52		1.95	
	21 - 30	0.57	-	(0.09)	-	-	0.57	4.85		4.28	
	Total	1.71	-	(0.27)	-	-	1.71	8.45		6.74	
Oct.	1 - 10	0.57	-	(0.09)	-	-	0.57	3.97		3.40	
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.77		0.20	
	21 - 31	0.64	-	(0.09)	-	-	0.64	0.58	0.06		
	Total	1.78	-	(0.27)	-	-	1.78	5.32	0.06	3.60	
Nov.	1 - 10	0.57	-	(0.09)	-	-	0.57	0.84		0.27	
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.40	0.17		
	21 - 30	0.57	-	(0.09)	-	-	0.57	0.29	0.28		
	Total	1.71	-	(0.27)	-	-	1.71	1.53	0.45	0.27	
Dec.	1 - 10	0.57	-	(0.09)	-	-	0.57	0.35	0.22		
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.84		0.27	
	21 - 31	0.64	-	(0.09)	-	-	0.64	0.26	0.38		
	Total	1.78	-	(0.27)	-	-	1.78	1.45	0.60	0.27	
Jan.	1 - 10	0.57	-	(0.09)	-	-	0.57	0.20	0.37		
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.13	0.44		
	21 - 31	0.64	-	(0.09)	-	-	0.64	0.11	0.53		
	Total	1.78	-	(0.27)	-	-	1.78	0.44	1.34		
Feb.	1 - 10	0.57	-	(0.09)	-	-	0.57	0.01	0.56		
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.15	0.42		
	21 - 28	0.46	-	(0.07)	-	-	0.46	2.05		1.59	
	Total	1.60	-	(0.25)	-	-	1.60	2.21	0.98	1.59	
Mar.	1 - 10	0.57	-	(0.09)	-	-	0.57	0.19	0.38		
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.18	0.39		
	21 - 31	0.64	-	(0.09)	-	-	0.64	0.56	0.08		
	Total	1.78	-	(0.27)	-	-	1.78	0.93	0.85		
Apr.	1 - 10	0.57	-	(0.09)	-	-	0.57	0.20	0.37		
	11 - 20	0.57	-	(0.09)	-	-	0.57	0.43	0.14		
	21 - 30	0.57	-	(0.09)	-	-	0.57	0.40	0.17		
	Total	1.71	-	(0.27)	-	-	1.71	1.03	0.68		
Annual	21.0	-	(3.2)	-	-	21.0	30.5	7.0	16.5		

Note : (1) Figures in parentheses are not used for water balance calculation because they are sustained by the Nong Kho reservoir.

(2) Out of the total industrial water demand, 2.1 MCM/yr is excluded since it depends on the Bang Phra reservoir in Zone No.3.

Table 18 WATER BALANCE IN ZONE 4 (3/4)

ZONE 4

(Unit: $10^6 m^3$)

Year 1996	Demand			Available Local Water				Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	Water (+)	Deficit (-)	
May	1 - 10	0.82	-	(0.09)	-	-	0.82	0.52	0.30	
	11 - 20	0.82	-	(0.09)	-	-	0.82	1.28		0.46
	21 - 31	0.89	-	(0.09)	-	-	0.89	0.46	0.43	
	Total	2.53	-	(0.27)	-	-	2.53	2.26	0.73	0.46
June	1 - 10	0.82	-	(0.09)	-	-	0.82	0.84		0.02
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.40		2.62
	21 - 30	0.82	-	(0.09)	-	-	0.82	0.39	0.43	
	Total	2.46	-	(0.27)	-	-	2.46	4.67	0.43	2.64
July	1 - 10	0.82	-	(0.09)	-	-	0.82	0.16	0.66	
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.02	0.80	
	21 - 31	0.89	-	(0.09)	-	-	0.89	0.70	0.19	
	Total	2.53	-	(0.27)	-	-	2.53	0.88	1.65	
Aug.	1 - 10	0.82	-	(0.09)	-	-	0.82	0.32	0.50	
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.71	0.11	
	21 - 31	0.89	-	(0.09)	-	-	0.89	0.26	0.63	
	Total	2.53	-	(0.27)	-	-	2.53	1.29	1.24	
Sep.	1 - 10	0.82	-	(0.09)	-	-	0.82	1.08		0.26
	11 - 20	0.82	-	(0.09)	-	-	0.82	2.52		1.70
	21 - 30	0.82	-	(0.09)	-	-	0.82	4.85		4.03
	Total	2.46	-	(0.27)	-	-	2.46	8.45		5.99
Oct.	1 - 10	0.82	-	(0.09)	-	-	0.82	3.97		3.15
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.77	0.05	
	21 - 31	0.89	-	(0.09)	-	-	0.89	0.58	0.31	
	Total	2.53	-	(0.27)	-	-	2.53	5.32	0.36	3.15
Nov.	1 - 10	0.82	-	(0.09)	-	-	0.82	0.84		0.02
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.40	0.42	
	21 - 30	0.82	-	(0.09)	-	-	0.82	0.29	0.53	
	Total	2.46	-	(0.27)	-	-	2.46	1.53	0.95	0.02
Dec.	1 - 10	0.82	-	(0.09)	-	-	0.82	0.35	0.47	
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.84		0.02
	21 - 31	0.89	-	(0.09)	-	-	0.89	0.26	0.63	
	Total	2.53	-	(0.27)	-	-	2.53	1.45	1.10	0.02
Jan.	1 - 10	0.82	-	(0.09)	-	-	0.82	0.20	0.62	
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.13	0.69	
	21 - 31	0.89	-	(0.09)	-	-	0.89	0.11	0.78	
	Total	2.53	-	(0.27)	-	-	2.53	0.44	2.09	
Feb.	1 - 10	0.82	-	(0.09)	-	-	0.82	0.01	0.81	
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.15	0.67	
	21 - 28	0.64	-	(0.07)	-	-	0.64	2.05		1.41
	Total	2.28	-	(0.25)	-	-	2.28	2.21	1.48	1.41
Mar.	1 - 10	0.82	-	(0.09)	-	-	0.82	0.19	0.63	
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.18	0.64	
	21 - 31	0.89	-	(0.09)	-	-	0.89	0.56	0.33	
	Total	2.53	-	(0.27)	-	-	2.53	0.93	1.60	
Apr.	1 - 10	0.82	-	(0.09)	-	-	0.82	0.20	0.62	
	11 - 20	0.82	-	(0.09)	-	-	0.82	0.43	0.39	
	21 - 30	0.82	-	(0.09)	-	-	0.82	0.40	0.42	
	Total	2.46	-	(0.27)	-	-	2.46	1.03	1.43	
Annual	29.8	-	(3.2)	-	-	29.8	30.5	13.0	13.7	

Note : (1) Figures in parentheses are not used for water balance calculation because they are sustained by the Nong Kho reservoir.

(2) Out of the total industrial water demand, 2.1 MCM/yr is excluded since it depends on the Bang Phra reservoir in Zone No.3

Table 18 WATER BALANCE IN ZONE 4 (4/4)

ZONE 4

(Unit: 10⁶ m³)

Year 2001	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit		
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	(+)			WD	(-)	
	DID	IRD	MF	GW	LRW						
May	1 - 10	1.24	-	(0.09)	-	-	1.24	0.52	0.72		
	11 - 20	1.24	-	(0.09)	-	-	1.24	1.28		0.04	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.46	0.91		
	Total	3.85	-	(0.27)	-	-	3.85	2.26	1.63	0.04	
June	1 - 10	1.24	-	(0.09)	-	-	1.24	0.84	0.40		
	11 - 20	1.24	-	(0.09)	-	-	1.24	3.44		2.20	
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.39	0.85		
	Total	3.72	-	(0.27)	-	-	3.72	4.67	1.25	2.20	
July	1 - 10	1.24	-	(0.09)	-	-	1.24	0.16	1.08		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.02	1.22		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.70	0.67		
	Total	3.85	-	(0.27)	-	-	3.85	0.88	2.97		
Aug.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.32	0.92		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.71	0.53		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.26	1.11		
	Total	3.85	-	(0.27)	-	-	3.85	1.29	2.56		
Sep.	1 - 10	1.24	-	(0.09)	-	-	1.24	1.08	0.16		
	11 - 20	1.24	-	(0.09)	-	-	1.24	2.52		1.28	
	21 - 30	1.24	-	(0.09)	-	-	1.24	4.85		3.61	
	Total	3.72	-	(0.27)	-	-	3.72	8.45	0.16	4.89	
Oct.	1 - 10	1.24	-	(0.09)	-	-	1.24	3.97		2.73	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.77	0.47		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.58	0.79		
	Total	3.85	-	(0.27)	-	-	3.85	5.32	1.26	2.73	
Nov.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.84	0.40		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.40	0.84		
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.29	0.95		
	Total	3.72	-	(0.27)	-	-	3.72	1.53	2.19		
Dec.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.35	0.89		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.84	0.40		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.26	1.11		
	Total	3.85	-	(0.27)	-	-	3.85	1.45	2.40		
Jan.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.20	1.04		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.13	1.11		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.11	1.26		
	Total	3.85	-	(0.27)	-	-	3.85	0.44	3.41		
Feb.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.61	1.23		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.15	1.09		
	21 - 28	0.99	-	(0.07)	-	-	0.99	2.05		1.06	
	Total	3.47	-	(0.25)	-	-	3.47	2.21	2.32	1.06	
Mar.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.19	1.05		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.18	1.06		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.56	0.81		
	Total	3.85	-	(0.27)	-	-	3.85	0.93	2.92		
Apr.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.20	1.04		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.43	0.81		
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.40	0.84		
	Total	3.72	-	(0.27)	-	-	3.72	1.03	2.69		
Annual		45.4	-	(3.2)	-	-	45.4	30.5	25.8	10.9	

Note : (1) Figures in parentheses are not used for water balance calculation because they are sustained by the Nong Kho reservoir.

(2) Out of the total industrial water demand, 2.1 MCM/yr is excluded since it depends on the Bang Phra reservoir in Zone No.3

Table 19 WATER BALANCE IN ZONE 5 (1/4)

ZONE 5

(Unit: 10^6 m^3)

Year 1986	Demand			Available Local Water				Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	(-)
May	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 31	0.15	-	0.08	-	-	0.23	-	0.23
	Total	0.43	-	0.20	-	-	0.63	-	0.63
June	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 30	0.14	-	0.06	-	-	0.20	-	0.20
	Total	0.42	-	0.18	-	-	0.60	-	0.60
July	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 31	0.15	-	0.08	-	-	0.23	-	0.23
	Total	0.43	-	0.20	-	-	0.63	-	0.63
Aug.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 31	0.15	-	0.08	-	-	0.23	-	0.23
	Total	0.43	-	0.20	-	-	0.63	-	0.63
Sep.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 30	0.14	-	0.06	-	-	0.20	-	0.20
	Total	0.42	-	0.18	-	-	0.60	-	0.60
Oct.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 31	0.15	-	0.08	-	-	0.23	-	0.23
	Total	0.43	-	0.20	-	-	0.63	-	0.63
Nov.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 30	0.14	-	0.06	-	-	0.20	-	0.20
	Total	0.42	-	0.18	-	-	0.60	-	0.60
Dec.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 31	0.15	-	0.08	-	-	0.23	-	0.23
	Total	0.43	-	0.20	-	-	0.63	-	0.63
Jan.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 31	0.15	-	0.08	-	-	0.23	-	0.23
	Total	0.43	-	0.20	-	-	0.63	-	0.63
Feb.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 28	0.13	-	0.04	-	-	0.17	-	0.17
	Total	0.41	-	0.16	-	-	0.57	-	0.57
Mar.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 31	0.15	-	0.08	-	-	0.23	-	0.23
	Total	0.43	-	0.20	-	-	0.63	-	0.63
Apr.	1 - 10	0.14	-	0.06	-	-	0.20	-	0.20
	11 - 20	0.14	-	0.06	-	-	0.20	-	0.20
	21 - 30	0.14	-	0.06	-	-	0.20	-	0.20
	Total	0.42	-	0.18	-	-	0.60	-	0.60
Annual		5.1	-	2.5	-	-	7.6	-	7.6

Table 19 WATER BALANCE IN ZONE 5 (2/4)

ZONE 5

(Unit: $10^6 m^3$)

Year 1991	Demand			Available Local Water				Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD (-)
May	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 31	0.26	-	0.08	-	-	0.34	-	0.34
	Total	0.74	-	0.20	-	-	0.94	-	0.94
June	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 30	0.24	-	0.06	-	-	0.30	-	0.30
	Total	0.72	-	0.18	-	-	0.90	-	0.90
July	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 31	0.26	-	0.08	-	-	0.34	-	0.34
	Total	0.74	-	0.20	-	-	0.94	-	0.94
Aug.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 31	0.26	-	0.08	-	-	0.34	-	0.34
	Total	0.74	-	0.20	-	-	0.94	-	0.94
Sep.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 30	0.24	-	0.06	-	-	0.30	-	0.30
	Total	0.72	-	0.18	-	-	0.90	-	0.90
Oct.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 31	0.26	-	0.08	-	-	0.34	-	0.34
	Total	0.74	-	0.20	-	-	0.94	-	0.94
Nov.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 30	0.24	-	0.06	-	-	0.30	-	0.30
	Total	0.72	-	0.18	-	-	0.90	-	0.90
Dec.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 31	0.26	-	0.08	-	-	0.34	-	0.34
	Total	0.74	-	0.20	-	-	0.94	-	0.94
Jan.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 31	0.26	-	0.08	-	-	0.34	-	0.34
	Total	0.74	-	0.20	-	-	0.94	-	0.94
Feb.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 29	0.22	-	0.04	-	-	0.26	-	0.26
	Total	0.70	-	0.16	-	-	0.86	-	0.86
Mar.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 31	0.26	-	0.08	-	-	0.34	-	0.34
	Total	0.74	-	0.20	-	-	0.94	-	0.94
Apr.	1 - 10	0.24	-	0.06	-	-	0.30	-	0.30
	11 - 20	0.24	-	0.06	-	-	0.30	-	0.30
	21 - 30	0.24	-	0.06	-	-	0.30	-	0.30
	Total	0.72	-	0.18	-	-	0.90	-	0.90
Annual	8.7	-	2.5	-	-	11.2	-	11.2	

Table 19 WATER BALANCE IN ZONE 5 (3/4)

ZONE 5

(Unit: 10⁶ m³)

Year 1996	Demand			Available Local Water		Withdrawal NW	River Water RW	Water Deficit		
	D & I	Irrigation	Maint. Flow	Ground Water	Local River			(+)	WD	(-)
	DID	IRD	MF	GW	LRW					
May	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 31	0.35	-	0.08	-	-	0.43	-	0.43	
	Total	1.01	-	0.20	-	-	1.21	-	1.21	
June	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 30	0.33	-	0.06	-	-	0.39	-	0.39	
	Total	0.99	-	0.18	-	-	1.17	-	1.17	
July	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 31	0.35	-	0.08	-	-	0.43	-	0.43	
	Total	1.01	-	0.20	-	-	1.21	-	1.21	
Aug.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 31	0.35	-	0.08	-	-	0.43	-	0.43	
	Total	1.01	-	0.20	-	-	1.21	-	1.21	
Sep.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 30	0.33	-	0.06	-	-	0.39	-	0.39	
	Total	0.99	-	0.18	-	-	1.17	-	1.17	
Oct.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 31	0.35	-	0.08	-	-	0.43	-	0.43	
	Total	1.01	-	0.20	-	-	1.21	-	1.21	
Nov.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 30	0.33	-	0.06	-	-	0.39	-	0.39	
	Total	0.99	-	0.18	-	-	1.17	-	1.17	
Dec.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 31	0.35	-	0.08	-	-	0.43	-	0.43	
	Total	1.01	-	0.20	-	-	1.21	-	1.21	
Jan.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 31	0.35	-	0.08	-	-	0.43	-	0.43	
	Total	1.01	-	0.20	-	-	1.21	-	1.21	
Feb.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 28	0.26	-	0.04	-	-	0.30	-	0.30	
	Total	0.92	-	0.16	-	-	1.08	-	1.08	
Mar.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 31	0.35	-	0.08	-	-	0.43	-	0.43	
	Total	1.01	-	0.20	-	-	1.21	-	1.21	
Apr.	1 - 10	0.33	-	0.06	-	-	0.39	-	0.39	
	11 - 20	0.33	-	0.06	-	-	0.39	-	0.39	
	21 - 30	0.33	-	0.06	-	-	0.39	-	0.39	
	Total	0.99	-	0.18	-	-	1.17	-	1.17	
Annual	11.9	-	2.5	-	-	14.4	-	14.4		

Table 19 WATER BALANCE IN ZONE 5 (4/4)

ZONE 5

(Unit: $10^6 m^3$)

Year 2001	Demand			Available Local Water			River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW		(+)	WD (-)
May	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 31	0.49	-	0.08	-	-	0.57	-	0.57
	Total	1.37	-	0.20	-	-	1.57	-	1.57
June	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 30	0.44	-	0.06	-	-	0.50	-	0.50
	Total	1.32	-	0.18	-	-	1.50	-	1.50
July	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 31	0.49	-	0.08	-	-	0.57	-	0.57
	Total	1.37	-	0.20	-	-	1.57	-	1.57
Aug.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 31	0.49	-	0.08	-	-	0.57	-	0.57
	Total	1.37	-	0.20	-	-	1.57	-	1.57
Sep.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 30	0.44	-	0.06	-	-	0.50	-	0.50
	Total	1.32	-	0.18	-	-	1.50	-	1.50
Oct.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 31	0.49	-	0.08	-	-	0.57	-	0.57
	Total	1.37	-	0.20	-	-	1.57	-	1.57
Nov.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 30	0.44	-	0.06	-	-	0.50	-	0.50
	Total	1.32	-	0.18	-	-	1.50	-	1.50
Dec.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 31	0.49	-	0.08	-	-	0.57	-	0.57
	Total	1.37	-	0.20	-	-	1.57	-	1.57
Jan.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 31	0.49	-	0.08	-	-	0.57	-	0.57
	Total	1.37	-	0.20	-	-	1.57	-	1.57
Feb.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 28	0.36	-	0.04	-	-	0.40	-	0.40
	Total	1.24	-	0.16	-	-	1.40	-	1.40
Mar.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 31	0.49	-	0.08	-	-	0.57	-	0.57
	Total	1.37	-	0.20	-	-	1.57	-	1.57
Apr.	1 - 10	0.44	-	0.06	-	-	0.50	-	0.50
	11 - 20	0.44	-	0.06	-	-	0.50	-	0.50
	21 - 30	0.44	-	0.06	-	-	0.50	-	0.50
	Total	1.32	-	0.18	-	-	1.50	-	1.50
Annual		16.2	-	2.5	-	-	18.7	-	18.7

Table 20 WATER BALANCE IN ZONE 6 (1/4)

ZONE 6

(Unit: $10^6 m^3$)

Year	1986	Demand			Available Local Water			River Water	Water Deficit	
		D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal		(+)	WD
		DID	IRD	MF	GW	LRW	NW	RW		
May	1 - 10	0.01	-	-	-	-	0.01	0.25		0.24
	11 - 20	0.01	-	-	-	-	0.01	0.60		0.59
	21 - 31	0.01	-	-	-	-	0.01	0.21		0.20
	Total	0.03	-	-	-	-	0.03	1.06		1.03
June	1 - 10	0.01	-	-	-	-	0.01	0.39		0.38
	11 - 20	0.01	-	-	-	-	0.01	1.61		1.60
	21 - 30	0.01	-	-	-	-	0.01	0.19		0.18
	Total	0.03	-	-	-	-	0.03	2.19		2.16
July	1 - 10	0.01	-	-	-	-	0.01	0.07		0.06
	11 - 20	0.01	-	-	-	-	0.01	0	0.01	
	21 - 31	0.01	-	-	-	-	0.01	0.34		0.33
	Total	0.03	-	-	-	-	0.03	0.41	0.01	0.39
Aug.	1 - 10	0.01	-	-	-	-	0.01	0.15		0.14
	11 - 20	0.01	-	-	-	-	0.01	0.33		0.32
	21 - 31	0.01	-	-	-	-	0.01	0.13		0.12
	Total	0.03	-	-	-	-	0.03	0.61		0.58
Sep.	1 - 10	0.01	-	-	-	-	0.01	0.50		0.49
	11 - 20	0.01	-	-	-	-	0.01	1.19		1.18
	21 - 30	0.01	-	-	-	-	0.01	2.29		2.28
	Total	0.03	-	-	-	-	0.03	3.98		3.95
Oct.	1 - 10	0.01	-	-	-	-	0.01	1.87		1.86
	11 - 20	0.01	-	-	-	-	0.01	0.36		0.35
	21 - 31	0.01	-	-	-	-	0.01	0.27		0.26
	Total	0.03	-	-	-	-	0.03	2.50		2.47
Nov.	1 - 10	0.01	-	-	-	-	0.01	0.39		0.38
	11 - 20	0.01	-	-	-	-	0.01	0.19		0.18
	21 - 30	0.01	-	-	-	-	0.01	0.14		0.13
	Total	0.03	-	-	-	-	0.03	0.72		0.69
Dec.	1 - 10	0.01	-	-	-	-	0.01	0.16		0.15
	11 - 20	0.01	-	-	-	-	0.01	0.39		0.38
	21 - 31	0.01	-	-	-	-	0.01	0.13		0.12
	Total	0.03	-	-	-	-	0.03	0.68		0.65
Jan.	1 - 10	0.01	-	-	-	-	0.01	0.09		0.08
	11 - 20	0.01	-	-	-	-	0.01	0.06		0.05
	21 - 31	0.01	-	-	-	-	0.01	0.05		0.04
	Total	0.03	-	-	-	-	0.03	0.20		0.17
Feb.	1 - 10	0.01	-	-	-	-	0.01	0	0.01	
	11 - 20	0.01	-	-	-	-	0.01	0.06		0.05
	21 - 28	0.01	-	-	-	-	0.01	0.96		0.95
	Total	0.03	-	-	-	-	0.03	1.02	0.01	1.00
Mar.	1 - 10	0.01	-	-	-	-	0.01	0.09		0.08
	11 - 20	0.01	-	-	-	-	0.01	0.08		0.07
	21 - 31	0.01	-	-	-	-	0.01	0.26		0.25
	Total	0.03	-	-	-	-	0.03	0.43		0.40
Apr.	1 - 10	0.01	-	-	-	-	0.01	0.10		0.09
	11 - 20	0.01	-	-	-	-	0.01	0.20		0.19
	21 - 30	0.01	-	-	-	-	0.01	0.19		0.18
	Total	0.03	-	-	-	-	0.03	0.49		0.46
	Annual	0.4	-	-	-	-	0.4	14.4	0	14.0

Table 20 WATER BALANCE IN ZONE 6 (2/4)

ZONE 6

(Unit: 10⁶ m³)

Year 1991		Demand			Available Local Water			River Water RW	Water Deficit	
		D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW		(+)	(-)
May	1 - 10	0.02	-	-	-	-	0.02	0.25		0.23
	11 - 20	0.02	-	-	-	-	0.02	0.60		0.58
	21 - 31	0.03	-	-	-	-	0.03	0.21		0.18
	Total	0.07	-	-	-	-	0.07	1.06		0.99
June	1 - 10	0.02	-	-	-	-	0.02	0.39		0.37
	11 - 20	0.02	-	-	-	-	0.02	1.61		1.59
	21 - 30	0.02	-	-	-	-	0.02	0.19		0.17
	Total	0.06	-	-	-	-	0.06	2.19		2.13
July	1 - 10	0.02	-	-	-	-	0.02	0.07		0.05
	11 - 20	0.02	-	-	-	-	0.02	0	0.02	
	21 - 31	0.03	-	-	-	-	0.03	0.34		0.31
	Total	0.07	-	-	-	-	0.07	0.41	0.02	0.36
Aug.	1 - 10	0.02	-	-	-	-	0.02	0.15		0.13
	11 - 20	0.02	-	-	-	-	0.02	0.33		0.31
	21 - 31	0.03	-	-	-	-	0.03	0.13		0.10
	Total	0.07	-	-	-	-	0.07	0.61		0.54
Sep.	1 - 10	0.02	-	-	-	-	0.02	0.50		0.48
	11 - 20	0.02	-	-	-	-	0.02	1.19		1.17
	21 - 30	0.02	-	-	-	-	0.02	2.29		2.27
	Total	0.06	-	-	-	-	0.06	3.98		3.92
Oct.	1 - 10	0.02	-	-	-	-	0.02	1.87		1.85
	11 - 20	0.02	-	-	-	-	0.02	0.36		0.34
	21 - 31	0.03	-	-	-	-	0.03	0.27		0.24
	Total	0.07	-	-	-	-	0.07	2.50		2.43
Nov.	1 - 10	0.02	-	-	-	-	0.02	0.39		0.37
	11 - 20	0.02	-	-	-	-	0.02	0.19		0.17
	21 - 30	0.02	-	-	-	-	0.02	0.14		0.12
	Total	0.06	-	-	-	-	0.06	0.72		0.66
Dec.	1 - 10	0.02	-	-	-	-	0.02	0.16		0.14
	11 - 20	0.02	-	-	-	-	0.02	0.39		0.37
	21 - 31	0.03	-	-	-	-	0.03	0.13		0.10
	Total	0.07	-	-	-	-	0.07	0.68		0.61
Jan.	1 - 10	0.02	-	-	-	-	0.02	0.09		0.07
	11 - 20	0.02	-	-	-	-	0.02	0.06		0.04
	21 - 31	0.03	-	-	-	-	0.03	0.05		0.02
	Total	0.07	-	-	-	-	0.07	0.20		0.13
Feb.	1 - 10	0.02	-	-	-	-	0.02	0	0.02	
	11 - 20	0.02	-	-	-	-	0.02	0.06		0.04
	21 - 28	0.02	-	-	-	-	0.02	0.96		0.94
	Total	0.06	-	-	-	-	0.06	1.02	0.02	0.98
Mar.	1 - 10	0.02	-	-	-	-	0.02	0.09		0.07
	11 - 20	0.02	-	-	-	-	0.02	0.08		0.06
	21 - 31	0.03	-	-	-	-	0.03	0.26		0.23
	Total	0.07	-	-	-	-	0.07	0.43		0.36
Apr.	1 - 10	0.02	-	-	-	-	0.02	0.10		0.08
	11 - 20	0.02	-	-	-	-	0.02	0.20		0.18
	21 - 30	0.02	-	-	-	-	0.02	0.19		0.17
	Total	0.06	-	-	-	-	0.06	0.49		0.43
Annual	0.8	-	-	-	-	0.8	14.4	0	13.6	

Table 20 WATER BALANCE IN ZONE 6 (3/4)

ZONE 6		(Unit: 10 ⁶ m ³)									
Year 1996		Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
		D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			WD	(-)
May	1 - 10	0.03	-	-	-	-	0.03	0.25			0.22
	11 - 20	0.03	-	-	-	-	0.03	0.60			0.57
	21 - 31	0.03	-	-	-	-	0.03	0.21			0.18
	Total	0.09	-	-	-	-	0.09	1.06			0.97
June	1 - 10	0.03	-	-	-	-	0.03	0.39			0.36
	11 - 20	0.03	-	-	-	-	0.03	1.61			1.58
	21 - 30	0.03	-	-	-	-	0.03	0.19			0.16
	Total	0.09	-	-	-	-	0.09	2.19			2.10
July	1 - 10	0.03	-	-	-	-	0.03	0.07			0.04
	11 - 20	0.03	-	-	-	-	0.03	0	0.03		
	21 - 31	0.03	-	-	-	-	0.03	0.34			0.31
	Total	0.09	-	-	-	-	0.09	0.41	0.03		0.35
Aug.	1 - 10	0.03	-	-	-	-	0.03	0.15			0.12
	11 - 20	0.03	-	-	-	-	0.03	0.33			0.30
	21 - 31	0.03	-	-	-	-	0.03	0.13			0.10
	Total	0.09	-	-	-	-	0.09	0.61			0.52
Sep.	1 - 10	0.03	-	-	-	-	0.03	0.50			0.47
	11 - 20	0.03	-	-	-	-	0.03	1.19			1.16
	21 - 30	0.03	-	-	-	-	0.03	2.29			2.26
	Total	0.09	-	-	-	-	0.09	3.98			3.89
Oct.	1 - 10	0.03	-	-	-	-	0.03	1.87			1.84
	11 - 20	0.03	-	-	-	-	0.03	0.36			0.33
	21 - 31	0.03	-	-	-	-	0.03	0.27			0.24
	Total	0.09	-	-	-	-	0.09	2.50			2.41
Nov.	1 - 10	0.03	-	-	-	-	0.03	0.39			0.36
	11 - 20	0.03	-	-	-	-	0.03	0.19			0.16
	21 - 30	0.03	-	-	-	-	0.03	0.14			0.11
	Total	0.09	-	-	-	-	0.09	0.72			0.63
Dec.	1 - 10	0.03	-	-	-	-	0.03	0.16			0.13
	11 - 20	0.03	-	-	-	-	0.03	0.39			0.36
	21 - 31	0.03	-	-	-	-	0.03	0.13			0.10
	Total	0.09	-	-	-	-	0.09	0.68			0.59
Jan.	1 - 10	0.03	-	-	-	-	0.03	0.09			0.06
	11 - 20	0.03	-	-	-	-	0.03	0.06			0.03
	21 - 31	0.03	-	-	-	-	0.03	0.05			0.02
	Total	0.09	-	-	-	-	0.09	0.20			0.11
Feb.	1 - 10	0.03	-	-	-	-	0.03	0	0.03		
	11 - 20	0.03	-	-	-	-	0.03	0.06			0.03
	21 - 28	0.02	-	-	-	-	0.02	0.96			0.94
	Total	0.08	-	-	-	-	0.08	1.02	0.03		0.97
Mar.	1 - 10	0.03	-	-	-	-	0.03	0.09			0.06
	11 - 20	0.03	-	-	-	-	0.03	0.08			0.05
	21 - 31	0.03	-	-	-	-	0.03	0.26			0.23
	Total	0.09	-	-	-	-	0.09	0.43			0.34
Apr.	1 - 10	0.03	-	-	-	-	0.03	0.10			0.07
	11 - 20	0.03	-	-	-	-	0.03	0.20			0.17
	21 - 30	0.03	-	-	-	-	0.03	0.19			0.16
	Total	0.09	-	-	-	-	0.09	0.49			0.40
Annual		1.0	-	-	-	-	1.0	14.4	0.1		13.5

Table 20 WATER BALANCE IN ZONE 6 (4/4)

ZONE 6

(Unit: $10^6 m^3$)

Year	Demand			Available Local Water			Withdrawal	River Water	Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	River Water			(+)	(-)
2001	DID	IRD	MF	GW	LRW	NW	RW			
May	1 - 10	0.03	-	-	-	0.03	0.25			0.22
	11 - 20	0.03	-	-	-	0.03	0.60			0.57
	21 - 31	0.04	-	-	-	0.04	0.21			0.17
	Total	0.10	-	-	-	0.10	1.06			0.96
June	1 - 10	0.03	-	-	-	0.03	0.39			0.36
	11 - 20	0.03	-	-	-	0.03	1.61			1.58
	21 - 30	0.03	-	-	-	0.03	0.19			0.16
	Total	0.09	-	-	-	0.09	2.19			2.10
July	1 - 10	0.03	-	-	-	0.03	0.07			0.04
	11 - 20	0.03	-	-	-	0.03	0	0.03		
	21 - 31	0.04	-	-	-	0.04	0.34			0.30
	Total	0.10	-	-	-	0.10	0.41	0.03		0.34
Aug.	1 - 10	0.03	-	-	-	0.03	0.15			0.12
	11 - 20	0.03	-	-	-	0.03	0.33			0.30
	21 - 31	0.04	-	-	-	0.04	0.13			0.09
	Total	0.10	-	-	-	0.10	0.61			0.51
Sep.	1 - 10	0.03	-	-	-	0.03	0.50			0.47
	11 - 20	0.03	-	-	-	0.03	1.19			1.16
	21 - 30	0.03	-	-	-	0.03	2.29			2.26
	Total	0.09	-	-	-	0.09	3.98			3.69
Oct.	1 - 10	0.03	-	-	-	0.03	1.87			1.84
	11 - 20	0.03	-	-	-	0.03	0.36			0.33
	21 - 31	0.04	-	-	-	0.04	0.27			0.23
	Total	0.10	-	-	-	0.10	2.50			2.40
Nov.	1 - 10	0.03	-	-	-	0.03	0.39			0.36
	11 - 20	0.03	-	-	-	0.03	0.19			0.16
	21 - 30	0.03	-	-	-	0.03	0.14			0.11
	Total	0.09	-	-	-	0.09	0.72			0.63
Dec.	1 - 10	0.03	-	-	-	0.03	0.16			0.13
	11 - 20	0.03	-	-	-	0.03	0.39			0.36
	21 - 31	0.04	-	-	-	0.04	0.13			0.09
	Total	0.10	-	-	-	0.10	0.68			0.58
Jan.	1 - 10	0.03	-	-	-	0.03	0.09			0.06
	11 - 20	0.03	-	-	-	0.03	0.06			0.03
	21 - 31	0.04	-	-	-	0.04	0.05			0.01
	Total	0.10	-	-	-	0.10	0.20			0.10
Feb.	1 - 10	0.03	-	-	-	0.03	0	0.03		
	11 - 20	0.03	-	-	-	0.03	0.06			0.03
	21 - 28	0.03	-	-	-	0.03	0.96			0.93
	Total	0.09	-	-	-	0.09	1.02	0.03		0.96
Mar.	1 - 10	0.03	-	-	-	0.03	0.09			0.06
	11 - 20	0.03	-	-	-	0.03	0.08			0.05
	21 - 31	0.04	-	-	-	0.04	0.26			0.22
	Total	0.10	-	-	-	0.10	0.43			0.33
Apr.	1 - 10	0.03	-	-	-	0.03	0.10			0.07
	11 - 20	0.03	-	-	-	0.03	0.20			0.17
	21 - 30	0.03	-	-	-	0.03	0.19			0.16
	Total	0.09	-	-	-	0.09	0.49			0.40
Annual	1.1	-	-	-	-	1.1	14.4	0.1		13.4

Table 21 WATER BALANCE IN ZONE 7 (1/4)

(Unit: 10⁶ m³)

ZONE 7

Year	D & I	Demand			Available Local Water			Water Deficit	
		DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)
1986									
May	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 31	0.16	-	-	-	-	0.16	-	0.16
	Total	0.46	-	-	-	-	0.46	-	0.46
June	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 30	0.15	-	-	-	-	0.15	-	0.15
	Total	0.45	-	-	-	-	0.45	-	0.45
July	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 31	0.16	-	-	-	-	0.16	-	0.16
	Total	0.46	-	-	-	-	0.46	-	0.46
Aug.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 31	0.16	-	-	-	-	0.16	-	0.16
	Total	0.46	-	-	-	-	0.46	-	0.46
Sep.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 30	0.15	-	-	-	-	0.15	-	0.15
	Total	0.45	-	-	-	-	0.45	-	0.45
Oct.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 31	0.16	-	-	-	-	0.16	-	0.16
	Total	0.46	-	-	-	-	0.46	-	0.46
Nov.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 30	0.15	-	-	-	-	0.15	-	0.15
	Total	0.45	-	-	-	-	0.45	-	0.45
Dec.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 31	0.16	-	-	-	-	0.16	-	0.16
	Total	0.46	-	-	-	-	0.46	-	0.46
Jan.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 31	0.16	-	-	-	-	0.16	-	0.16
	Total	0.46	-	-	-	-	0.46	-	0.46
Feb.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 28	0.14	-	-	-	-	0.14	-	0.14
	Total	0.44	-	-	-	-	0.44	-	0.44
Mar.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 31	0.16	-	-	-	-	0.16	-	0.16
	Total	0.46	-	-	-	-	0.46	-	0.46
Apr.	1 - 10	0.15	-	-	-	-	0.15	-	0.15
	11 - 20	0.15	-	-	-	-	0.15	-	0.15
	21 - 30	0.15	-	-	-	-	0.15	-	0.15
	Total	0.45	-	-	-	-	0.45	-	0.45
Annual		5.5	-	-	-	-	5.5	-	5.5

Table 21 WATER BALANCE IN ZONE 7 (2/4)

(Unit: $10^6 m^3$)

ZONE 7		Demand			Available Local Water			Water Deficit		
Year	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water	(+)	WD	(-)
1991	DID	IRD	MF	CW	LRW	NW	RW			
May	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 31	0.20	-	-	-	0.20	-	0.20		
	Total	0.58	-	-	-	0.58	-	0.58		
June	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 30	0.19	-	-	-	0.19	-	0.19		
	Total	0.57	-	-	-	0.57	-	0.57		
July	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 31	0.20	-	-	-	0.20	-	0.20		
	Total	0.58	-	-	-	0.58	-	0.58		
Aug.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 31	0.20	-	-	-	0.20	-	0.20		
	Total	0.58	-	-	-	0.58	-	0.58		
Sep.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 30	0.19	-	-	-	0.19	-	0.19		
	Total	0.57	-	-	-	0.57	-	0.57		
Oct.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 31	0.20	-	-	-	0.20	-	0.20		
	Total	0.58	-	-	-	0.58	-	0.58		
Nov.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 30	0.19	-	-	-	0.19	-	0.19		
	Total	0.57	-	-	-	0.57	-	0.57		
Dec.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 31	0.20	-	-	-	0.20	-	0.20		
	Total	0.58	-	-	-	0.58	-	0.58		
Jan.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 31	0.20	-	-	-	0.20	-	0.20		
	Total	0.58	-	-	-	0.58	-	0.58		
Feb.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 28	0.17	-	-	-	0.17	-	0.17		
	Total	0.55	-	-	-	0.55	-	0.55		
Mar.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 31	0.20	-	-	-	0.20	-	0.20		
	Total	0.58	-	-	-	0.58	-	0.58		
Apr.	1 - 10	0.19	-	-	-	0.19	-	0.19		
	11 - 20	0.19	-	-	-	0.19	-	0.19		
	21 - 30	0.19	-	-	-	0.19	-	0.19		
	Total	0.57	-	-	-	0.57	-	0.57		
Annual	6.8	-	-	-	-	6.8	-	6.8		

Table 21 WATER BALANCE IN ZONE 7 (3/4)

(Unit: 10^6 m^3)

Year 1996	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			(-)	
May	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 31	0.23	-	-	-	-	0.23	-	0.23	
	Total	0.65	-	-	-	-	0.65	-	0.65	
June	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 30	0.21	-	-	-	-	0.21	-	0.21	
	Total	0.63	-	-	-	-	0.63	-	0.63	
July	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 31	0.23	-	-	-	-	0.23	-	0.23	
	Total	0.65	-	-	-	-	0.65	-	0.65	
Aug.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 31	0.23	-	-	-	-	0.23	-	0.23	
	Total	0.65	-	-	-	-	0.65	-	0.65	
Sep.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 30	0.21	-	-	-	-	0.21	-	0.21	
	Total	0.63	-	-	-	-	0.63	-	0.63	
Oct.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 31	0.23	-	-	-	-	0.23	-	0.23	
	Total	0.65	-	-	-	-	0.65	-	0.65	
Nov.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 30	0.21	-	-	-	-	0.21	-	0.21	
	Total	0.63	-	-	-	-	0.63	-	0.63	
Dec.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 31	0.23	-	-	-	-	0.23	-	0.23	
	Total	0.65	-	-	-	-	0.65	-	0.65	
Jan.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 31	0.23	-	-	-	-	0.23	-	0.23	
	Total	0.65	-	-	-	-	0.65	-	0.65	
Feb.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 28	0.21	-	-	-	-	0.21	-	0.21	
	Total	0.63	-	-	-	-	0.63	-	0.63	
Mar.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 31	0.23	-	-	-	-	0.23	-	0.23	
	Total	0.65	-	-	-	-	0.65	-	0.65	
Apr.	1 - 10	0.21	-	-	-	-	0.21	-	0.21	
	11 - 20	0.21	-	-	-	-	0.21	-	0.21	
	21 - 30	0.21	-	-	-	-	0.21	-	0.21	
	Total	0.63	-	-	-	-	0.63	-	0.63	
Annual		7.8	-	-	-	-	7.8	-	7.8	

Table 21 WATER BALANCE IN ZONE 7 (4/4)

ZONE 7

(Unit: $10^6 m^3$)

Year 2001	Demand			Available Local Water			River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW		(+)	(-)
May	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 31	0.26	-	-	-	0.26	-	0.26	
	Total	0.74	-	-	-	0.74	-	0.74	
June	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 30	0.24	-	-	-	0.24	-	0.24	
	Total	0.72	-	-	-	0.72	-	0.72	
July	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 31	0.26	-	-	-	0.26	-	0.26	
	Total	0.74	-	-	-	0.74	-	0.74	
Aug.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 31	0.26	-	-	-	0.26	-	0.26	
	Total	0.74	-	-	-	0.74	-	0.74	
Sep.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 30	0.24	-	-	-	0.24	-	0.24	
	Total	0.72	-	-	-	0.72	-	0.72	
Oct.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 31	0.26	-	-	-	0.26	-	0.26	
	Total	0.74	-	-	-	0.74	-	0.74	
Nov.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 30	0.24	-	-	-	0.24	-	0.24	
	Total	0.72	-	-	-	0.72	-	0.72	
Dec.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 31	0.26	-	-	-	0.26	-	0.26	
	Total	0.74	-	-	-	0.74	-	0.74	
Jan.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 31	0.26	-	-	-	0.26	-	0.26	
	Total	0.74	-	-	-	0.74	-	0.74	
Feb.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 28	0.22	-	-	-	0.22	-	0.22	
	Total	0.70	-	-	-	0.70	-	0.70	
Mar.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 31	0.26	-	-	-	0.26	-	0.26	
	Total	0.74	-	-	-	0.74	-	0.74	
Apr.	1 - 10	0.24	-	-	-	0.24	-	0.24	
	11 - 20	0.24	-	-	-	0.24	-	0.24	
	21 - 30	0.24	-	-	-	0.24	-	0.24	
	Total	0.72	-	-	-	0.72	-	0.72	
Annual		8.8	-	-	-	8.8	-	8.8	

Table 22 WATER BALANCE IN ZONE 8 (1/4)

ZONE 8

(Unit: $10^6 m^3$)

Year 1985	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			WD (-)	
May	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 31	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
June	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
July	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 31	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Aug.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 31	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Sep.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Oct.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 31	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Nov.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Dec.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 31	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Jan.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 31	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Feb.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 28	0.01	-	-	-	0.01	0.01	-	0	
	Total	0.05	-	-	-	0.03	0.02	-	0.02	
Mar.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 31	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Apr.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01	
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01	
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.06	-	-	-	0.03	0.03	-	0.03	
Annual	0.7	-	-	-	0.4	0.3	-	0.3		

Table 22 WATER BALANCE IN ZONE 8 (2/4)

ZONE 8 (Unit: 10⁶ m³)

Year	Demand			Available Local Water				Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water	(+)	(-)
	DID	IRD	MF	GW	LRW	NW	RW	WD	(-)
1991									
May	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02
	Total	0.07	-	-	-	0.03	0.04	-	0.04
June	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01
	Total	0.06	-	-	-	0.03	0.03	-	0.03
July	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02
	Total	0.07	-	-	-	0.03	0.04	-	0.04
Aug.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02
	Total	0.07	-	-	-	0.03	0.04	-	0.04
Sep.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01
	Total	0.06	-	-	-	0.03	0.03	-	0.03
Oct.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02
	Total	0.07	-	-	-	0.03	0.04	-	0.04
Nov.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01
	Total	0.06	-	-	-	0.03	0.03	-	0.03
Dec.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02
	Total	0.07	-	-	-	0.03	0.04	-	0.04
Jan.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02
	Total	0.07	-	-	-	0.03	0.04	-	0.04
Feb.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 29	0.01	-	-	-	0.01	0	-	0
	Total	0.05	-	-	-	0.03	0.02	-	0.02
Mar.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02
	Total	0.07	-	-	-	0.03	0.04	-	0.04
Apr.	1 - 10	0.02	-	-	-	0.01	0.01	-	0.01
	11 - 20	0.02	-	-	-	0.01	0.01	-	0.01
	21 - 30	0.02	-	-	-	0.01	0.01	-	0.01
	Total	0.06	-	-	-	0.03	0.03	-	0.03
Annual		0.9	-	-	-	0.4	0.5	-	0.5

Table 22 WATER BALANCE IN ZONE 8 (3/4)

(Unit: $10^6 m^3$)

ZONE 8										
Year 1996		Demand			Available Local Water				Water Deficit	
		D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD (-)
May	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
June	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 30	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
July	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Aug.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Sep.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 30	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Oct.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Nov.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 30	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Dec.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Jan.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Feb.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 28	0.02	-	-	-	0.01	0.01	-	0.01	
	Total	0.08	-	-	-	0.03	0.05	-	0.05	
Mar.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 31	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Apr.	1 - 10	0.03	-	-	-	0.01	0.02	-	0.02	
	11 - 20	0.03	-	-	-	0.01	0.02	-	0.02	
	21 - 30	0.03	-	-	-	0.01	0.02	-	0.02	
	Total	0.09	-	-	-	0.03	0.06	-	0.06	
Annual	1.0	-	-	-	0.4	0.6	-	0.6		

Table 22 WATER BALANCE IN ZONE 8 (4/4)

ZONE 8

(Unit: $10^6 m^3$)

Year	Demand			Available Local Water			River Water	Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal		(+)	WD (-)
2001	DID	IRD	MF	GW	LRW	NW	RW		
May	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 31	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
June	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 30	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
July	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 31	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Aug.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 31	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Sep.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 30	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Oct.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 31	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Nov.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 30	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Dec.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 31	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Jan.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 31	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Feb.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 28	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Mar.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 31	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Apr.	1 - 10	0.03	-	-	-	0.01	-	0.02	0.02
	11 - 20	0.03	-	-	-	0.01	-	0.02	0.02
	21 - 30	0.03	-	-	-	0.01	-	0.02	0.02
	Total	0.09	-	-	-	0.03	-	0.06	0.06
Annual	1.1	-	-	-	0.4	-	0.7	0.7	

Table 23 WATER BALANCE IN ZONE 9 (1/4)

ZONE 9

(Unit: 10⁶m³)

Year 1986	Demand			Available Local Water			River Water RW	Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal		(+)	(-)
	DID	IRD	MF	GW	LRW	NW			
May	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 31	1.02	-	-	0.01	-	1.01	-	1.01
	Total	2.88	-	-	0.01	-	2.87	-	2.87
June	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 30	0.93	-	-	0	-	0.93	-	0.93
	Total	2.79	-	-	0	-	2.79	-	2.79
July	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 31	1.02	-	-	0.01	-	1.01	-	1.01
	Total	2.88	-	-	0.01	-	2.87	-	2.87
Aug.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 31	1.02	-	-	0.01	-	1.01	-	1.01
	Total	2.88	-	-	0.01	-	2.87	-	2.87
Sep.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 30	0.93	-	-	0	-	0.93	-	0.93
	Total	2.79	-	-	0	-	2.79	-	2.79
Oct.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 31	1.02	-	-	0.01	-	1.01	-	1.01
	Total	2.88	-	-	0.01	-	2.87	-	2.87
Nov.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 30	0.93	-	-	0	-	0.93	-	0.93
	Total	2.79	-	-	0	-	2.79	-	2.79
Dec.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 31	1.02	-	-	0.01	-	1.01	-	1.01
	Total	2.88	-	-	0.01	-	2.87	-	2.87
Jan.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 31	1.02	-	-	0.01	-	1.01	-	1.01
	Total	2.88	-	-	0.01	-	2.87	-	2.87
Feb.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 28	0.74	-	-	0	-	0.74	-	0.74
	Total	2.60	-	-	0	-	2.60	-	2.60
Mar.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 31	1.02	-	-	0.01	-	1.01	-	1.01
	Total	2.88	-	-	0.01	-	2.87	-	2.87
Apr.	1 - 10	0.93	-	-	0	-	0.93	-	0.93
	11 - 20	0.93	-	-	0	-	0.93	-	0.93
	21 - 30	0.93	-	-	0	-	0.93	-	0.93
	Total	2.79	-	-	0	-	2.79	-	2.79
Annual	33.9	-	-	0.2	-	33.7	-	33.7	

Table 23 WATER BALANCE IN ZONE 9 (2/4)

ZONE 9

(Unit: $10^6 m^3$)

Year 1991	Demand			Available Local Water				Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD	(-)
May	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 31	1.13	-	-	0.01	-	1.12	-	1.12	
	Total	3.17	-	-	0.01	-	3.16	-	3.16	
June	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 30	1.02	-	-	0	-	1.02	-	1.02	
	Total	3.06	-	-	0	-	3.06	-	3.06	
July	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 31	1.13	-	-	0.01	-	1.12	-	1.12	
	Total	3.17	-	-	0.01	-	3.16	-	3.16	
Aug.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 31	1.13	-	-	0.01	-	1.12	-	1.12	
	Total	3.17	-	-	0.01	-	3.16	-	3.16	
Sep.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 30	1.02	-	-	0	-	1.02	-	1.02	
	Total	3.06	-	-	0	-	3.06	-	3.06	
Oct.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 31	1.13	-	-	0.01	-	1.12	-	1.12	
	Total	3.17	-	-	0.01	-	3.16	-	3.16	
Nov.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 30	1.02	-	-	0	-	1.02	-	1.02	
	Total	3.06	-	-	0	-	3.06	-	3.06	
Dec.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 31	1.13	-	-	0.01	-	1.12	-	1.12	
	Total	3.17	-	-	0.01	-	3.16	-	3.16	
Jan.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 31	1.13	-	-	0.01	-	1.12	-	1.12	
	Total	3.17	-	-	0.01	-	3.16	-	3.16	
Feb.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 28	0.82	-	-	0	-	0.82	-	0.82	
	Total	2.86	-	-	0	-	2.86	-	2.86	
Mar.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 31	1.13	-	-	0.01	-	1.12	-	1.12	
	Total	3.17	-	-	0.01	-	3.16	-	3.16	
Apr.	1 - 10	1.02	-	-	0	-	1.02	-	1.02	
	11 - 20	1.02	-	-	0	-	1.02	-	1.02	
	21 - 30	1.02	-	-	0	-	1.02	-	1.02	
	Total	3.06	-	-	0	-	3.06	-	3.06	
Annual	37.4	-	-	0.2	-	37.2	-	37.2		

Table 23 WATER BALANCE IN ZONE 9 (3/4)

ZONE 9

(Unit: 10^6 m^3)

Year 1996	Demand			Available Local Water				Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD	(-)
May	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 31	1.24	-	-	0.01	-	1.23	-	1.23	
	Total	3.50	-	-	0.01	-	3.49	-	3.49	
June	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 30	1.13	-	-	0	-	1.13	-	1.13	
	Total	3.39	-	-	0	-	3.39	-	3.39	
July	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 31	1.24	-	-	0.01	-	1.23	-	1.23	
	Total	3.50	-	-	0.01	-	3.49	-	3.49	
Aug.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 31	1.24	-	-	0.01	-	1.23	-	1.23	
	Total	3.50	-	-	0.01	-	3.49	-	3.49	
Sep.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 30	1.13	-	-	0	-	1.13	-	1.13	
	Total	3.39	-	-	0	-	3.39	-	3.39	
Oct.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 31	1.24	-	-	0.01	-	1.23	-	1.23	
	Total	3.50	-	-	0.01	-	3.49	-	3.49	
Nov.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 30	1.13	-	-	0	-	1.13	-	1.13	
	Total	3.39	-	-	0	-	3.39	-	3.39	
Dec.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 31	1.24	-	-	0.01	-	1.23	-	1.23	
	Total	3.50	-	-	0.01	-	3.49	-	3.49	
Jan.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 31	1.24	-	-	0.01	-	1.23	-	1.23	
	Total	3.50	-	-	0.01	-	3.49	-	3.49	
Feb.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 29	0.90	-	-	0	-	0.90	-	0.90	
	Total	3.16	-	-	0	-	3.16	-	3.16	
Mar.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 31	1.24	-	-	0.01	-	1.23	-	1.23	
	Total	3.50	-	-	0.01	-	3.49	-	3.49	
Apr.	1 - 10	1.13	-	-	0	-	1.13	-	1.13	
	11 - 20	1.13	-	-	0	-	1.13	-	1.13	
	21 - 30	1.13	-	-	0	-	1.13	-	1.13	
	Total	3.39	-	-	0	-	3.39	-	3.39	
Annual	41.3	-	-	0.2	-	41.1	-	41.1		

Table 23 WATER BALANCE IN ZONE 9 (4/4)

ZONE 9

(Unit: 10⁶ m³)

Year	D & I	Demand		Available Local Water				Water Deficit		
		DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD (-)
2001	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	May 11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 31	1.38	-	-	0.01	-	1.37	-	1.37	
	Total	3.86	-	-	0.01	-	3.85	-	3.85	
June	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 30	1.24	-	-	0	-	1.24	-	1.24	
	Total	3.72	-	-	0	-	3.72	-	3.72	
July	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 31	1.38	-	-	0.01	-	1.37	-	1.37	
	Total	3.86	-	-	0.01	-	3.85	-	3.85	
Aug.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 31	1.38	-	-	0.01	-	1.37	-	1.37	
	Total	3.86	-	-	0.01	-	3.85	-	3.85	
Sep.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 30	1.24	-	-	0	-	1.24	-	1.24	
	Total	3.72	-	-	0	-	3.72	-	3.72	
Oct.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 31	1.38	-	-	0.01	-	1.37	-	1.37	
	Total	3.86	-	-	0.01	-	3.85	-	3.85	
Nov.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 30	1.24	-	-	0	-	1.24	-	1.24	
	Total	3.72	-	-	0	-	3.72	-	3.72	
Dec.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 31	1.38	-	-	0.01	-	1.37	-	1.37	
	Total	3.86	-	-	0.01	-	3.85	-	3.85	
Jan.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 31	1.38	-	-	0.01	-	1.37	-	1.37	
	Total	3.86	-	-	0.01	-	3.85	-	3.85	
Feb.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 28	1.00	-	-	0	-	1.00	-	1.00	
	Total	3.48	-	-	0	-	3.48	-	3.48	
Mar.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 31	1.38	-	-	0.1	-	1.37	-	1.37	
	Total	3.86	-	-	0.01	-	3.85	-	3.85	
Apr.	1 - 10	1.24	-	-	0	-	1.24	-	1.24	
	11 - 20	1.24	-	-	0	-	1.24	-	1.24	
	21 - 30	1.24	-	-	0	-	1.24	-	1.24	
	Total	3.72	-	-	0	-	3.72	-	3.72	
Annual	45.5	-	-	0.2	-	45.3	-	45.3		

Table 24 WATER BALANCE IN ZONE 10 (1/4)

ZONE 10

(Unit: 10⁶m³)

Year 1986	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	(+)			WD	(-)
	DID	IRD	MF	GW	LRW					
	1 - 10	0.12	0.14	0.33	-	-	0.59	0.66		0.07
May	11 - 20	0.12	0.14	0.33	-	-	0.59	0.46	0.13	
	21 - 31	0.12	0	0.36	-	-	0.48	0.44	0.04	
	Total	0.36	0.28	1.02	-	-	1.66	1.56	0.17	0.07
	1 - 10	0.12	0.09	0.33	-	-	0.54	0.55		0.01
June	11 - 20	0.12	0.18	0.33	-	-	0.63	3.63		3.00
	21 - 30	0.12	0.75	0.33	-	-	1.20	0.98	0.22	
	Total	0.36	1.02	0.99	-	-	2.37	5.16	0.22	3.01
	1 - 10	0.12	2.11	0.33	-	-	2.56	0.80	1.76	
July	11 - 20	0.12	7.23	0.33	-	-	7.68	1.60	6.08	
	21 - 31	0.12	6.04	0.36	-	-	6.52	5.38	1.14	
	Total	0.36	15.38	1.02	-	-	16.76	7.78	8.98	
	1 - 10	0.12	11.91	0.33	-	-	12.36	0.79	11.57	
Aug.	11 - 20	0.12	13.89	0.33	-	-	14.34	0.38	13.96	
	21 - 31	0.12	12.67	0.36	-	-	13.15	0.31	12.84	
	Total	0.36	38.47	1.02	-	-	39.85	1.48	38.37	
	1 - 10	0.12	9.41	0.33	-	-	9.86	1.84	8.02	
Sep.	11 - 20	0.12	1.59	0.33	-	-	2.04	4.32		2.28
	21 - 30	0.12	0	0.33	-	-	0.45	9.76		9.31
	Total	0.36	11.00	0.99	-	-	12.35	15.92	8.02	11.59
	1 - 10	0.12	8.61	0.33	-	-	9.06	24.83		15.77
Oct.	11 - 20	0.12	8.40	0.33	-	-	8.85	1.98	6.87	
	21 - 31	0.12	1.31	0.36	-	-	1.79	3.95		2.16
	Total	0.36	18.32	1.02	-	-	19.70	30.76	6.87	17.93
	1 - 10	0.12	3.65	0.33	-	-	4.10	1.26	2.84	
Nov.	11 - 20	0.12	1.89	0.33	-	-	2.34	0.44	1.90	
	21 - 30	0.12	2.20	0.33	-	-	2.65	0.34	2.31	
	Total	0.36	7.74	0.99	-	-	9.09	2.04	7.05	
	1 - 10	0.12	2.52	0.33	-	-	2.97	0.41	2.56	
Dec.	11 - 20	0.12	3.06	0.33	-	-	3.51	0.21	3.30	
	21 - 31	0.12	3.60	0.36	-	-	4.08	0.30	3.78	
	Total	0.36	9.18	1.02	-	-	10.56	0.92	9.64	
	1 - 10	0.12	4.07	0.33	-	-	4.52	0.13	4.39	
Jan.	11 - 20	0.12	4.60	0.33	-	-	5.05	0.13	4.92	
	21 - 31	0.12	5.40	0.36	-	-	5.88	0.14	5.74	
	Total	0.36	14.07	1.02	-	-	15.45	0.40	15.05	
	1 - 10	0.12	5.61	0.33	-	-	6.06	0.26	5.80	
Feb.	11 - 20	0.12	5.09	0.33	-	-	5.54	0.14	5.40	
	21 - 28	0.10	3.86	0.29	-	-	4.25	0.29	3.96	
	Total	0.34	14.56	0.95	-	-	15.85	0.69	15.16	
	1 - 10	0.12	4.69	0.33	-	-	5.14	0.19	4.95	
Mar.	11 - 20	0.12	2.12	0.33	-	-	2.57	0.45	2.12	
	21 - 31	0.12	1.76	0.36	-	-	2.24	1.94	0.30	
	Total	0.36	8.57	1.02	-	-	9.95	2.58	7.37	
	1 - 10	0.12	1.65	0.33	-	-	2.10	0.23	1.87	
Apr.	11 - 20	0.12	0.09	0.33	-	-	0.54	0.76		0.22
	21 - 30	0.12	0.59	0.33	-	-	1.04	0.72	0.32	
	Total	0.36	2.33	0.99	-	-	3.68	1.71	2.19	0.22
	Annual	4.2	140.9	12.0	-	-	157.1	71.1	118.9	32.9

Note : Industrial water demand of 1.6 MCM/yr is excluded because it depends on the Dok Krai reservoir.

Table 24 WATER BALANCE IN ZONE 10 (2/4)

ZONE 10

(Unit: 10^6 m^3)

Year 1991	Demand			Available Local Water			River Water RW	Water Deficit		
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal		(+)	(-)	
	DID	IRD	MF	GW	LRW	NW		WD	WD	
May	1 - 10	0.16	0.14	0.33	-	-	0.63	0.66		0.03
	11 - 20	0.16	0.14	0.33	-	-	0.63	0.46	0.17	
	21 - 31	0.18	0.	0.36	-	-	0.55	0.44	0.11	
	Total	0.50	0.28	1.02	-	-	1.81	1.56	0.28	0.03
June	1 - 10	0.16	0.09	0.33	-	-	0.58	0.55	0.03	
	11 - 20	0.16	0.18	0.33	-	-	0.67	3.63		2.96
	21 - 30	0.16	0.75	0.33	-	-	1.24	0.98	0.26	
	Total	0.48	1.02	0.99	-	-	2.49	5.16	0.29	2.96
July	1 - 10	0.16	2.11	0.33	-	-	2.60	0.80	1.80	
	11 - 20	0.16	7.23	0.33	-	-	7.72	1.60	6.12	
	21 - 31	0.18	6.04	0.36	-	-	6.59	5.38	1.21	
	Total	0.50	15.38	1.02	-	-	16.91	7.78	9.13	
Aug.	1 - 10	0.16	11.91	0.33	-	-	12.40	0.79	11.61	
	11 - 20	0.16	13.89	0.33	-	-	14.38	0.38	14.00	
	21 - 31	0.18	12.67	0.36	-	-	13.22	0.31	12.91	
	Total	0.50	38.47	1.02	-	-	40.00	1.48	38.52	
Sep.	1 - 10	0.16	9.41	0.33	-	-	9.90	1.84	8.06	
	11 - 20	0.16	1.59	0.33	-	-	2.08	4.32		2.24
	21 - 30	0.16	0	0.33	-	-	0.49	9.76		9.27
	Total	0.48	11.00	9.99	-	-	12.47	15.92	8.06	11.51
Oct.	1 - 10	0.16	8.61	0.33	-	-	9.10	24.83		15.73
	11 - 20	0.16	8.40	0.33	-	-	8.89	1.98	6.91	
	21 - 31	0.18	1.31	0.36	-	-	1.86	3.95		2.09
	Total	0.50	18.32	1.02	-	-	19.85	30.76	6.91	17.82
Nov.	1 - 10	0.16	3.65	0.33	-	-	4.14	1.26	2.88	
	11 - 20	0.16	1.89	0.33	-	-	2.38	0.44	1.94	
	21 - 30	0.16	2.20	0.33	-	-	2.69	0.34	2.35	
	Total	0.48	7.74	0.99	-	-	9.21	2.04	7.17	
Dec.	1 - 10	0.16	2.52	0.33	-	-	3.01	0.41	2.60	
	11 - 20	0.16	3.06	0.33	-	-	3.55	0.21	3.34	
	21 - 31	0.18	3.60	0.36	-	-	4.15	0.30	3.85	
	Total	0.50	9.18	1.02	-	-	10.71	0.92	9.79	
Jan.	1 - 10	0.16	4.07	0.33	-	-	4.56	0.13	4.43	
	11 - 20	0.16	4.60	0.33	-	-	5.09	0.13	4.96	
	21 - 31	0.18	5.40	0.36	-	-	5.95	0.14	5.81	
	Total	0.50	14.07	1.02	-	-	15.60	0.40	15.20	
Feb.	1 - 10	0.16	5.61	0.33	-	-	6.10	0.26	5.84	
	11 - 20	0.16	5.09	0.33	-	-	5.58	0.14	5.44	
	21 - 28	0.13	3.86	0.29	-	-	4.30	0.29	4.01	
	Total	0.45	14.56	0.95	-	-	15.98	0.69	15.29	
Mar.	1 - 10	0.16	4.69	0.33	-	-	5.18	0.19	4.99	
	11 - 20	0.16	2.12	0.33	-	-	2.61	0.45	2.16	
	21 - 31	0.18	1.76	0.36	-	-	2.31	1.94	0.37	
	Total	0.50	8.57	1.02	-	-	10.10	2.58	7.52	
Apr.	1 - 10	0.16	1.65	0.33	-	-	2.14	0.23	1.91	
	11 - 20	0.16	0.09	0.33	-	-	0.58	0.76		0.18
	21 - 30	0.16	0.59	0.33	-	-	1.08	0.72	0.36	
	Total	0.48	2.33	0.99	-	-	3.80	1.71	2.27	0.18
Annual		6.0	140.9	12.0	-	-	158.9	71.1	120.3	32.5

Note : Industrial water demand of 1.6 MCM/yr is excluded because it depends on the Dok Krai reservoir.

Table 24 WATER BALANCE IN ZONE 10 (3/4)

ZONE 10

(Unit: 10⁶ m³)

Year 1996	Demand			Available Local Water				Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD (-)	
May	1 - 10	0.25	0.14	0.33	-	-	0.72	0.66	0.06	
	11 - 20	0.25	0.14	0.33	-	-	0.72	0.46	0.26	
	21 - 31	0.29	0	0.36	-	-	0.65	0.44	0.21	
	Total	0.79	0.28	1.02	-	-	2.09	1.56	0.53	
June	1 - 10	0.25	0.09	0.33	-	-	0.67	0.55	0.12	
	11 - 20	0.25	0.18	0.33	-	-	0.76	3.63		2.87
	21 - 30	0.25	0.75	0.33	-	-	1.33	0.98	0.35	
	Total	0.75	1.02	0.99	-	-	2.76	5.16	0.47	2.87
July	1 - 10	0.25	2.11	0.33	-	-	2.69	0.80	1.89	
	11 - 20	0.25	7.23	0.33	-	-	7.81	1.60	6.21	
	21 - 31	0.29	6.04	0.36	-	-	6.69	5.38	1.31	
	Total	0.79	15.38	1.02	-	-	17.19	7.78	9.41	
Aug.	1 - 10	0.25	11.91	0.33	-	-	12.49	0.79	11.70	
	11 - 20	0.25	13.89	0.33	-	-	14.47	0.38	14.09	
	21 - 31	0.29	12.67	0.36	-	-	13.32	0.31	13.01	
	Total	0.79	38.47	1.02	-	-	40.28	1.48	38.80	
Sep.	1 - 10	0.25	9.41	0.33	-	-	9.99	1.84	8.15	
	11 - 20	0.25	1.59	0.33	-	-	2.17	4.32		2.15
	21 - 30	0.25	0	0.33	-	-	0.58	9.76		9.18
	Total	0.75	11.00	0.99	-	-	12.74	15.92	8.15	11.33
Oct.	1 - 10	0.25	8.61	0.33	-	-	9.19	24.83		15.64
	11 - 20	0.25	8.40	0.33	-	-	8.98	1.98	7.00	
	21 - 31	0.29	1.31	0.36	-	-	1.96	3.95		2.01
	Total	0.79	18.32	1.02	-	-	20.13	30.76	7.00	17.65
Nov.	1 - 10	0.25	3.65	0.33	-	-	4.23	1.26	2.97	
	11 - 20	0.25	1.89	0.33	-	-	2.47	0.44	2.03	
	21 - 30	0.25	2.20	0.33	-	-	2.78	0.34	2.44	
	Total	0.75	7.74	0.99	-	-	9.48	2.04	7.44	
Dec.	1 - 10	0.25	2.52	0.33	-	-	3.10	0.41	2.69	
	11 - 20	0.25	3.06	0.33	-	-	3.64	0.21	3.43	
	21 - 31	0.29	3.60	0.36	-	-	4.25	0.30	3.95	
	Total	0.79	9.18	1.02	-	-	10.99	0.92	10.07	
Jan.	1 - 10	0.25	4.07	0.33	-	-	4.65	0.13	4.52	
	11 - 20	0.25	4.60	0.33	-	-	5.18	0.13	5.05	
	21 - 31	0.29	5.40	0.36	-	-	6.05	0.14	5.91	
	Total	0.79	14.07	1.02	-	-	15.88	0.40	15.48	
Feb.	1 - 10	0.25	5.61	0.33	-	-	6.19	0.26	5.93	
	11 - 20	0.25	5.09	0.33	-	-	5.67	0.14	5.53	
	21 - 28	0.23	3.86	0.29	-	-	4.38	0.29	4.09	
	Total	0.73	14.56	0.95	-	-	16.25	0.69	15.56	
Mar.	1 - 10	0.25	4.69	0.33	-	-	5.27	0.19	5.08	
	11 - 20	0.25	2.12	0.33	-	-	2.70	0.45	2.25	
	21 - 31	0.29	1.76	0.36	-	-	2.41	1.94	0.47	
	Total	0.79	8.57	1.02	-	-	10.38	2.58	7.80	
Apr.	1 - 10	0.25	1.65	0.33	-	-	2.23	0.23	2.00	
	11 - 20	0.25	0.09	0.33	-	-	0.67	0.76		0.09
	21 - 30	0.25	0.59	0.33	-	-	1.17	0.72	0.45	
	Total	0.75	2.33	0.99	-	-	4.07	1.71	2.45	0.09
Annual		9.3	140.9	12.0	-	-	162.2	71.1	123.1	32.0

Note : Industrial water demand of 1.6 MCM/yr is excluded because it depends on the Dok Krai reservoir.

Table 24 WATER BALANCE IN ZONE 10 (4/4)

ZONE 10

(Unit: 10⁶ m³)

Year 2001	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	(+)			WD (-)	
May	1 - 10	0.36	0.14	0.33	-	-	0.83	0.66	0.17	
	11 - 20	0.36	0.14	0.33	-	-	0.83	0.46	0.37	
	21 - 31	0.38	0.00	0.36	-	-	0.74	0.44	0.30	
	Total	1.10	0.28	1.02	-	-	2.40	1.56	0.84	
June	1 - 10	0.36	0.09	0.33	-	-	0.78	0.55	0.23	
	11 - 20	0.36	0.18	0.33	-	-	0.87	3.63		2.76
	21 - 30	0.36	0.75	0.33	-	-	1.44	0.98	0.46	
	Total	1.08	1.02	0.99	-	-	3.09	5.16	0.69	2.76
July	1 - 10	0.36	2.11	0.33	-	-	2.80	0.80	2.00	
	11 - 20	0.36	7.23	0.33	-	-	7.92	1.60	6.32	
	21 - 31	0.38	6.04	0.36	-	-	6.78	5.38	1.40	
	Total	1.10	15.38	1.02	-	-	17.50	7.78	9.72	
Aug.	1 - 10	0.36	11.91	0.33	-	-	12.60	0.79	11.81	
	11 - 20	0.36	13.89	0.33	-	-	14.58	0.38	14.20	
	21 - 31	0.38	12.67	0.36	-	-	13.41	0.31	13.10	
	Total	1.10	38.47	1.02	-	-	40.59	1.48	39.11	
Sep.	1 - 10	0.36	9.41	0.33	-	-	10.10	1.84	8.26	
	11 - 20	0.36	1.59	0.33	-	-	2.28	4.32		2.04
	21 - 30	0.36	0.00	0.33	-	-	0.69	9.76		9.07
	Total	1.08	11.00	0.99	-	-	13.07	15.92	8.26	11.11
Oct.	1 - 10	0.36	8.61	0.33	-	-	9.30	24.83		15.53
	11 - 20	0.36	8.40	0.38	-	-	9.09	1.98	7.11	
	21 - 31	0.38	1.31	0.36	-	-	2.05	3.95		1.90
	Total	1.10	18.32	1.02	-	-	20.44	30.76	7.11	17.43
Nov.	1 - 10	0.36	3.65	0.33	-	-	4.34	1.26	3.08	
	11 - 20	0.36	1.89	0.33	-	-	2.58	0.44	2.14	
	21 - 30	0.36	2.20	0.33	-	-	2.89	0.34	2.55	
	Total	1.08	7.74	0.99	-	-	9.81	2.04	7.77	
Dec.	1 - 10	0.36	2.52	0.33	-	-	3.21	0.41	2.80	
	11 - 20	0.36	3.06	0.33	-	-	3.75	0.21	3.54	
	21 - 31	0.38	3.60	0.36	-	-	4.34	0.30	4.04	
	Total	1.10	9.18	1.02	-	-	11.30	0.92	10.38	
Jan.	1 - 10	0.36	4.07	0.33	-	-	4.76	0.13	4.63	
	11 - 20	0.36	4.60	0.33	-	-	5.29	0.13	5.16	
	21 - 31	0.38	5.40	0.36	-	-	6.14	0.14	6.00	
	Total	1.10	14.07	1.02	-	-	16.19	0.40	15.79	
Feb.	1 - 10	0.36	5.61	0.33	-	-	6.30	0.26	6.04	
	11 - 20	0.36	5.09	0.33	-	-	5.78	0.14	5.64	
	21 - 28	0.31	3.86	0.29	-	-	4.46	0.29	4.17	
	Total	1.03	14.56	0.95	-	-	16.54	0.69	15.85	
Mar.	1 - 10	0.36	4.69	0.33	-	-	5.38	0.19	5.19	
	11 - 20	0.36	2.12	0.33	-	-	2.81	0.45	2.36	
	21 - 31	0.38	1.76	0.36	-	-	2.50	1.94	0.56	
	Total	1.10	8.57	1.02	-	-	10.69	2.58	8.11	
Apr.	1 - 10	0.36	1.65	0.33	-	-	2.34	0.23	2.11	
	11 - 20	0.36	0.09	0.33	-	-	0.78	0.76	0.02	
	21 - 30	0.36	0.59	0.33	-	-	1.28	0.72	0.56	
	Total	1.08	2.33	0.99	-	-	4.40	1.71	2.69	
Annual		13.0	140.9	12.0	-	-	165.9	71.1	126.2	31.4

Note : Industrial water demand of 1.6 MCN/yr is excluded because it depends on the Dok Krai reservoir.

Table 25 WATER BALANCE IN ZONE 10-1

ZONE 10-1

(Unit: 10⁶ m³)

Year 1996, 2001	Demand			Available Local Water			River Water RW	Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal		(+)	(-)
	DID	IRD	MF	GW	LRW	NW			
May 1 - 10	-	0.05	0.29	-	-	0.34	0.34	0	
May 11 - 20	-	0.05	0.29	-	-	0.34	0.80		0.46
May 21 - 31	-	0	0.31	-	-	0.31	0.28	0.03	
Total	-	0.10	0.89	-	-	0.99	1.42	0.03	0.46
June 1 - 10	-	0.02	0.29	-	-	0.31	0.52		0.21
June 11 - 20	-	0.03	0.29	-	-	0.32	2.15		1.83
June 21 - 30	-	0.15	0.29	-	-	0.44	0.25	0.19	
Total	-	0.20	0.87	-	-	1.07	2.92	0.19	2.04
July 1 - 10	-	0.43	0.29	-	-	0.72	0.10	0.62	
July 11 - 20	-	1.55	0.29	-	-	1.84	0	1.84	
July 21 - 31	-	1.26	0.31	-	-	1.57	0.44	1.13	
Total	-	3.24	0.89	-	-	4.13	0.54	3.59	
Aug. 1 - 10	-	2.47	0.29	-	-	2.76	0.20	2.56	
Aug. 11 - 20	-	2.89	0.29	-	-	3.18	0.45	2.73	
Aug. 21 - 31	-	2.64	0.31	-	-	2.95	0.16	2.79	
Total	-	8.00	0.89	-	-	3.89	0.81	8.08	
Sep. 1 - 10	-	1.96	0.29	-	-	2.25	0.68	1.57	
Sep. 11 - 20	-	0.34	0.29	-	-	0.63	1.57		0.94
Sep. 21 - 30	-	0	0.29	-	-	0.29	3.03		2.74
Total	-	2.30	0.87	-	-	3.17	5.28		3.68
Oct. 1 - 10	-	1.79	0.29	-	-	2.08	2.48		0.40
Oct. 11 - 20	-	1.75	0.29	-	-	2.04	0.49	1.55	
Oct. 21 - 31	-	0.27	0.31	-	-	0.58	0.36	0.22	
Total	-	3.81	0.89	-	-	4.70	3.33	1.77	0.40
Nov. 1 - 10	-	0.76	0.29	-	-	1.05	0.53	0.52	
Nov. 11 - 20	-	0.40	0.29	-	-	0.69	0.26	0.43	
Nov. 21 - 30	-	0.48	0.29	-	-	0.77	0.19	0.58	
Total	-	1.64	0.87	-	-	2.51	0.98	1.53	
Dec. 1 - 10	-	0.58	0.29	-	-	0.87	0.22	0.65	
Dec. 11 - 20	-	0.72	0.29	-	-	1.01	0.53	0.48	
Dec. 21 - 31	-	0.84	0.31	-	-	1.15	0.16	0.99	
Total	-	2.14	0.89	-	-	3.03	0.91	2.12	
Jan. 1 - 10	-	0.93	0.29	-	-	1.22	0.13	1.09	
Jan. 11 - 20	-	1.04	0.29	-	-	1.33	0.07	1.26	
Jan. 21 - 31	-	1.24	0.31	-	-	1.55	0.08	1.47	
Total	-	3.21	0.89	-	-	4.10	0.28	3.82	
Feb. 1 - 10	-	1.27	0.29	-	-	1.56	0	1.56	
Feb. 11 - 20	-	1.15	0.29	-	-	1.44	0.08	1.36	
Feb. 21 - 28	-	0.88	0.23	-	-	1.11	1.28		0.17
Total	-	3.30	0.81	-	-	4.11	1.36	2.92	0.17
Mar. 1 - 10	-	1.08	0.29	-	-	1.37	0.12	1.25	
Mar. 11 - 20	-	0.49	0.29	-	-	0.78	0.10	0.68	
Mar. 21 - 31	-	0.42	0.31	-	-	0.73	0.35	0.38	
Total	-	1.99	0.89	-	-	2.88	0.57	2.31	
Apr. 1 - 10	-	0.41	0.29	-	-	0.70	0.12	0.58	
Apr. 11 - 20	-	0.01	0.29	-	-	0.30	0.26	0.04	
Apr. 21 - 30	-	0.19	0.29	-	-	0.48	0.26	0.22	
Total	-	0.61	0.87	-	-	1.48	0.64	0.84	
Annual	-	30.6	10.5	-	-	41.1	19.0	28.8	6.7

Note : No demand occurs in 1986 and 1991

Table 26 FEATURES AND CONSTRUCTION COST OF SELECTED DEVELOPMENT SCALE

	Unit	Khlong Luang	Pa Baeng	Huai Bung	Huai Takhian Tia Na Klua	Khlong Huai Chak Nok	Huai Yai	Khlong Thap Ma	Khlong Yai
Reservoir									
Catchment area	km ²	526.0	53.8	68.5	33.0	22.3	18.1	65.9	218.0
Average annual run-off	10 ⁶ m ³	125.2	18.8	23.9	11.5	7.8	6.3	23.0	87.0
High water surface	El.m.	39.7	66.6	28.0	30.3	31.1	14.7	25.6	50.3
Low water surface	El.m.	33.8	61.7	22.3	25.0	25.0	10.0	19.9	40.6
Reservoir storage capacity									
Gross storage	10 ⁶ m ³	141.0	16.6	21.2	10.2	6.9	5.6	20.4	93.6
Active storage	10 ⁶ m ³	125.2	15.0	19.1	9.2	6.2	5.0	18.4	87.0
Dead storage	10 ⁶ m ³	15.8	1.6	2.1	1.0	0.7	0.6	2.0	6.6
Reservoir surface area at HWS	km ²	32.8	5.4	5.9	2.8	1.8	1.5	4.6	16.8
Net regulated outflow	10 ⁶ m ³	80.4	11.6	16.0	7.8	5.2	4.3	15.6	62.4
Dam									
Type of dam		Earth-fill	Earth-fill	Earth-fill	Earth-fill	Earth-fill	Earth-fill	Earth-fill	Earth-fill
Dam crest elevation	El.m.	42.7	69.6	31.0	33.3	34.1	17.7	28.6	53.3
Length of dam crest	m.	3,790.0	1,880.0	2,730.0	1,900.0	1,400.0	1,410.0	3,720.0	4,090.0
Dam height	m.	19.7	15.1	14.5	13.8	14.6	11.2	14.1	21.3
Dam volume	10 ⁶ m ³	2,070.0	578.0	760.0	570.0	560.0	400.0	1,910.0	2,570.0

Table 27 WATER SUPPLY CAPACITY OF DAMS

Zone	Dams		Catchment area (km ²)	Average annual inflow (10 ⁶ m ³ /yr)	Active storage capacity (10 ⁶ m ³)	Water supply capacity (10 ⁶ m ³ /yr)
	Name					
<u>1. Existing</u>						
1	Ban Bung		51.2	17.9	0.4	2.2
3	Bang Phra		123.0	42.9	104.0	34.7
5	Map Prachan		37.9	13.2	14.0	9.2
10	Dok Krai		291.0	101.6	46.8	56.8
<u>2. Under Construction</u>						
4	Nong Kho		48.3	16.9	18.0	12.6
<u>3. Planned</u>						
1	Ban Bung		51.2	17.9	12.5	11.7
10	Nong Pla Lai		408.0	126.1	144.4	102.5
<u>4. Potential</u>						
1	Khlong Luang		526.0	125.2	125.2	79.8
1	Pa Daeng		53.8	18.8	15.0	11.6
4	Huai Bung		68.5	23.9	19.1	16.0
4	Huai Takhian Tia		33.0	11.5	9.2	7.8
5	Khlong Na Klua		22.3	7.8	6.2	5.2
6	Huai Chak Nok		18.1	6.3	5.0	4.3
6	Huai Yai		65.9	23.0	18.4	15.6
10	Khlong Yai		218.0	87.0	87.0	62.4
10	Khlong Thap Ma		158.0	55.2	55.2	41.3

Table 28 WATER BALANCE IN ZONE 1 (1/4)
(WITH KHLONG LUANG DAM)

ZONE 1

(Unit: $10^6 m^3$)

Year	Demand			Available Local Water				Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD (-)
1986									
May	1 - 10	0.08	-	0.05	-	0.03	0.10	4.38	4.28
	11 - 20	0.08	-	0.05	-	0.03	0.10	2.17	2.07
	21 - 31	0.10	-	0.06	-	0.03	0.12	0.51	0.38
	Total	0.26	-	0.16	-	0.09	0.32	7.06	6.73
June	1 - 10	0.08	-	0.05	-	0.03	0.10	0.61	0.51
	11 - 20	0.08	-	0.05	-	0.03	0.10	1.56	1.46
	21 - 30	0.08	-	0.05	-	0.03	0.10	0.92	0.82
	Total	0.24	-	0.15	-	0.09	0.30	3.09	2.79
July	1 - 10	0.08	-	0.05	-	0.03	0.10	0.31	0.21
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.27	0.17
	21 - 31	0.10	-	0.06	-	0.03	0.12	0.64	0.51
	Total	0.26	-	0.16	-	0.09	0.32	1.22	0.89
Aug.	1 - 10	0.08	-	0.05	-	0.03	0.10	1.27	1.17
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.44	0.34
	21 - 31	0.10	-	0.06	-	0.03	0.12	0.36	0.23
	Total	0.26	-	0.16	-	0.09	0.32	2.07	1.74
Sep.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.47	0.37
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.59	0.49
	21 - 30	0.08	-	0.15	-	0.03	0.10	3.21	3.11
	Total	0.24	-	0.15	-	0.09	0.30	4.27	3.97
Oct.	1 - 10	0.08	-	0.05	-	0.03	0.10	10.02	9.92
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.64	0.54
	21 - 31	0.10	-	0.06	-	0.03	0.12	0.30	0.17
	Total	0.26	-	0.16	-	0.09	0.32	10.96	10.63
Nov.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.18	0.08
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.16	0.06
	21 - 30	0.08	-	0.05	-	0.03	0.10	0.14	0.04
	Total	0.24	-	0.15	-	0.09	0.30	0.48	0.18
Dec.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.13	0.03
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.15	0.05
	21 - 31	0.10	-	0.06	-	0.03	0.12	0.17	0.04
	Total	0.26	-	0.16	-	0.09	0.32	0.45	0.12
Jan.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.13	0.03
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.08	0.02
	21 - 31	0.10	-	0.06	-	0.03	0.12	0.10	0.03
	Total	0.26	-	0.16	-	0.09	0.32	0.31	0.05
Feb.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.07	0.03
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.06	0.04
	21 - 28	0.06	-	0.04	-	0.03	0.08	0.01	0.06
	Total	0.22	-	0.14	-	0.09	0.28	0.14	0.13
Mar.	1 - 10	0.08	-	0.05	-	0.03	0.10	0	0.10
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.35	0.25
	21 - 31	0.10	-	0.06	-	0.03	0.12	1.03	0.90
	Total	0.26	-	0.16	-	0.09	0.32	1.38	1.15
Apr.	1 - 10	0.08	-	0.05	-	0.03	0.10	0.26	0.16
	11 - 20	0.08	-	0.05	-	0.03	0.10	0.36	0.26
	21 - 30	0.08	-	0.05	-	0.03	0.10	0.36	0.26
	Total	0.24	-	0.15	-	0.09	0.30	0.98	0.68
Annual	3.0	-	1.9	-	1.1	3.8	32.4	0.3	28.9

Note : (1) Industrial water demand of 3.3 MCM/yr is excluded, for it depends on the Bang Phra reservoir.

(2) The quantity of Local River is that of water works.

Table 28 WATER BALANCE IN ZONE 1 (2/4)
(WITH KHLONG LUANG DAM)

ZONE 1

(Unit: 10⁶m³)

Year	Demand			Available Local Water			Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	(-)
1991									
May	1 - 10	0	0.05	-	0.03	0.15	-	0.15	
	11 - 20	0	0.05	-	0.03	0.15	-	0.15	
	21 - 31	0	0.06	-	0.03	0.18	-	0.18	
	Total	0	0.16	-	0.09	0.48	-	0.48	
June	1 - 10	0.04	0.05	-	0.03	0.19	-	0.19	
	11 - 20	0.07	0.05	-	0.03	0.22	-	0.22	
	21 - 30	0.49	0.05	-	0.03	0.64	-	0.64	
	Total	0.60	0.15	-	0.09	1.05	-	1.05	
July	1 - 10	1.10	9.05	-	0.03	1.25	-	1.25	
	11 - 20	3.20	0.05	-	0.03	3.35	-	3.35	
	21 - 31	3.44	0.06	-	0.03	3.62	-	3.62	
	Total	7.74	0.16	-	0.09	8.22	-	8.22	
Aug.	1 - 10	4.43	0.05	-	0.03	4.58	-	4.58	
	11 - 20	6.66	0.05	-	0.03	6.81	-	6.81	
	21 - 31	1.56	0.06	-	0.03	1.74	-	1.74	
	Total	12.65	0.16	-	0.09	13.13	-	13.13	
Sep.	1 - 10	3.00	0.05	-	0.03	3.15	-	3.15	
	11 - 20	2.27	0.05	-	0.03	2.42	-	2.42	
	21 - 30	0	0.05	-	0.03	0.15	-	0.15	
	Total	5.27	0.15	-	0.09	5.72	-	5.72	
Oct.	1 - 10	5.06	0.05	-	0.03	5.23	-	5.23	
	11 - 20	4.06	0.05	-	0.03	4.21	-	4.21	
	21 - 31	3.08	0.06	-	0.03	3.26	-	3.26	
	Total	12.22	0.16	-	0.09	12.70	-	12.70	
Nov.	1 - 10	1.75	0.05	-	0.03	1.90	-	1.90	
	11 - 20	0.89	0.05	-	0.03	1.04	-	1.04	
	21 - 30	1.06	0.05	-	0.03	1.21	-	1.21	
	Total	3.70	0.15	-	0.09	4.15	-	4.15	
Dec.	1 - 10	1.26	0.05	-	0.03	1.41	-	1.41	
	11 - 20	1.30	0.05	-	0.03	1.45	-	1.45	
	21 - 31	1.52	0.06	-	0.03	1.70	-	1.70	
	Total	4.08	0.16	-	0.09	4.56	-	4.56	
Jan.	1 - 10	1.71	0.05	-	0.03	1.86	-	1.86	
	11 - 20	1.91	0.05	-	0.03	2.06	-	2.06	
	21 - 31	2.23	0.06	-	0.03	2.41	-	2.41	
	Total	5.85	0.16	-	0.09	6.33	-	6.33	
Feb.	1 - 10	2.27	0.05	-	0.03	2.42	-	2.42	
	11 - 20	1.99	0.05	-	0.03	2.14	-	2.14	
	21 - 28	0.91	0.05	-	0.03	1.05	-	1.05	
	Total	5.17	0.15	-	0.09	5.61	-	5.61	
Mar.	1 - 10	1.30	0.05	-	0.03	1.45	-	1.45	
	11 - 20	0.45	0.05	-	0.03	0.60	-	0.60	
	21 - 31	0.53	0.06	-	0.03	0.71	-	0.71	
	Total	2.28	0.16	-	0.09	2.76	-	2.76	
Apr.	1 - 10	0.41	0.05	-	0.03	0.56	-	0.56	
	11 - 20	0.15	0.05	-	0.03	0.30	-	0.30	
	21 - 30	0.07	0.05	-	0.03	0.22	-	0.22	
	Total	0.63	0.15	-	0.09	1.08	-	1.08	
Annual		60.1	1.9	-	1.1	65.7	-	65.7	

Note: (1) Industrial water demand of 6.6 MCM/yr is excluded, for it depends on the Bang Phra reservoir.

(2) The quantity of Local River is that of water works.

Table 28 WATER BALANCE IN ZONE 1 (3/4)

ZONE 1		(Unit: $10^6 m^3$)							
Year	Demand			Available Local Water				Water Deficit	
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	(-)
1996									
May	1 - 10	0.18	0	0.05	-	0.03	0.20	-	0.20
	11 - 20	0.18	0	0.05	-	0.03	0.20	-	0.20
	21 - 31	0.19	0	0.06	-	0.03	0.22	-	0.22
	Total	0.55	0	0.16	-	0.09	0.62	-	0.62
June	1 - 10	0.18	0.04	0.05	-	0.03	0.24	-	0.24
	11 - 20	0.18	0.07	0.05	-	0.03	0.27	-	0.27
	21 - 30	0.18	0.49	0.05	-	0.03	0.69	-	0.69
	Total	0.54	0.60	0.16	-	0.09	1.20	-	1.20
July	1 - 10	0.18	1.10	0.05	-	0.03	1.30	-	1.30
	11 - 20	0.18	3.20	0.05	-	0.03	3.40	-	3.40
	21 - 31	0.19	3.44	0.06	-	0.03	3.66	-	3.66
	Total	0.55	7.74	0.16	-	0.09	8.36	-	8.36
Aug.	1 - 10	0.18	4.43	0.05	-	0.03	4.63	-	4.63
	11 - 20	0.18	6.66	0.05	-	0.03	6.86	-	6.86
	21 - 31	0.19	1.56	0.06	-	0.03	1.78	-	1.78
	Total	0.55	12.65	0.16	-	0.09	13.27	-	13.27
Sep.	1 - 10	0.18	3.00	0.05	-	0.03	3.20	-	3.20
	11 - 20	0.18	2.27	0.05	-	0.03	2.47	-	2.47
	21 - 30	0.18	0.00	0.05	-	0.03	0.20	-	0.20
	Total	0.54	5.27	0.16	-	0.09	5.87	-	5.87
Oct.	1 - 10	0.18	5.08	0.05	-	0.03	5.28	-	5.28
	11 - 20	0.18	4.06	0.05	-	0.03	4.26	-	4.26
	21 - 31	0.19	3.08	0.06	-	0.03	3.30	-	3.30
	Total	0.55	12.22	0.16	-	0.09	12.84	-	12.84
Nov.	1 - 10	0.18	1.75	0.05	-	0.03	1.95	-	1.95
	11 - 20	0.18	0.89	0.05	-	0.03	1.09	-	1.09
	21 - 30	0.18	1.06	0.05	-	0.03	1.26	-	1.26
	Total	0.54	3.70	0.16	-	0.09	4.30	-	4.30
Dec.	1 - 10	0.18	1.26	0.05	-	0.03	1.46	-	1.46
	11 - 20	0.18	1.30	0.05	-	0.03	1.50	-	1.50
	21 - 31	0.19	1.52	0.06	-	0.03	1.74	-	1.74
	Total	0.55	4.08	0.16	-	0.09	4.70	-	4.70
Jan.	1 - 10	0.18	1.71	0.05	-	0.03	1.91	-	1.91
	11 - 20	0.18	1.91	0.05	-	0.03	2.11	-	2.11
	21 - 31	0.19	2.23	0.06	-	0.03	2.45	-	2.45
	Total	0.55	5.85	0.16	-	0.09	6.47	-	6.47
Feb.	1 - 10	0.18	2.27	0.05	-	0.03	2.47	-	2.47
	11 - 20	0.18	1.99	0.05	-	0.03	2.19	-	2.19
	21 - 28	0.16	0.91	0.05	-	0.03	1.09	-	1.09
	Total	0.52	5.17	0.15	-	0.09	5.75	-	5.75
Mar.	1 - 10	0.18	1.30	0.05	-	0.03	1.50	-	1.50
	11 - 20	0.18	0.45	0.05	-	0.03	0.65	-	0.65
	21 - 31	0.19	0.53	0.06	-	0.03	0.75	-	0.75
	Total	0.55	2.28	0.16	-	0.09	2.90	-	2.90
Apr.	1 - 10	0.18	0.41	0.05	-	0.03	0.61	-	0.61
	11 - 20	0.18	0.15	0.05	-	0.03	0.35	-	0.35
	21 - 30	0.18	0.07	0.05	-	0.03	0.27	-	0.27
	Total	0.54	0.63	0.16	-	0.09	1.23	-	1.23
Annual	6.5	60.1	1.9	-	1.1	67.4	-	67.4	

Note : (1) Industrial water demand of 6.6 MCM/yr is excluded, for it depends on the Bang Phra reservoir.

(2) The quantity of Local River is that of water works.

Table 28 WATER BALANCE IN ZONE 1 (4/4)
(WITH KHLONG LUANG DAM)

ZONE 1		(Unit: 10 ⁶ m ³)							
Year	Demand			Available Local Water				Water Deficit (+) WD (-)	
	D & I DIU	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW		
2001									
May	1 - 10	0.22	0	0.05	-	0.03	0.24	-	0.24
	11 - 20	0.22	0	0.05	-	0.03	0.24	-	0.24
	21 - 31	0.23	0	0.06	-	0.03	0.26	-	0.26
	Total	0.67	0	0.16	-	0.09	0.74	-	0.74
June	1 - 10	0.22	0.04	0.05	-	0.03	0.28	-	0.28
	11 - 20	0.22	0.07	0.05	-	0.03	0.31	-	0.31
	21 - 30	0.22	0.49	0.05	-	0.03	0.73	-	0.73
	Total	0.66	0.60	0.15	-	0.09	1.32	-	1.32
July	1 - 10	0.22	1.10	0.05	-	0.03	1.34	-	1.34
	11 - 20	0.22	3.20	0.05	-	0.03	3.44	-	3.44
	21 - 31	0.23	3.44	0.06	-	0.03	3.70	-	3.70
	Total	0.67	7.74	0.16	-	0.09	8.48	-	8.48
Aug.	1 - 10	0.22	4.43	0.05	-	0.03	4.67	-	4.27
	11 - 20	0.22	6.66	0.05	-	0.03	6.90	-	6.90
	21 - 31	0.23	1.56	0.06	-	0.03	1.82	-	1.82
	Total	0.67	12.65	0.16	-	0.09	13.39	-	13.39
Sep.	1 - 10	0.22	3.00	0.05	-	0.03	3.24	-	3.24
	11 - 20	0.22	2.27	0.05	-	0.03	2.51	-	2.51
	21 - 30	0.22	0	0.05	-	0.03	0.24	-	0.24
	Total	0.66	5.27	0.15	-	0.09	5.99	-	5.99
Oct.	1 - 10	0.22	5.08	0.05	-	0.03	5.32	-	5.32
	11 - 20	0.22	4.06	0.05	-	0.03	4.30	-	4.30
	21 - 31	0.23	3.08	0.06	-	0.03	3.34	-	3.34
	Total	0.67	12.22	0.16	-	0.09	12.96	-	12.96
Nov.	1 - 10	0.22	1.75	0.05	-	0.03	1.99	-	1.99
	11 - 20	0.22	0.89	0.05	-	0.03	1.13	-	1.13
	21 - 30	0.22	1.06	0.05	-	0.03	1.30	-	1.30
	Total	0.66	3.70	0.15	-	0.09	4.42	-	4.42
Dec.	1 - 10	0.22	1.26	0.05	-	0.03	1.50	-	1.50
	11 - 20	0.22	1.30	0.05	-	0.03	1.54	-	1.54
	21 - 31	0.23	1.52	0.06	-	0.03	1.78	-	1.78
	Total	0.67	4.08	0.16	-	0.09	4.82	-	4.82
Jan.	1 - 10	0.22	1.71	0.05	-	0.03	1.95	-	1.95
	11 - 20	0.22	1.91	0.05	-	0.03	2.15	-	2.15
	21 - 31	0.23	2.23	0.06	-	0.03	2.49	-	2.49
	Total	0.67	5.85	0.16	-	0.09	6.59	-	6.59
Feb.	1 - 10	0.22	2.27	0.05	-	0.03	2.51	-	2.51
	11 - 20	0.22	1.99	0.05	-	0.03	2.23	-	2.23
	21 - 28	0.19	0.91	0.05	-	0.03	1.12	-	1.12
	Total	0.63	5.17	0.15	-	0.09	5.86	-	5.86
Mar.	1 - 10	0.22	1.30	0.05	-	0.03	1.54	-	1.54
	11 - 20	0.22	0.45	0.05	-	0.03	0.69	-	0.69
	21 - 31	0.23	0.53	0.06	-	0.03	0.79	-	0.79
	Total	0.67	2.28	0.16	-	0.09	3.02	-	3.02
Apr.	1 - 10	0.22	0.41	0.05	-	0.03	0.65	-	0.65
	11 - 20	0.22	0.15	0.05	-	0.03	0.39	-	0.39
	21 - 30	0.22	0.07	0.05	-	0.03	0.31	-	0.31
	Total	0.66	0.63	0.15	-	0.09	1.35	-	1.35
Annual	7.9	60.1	1.9	-	1.1	68.8	-	68.8	

Note : (1) Industrial water demand of 6.6 MCM/yr is excluded, for it depends on the Bang Phra reservoir.

(2) The quantity of Local River consists of water works.

Table 29 WATER BALANCE IN ZONE 4 (1/2)
(ALTERNATIVE II)

ZONE 4

(Unit: $10^6 m^3$)

Year 2001	Demand			Available Local Water			River Water RW	Water Deficit		
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal		(+)	WD	(-)
	DID	IRD	MF	GW	LRW	NW				
May	1 - 10	1.24	-	(0.09)	-	-	1.24	0.38	0.86	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.94	0.30	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.34	1.03	
	Total	3.85	-	(0.27)	-	-	3.85	1.66	2.19	
June	1 - 10	1.24	-	(0.09)	-	-	1.24	0.62	0.62	
	11 - 20	1.24	-	(0.09)	-	-	1.24	2.50		1.26
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.29	0.95	
	Total	3.72	-	(0.27)	-	-	3.72	3.41	1.57	1.26
July	1 - 10	1.24	-	(0.09)	-	-	1.24	0.12	1.12	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.02	1.12	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.51	0.86	
	Total	3.85	-	(0.27)	-	-	3.85	0.65	3.20	
Aug.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.24	1.00	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.52	0.72	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.19	1.18	
	Total	3.85	-	(0.27)	-	-	3.85	0.95	2.90	
Sep.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.78	0.46	
	11 - 20	1.24	-	(0.09)	-	-	1.24	1.84		0.60
	21 - 30	1.24	-	(0.09)	-	-	1.24	3.54		2.30
	Total	3.72	-	(0.27)	-	-	3.72	6.16	0.46	2.90
Oct.	1 - 10	1.24	-	(0.09)	-	-	1.24	2.89		1.65
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.57	0.67	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.42	0.95	
	Total	3.85	-	(0.27)	-	-	3.85	3.88	1.62	1.65
Nov.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.62	0.62	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.30	0.94	
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.20	1.04	
	Total	3.72	-	(0.27)	-	-	3.72	1.12	2.60	
Dec.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.25	0.99	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.62	0.62	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.19	1.18	
	Total	3.85	-	(0.27)	-	-	3.85	1.06	2.79	
Jan.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.13	1.11	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.10	1.14	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.08	1.29	
	Total	3.85	-	(0.27)	-	-	3.85	0.31	3.54	
Feb.	1 - 10	1.24	-	(0.09)	-	-	1.24	0	1.24	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.12	1.12	
	21 - 28	0.99	-	(0.07)	-	-	0.99	1.49		0.50
	Total	3.47	-	(0.25)	-	-	3.47	1.61	2.36	0.50
Mar.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.14	1.10	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.12	1.12	
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.41	0.96	
	Total	3.85	-	(0.27)	-	-	3.85	0.67	3.18	
Apr.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.15	1.09	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.31	0.93	
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.29	0.95	
	Total	3.72	-	(0.27)	-	-	3.72	0.75	2.97	
Annual	45.4	-	(3.2)	-	-	45.4	22.2	29.2	6.0	

Note : (1) Figures in parentheses are not used for water balance calculation because they are sustained by the Nong Kho reservoir.

(2) Out of the total industrial water demand, 2.1 MCM/yr is excluded since it depends on the Bang Phra reservoir in Zone No.3.

Table 29 WATER BALANCE IN ZONE 4 (2/2)
(ALTERNATIVE III AND IV)

ZONE 4

(Unit: 10⁶ m³)

Year 2001	Demand			Available Local Water				Water Deficit			
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water	(+)	WD	(-)	
	DID	IRD	MF	GW	LRW	NW	RW				
May	1 - 10	1.24	-	(0.09)	-	-	1.24	0.31	0.93		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.77	0.47		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.28	1.09		
	Total	3.85	-	(0.27)	-	-	3.85	1.36	2.49		
June	1 - 10	1.24	-	(0.09)	-	-	1.24	0.50	0.74		
	11 - 20	1.24	-	(0.09)	-	-	1.24	2.05		0.81	
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.24	1.00		
	Total	3.72	-	(0.27)	-	-	3.72	2.79	1.74	0.81	
July	1 - 10	1.24	-	(0.09)	-	-	1.24	0.10	1.14		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.02	1.22		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.42	0.75		
	Total	3.85	-	(0.27)	-	-	3.85	0.54	3.31		
Aug.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.19	1.05		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.42	0.82		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.15	1.22		
	Total	3.85	-	(0.27)	-	-	3.85	0.76	3.09		
Sep.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.65	0.59		
	11 - 20	1.24	-	(0.09)	-	-	1.24	1.51		0.27	
	21 - 30	1.24	-	(0.09)	-	-	1.24	2.91		1.67	
	Total	3.72	-	(0.27)	-	-	3.72	5.07	0.59	1.94	
Oct.	1 - 10	1.24	-	(0.09)	-	-	1.24	2.37		1.13	
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.47	0.77		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.34	1.03		
	Total	3.85	-	(0.27)	-	-	3.85	3.18	1.80	1.13	
Nov.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.50	0.74		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.24	1.00		
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.18	1.06		
	Total	3.72	-	(0.27)	-	-	3.72	0.92	2.80		
Dec.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.22	1.02		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.50	0.74		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.15	1.22		
	Total	3.85	-	(0.27)	-	-	3.85	0.87	2.98		
Jan.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.12	1.12		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.08	1.16		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.07	1.30		
	Total	3.85	-	(0.27)	-	-	3.85	0.27	3.58		
Feb.	1 - 10	1.24	-	(0.09)	-	-	1.24	0	1.24		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.10	1.14		
	21 - 28	0.99	-	(0.07)	-	-	0.99	1.23		0.24	
	Total	3.47	-	(0.25)	-	-	3.47	1.33	2.38	0.24	
Mar.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.12	1.12		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.10	1.14		
	21 - 31	1.37	-	(0.09)	-	-	1.37	0.33	1.04		
	Total	3.85	-	(0.27)	-	-	3.85	0.55	3.30		
Apr.	1 - 10	1.24	-	(0.09)	-	-	1.24	0.12	1.12		
	11 - 20	1.24	-	(0.09)	-	-	1.24	0.25	0.99		
	21 - 30	1.24	-	(0.09)	-	-	1.24	0.24	1.00		
	Total	3.72	-	(0.27)	-	-	3.72	0.61	3.11		
Annual	45.4	-	(3.2)	-	-	45.4	18.3	31.2	4.1		

Note : (1) Figures in parentheses are not used for water balance calculation because they are sustained by the Nong Kho reservoir.

(2) Out of the total industrial water demand, 2.1 MCM/yr is excluded since it depends on the Bang Phra reservoir in Zone No.3.

Table 30 WATER BALANCE IN ZONE 10 (1/4)

ZONE 10

(Unit: $10^6 m^3$)

Year 1986	Demand			Available Local Water				Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD	(-)
May	1 - 10	0.12	0.14	0.33	-	-	0.59	0.66		0.07
	11 - 20	0.12	0.14	0.33	-	-	0.59	0.46	0.13	
	21 - 31	0.12	0	0.36	-	-	0.48	0.44	0.04	
	Total	0.36	0.28	1.02	-	-	1.66	1.56	0.17	0.07
June	1 - 10	0.12	0.09	0.33	-	-	0.54	0.55		0.01
	11 - 20	0.12	0.18	0.33	-	-	0.63	3.63		3.00
	21 - 30	0.12	0.75	0.33	-	-	1.20	0.98	0.22	
	Total	0.36	1.02	0.99	-	-	2.37	5.16	0.22	3.01
July	1 - 10	0.12	2.11	0.33	-	-	2.56	0.80	1.76	
	11 - 20	0.12	7.23	0.33	-	-	7.68	1.60	6.08	
	21 - 31	0.12	6.04	0.36	-	-	6.52	5.38	1.14	
	Total	0.36	15.38	1.02	-	-	16.76	7.78	8.98	
Aug.	1 - 10	0.12	11.91	0.33	-	-	12.36	0.79	11.57	
	11 - 20	0.12	13.89	0.33	-	-	14.34	0.38	13.96	
	21 - 31	0.12	12.67	0.36	-	-	13.15	0.31	12.84	
	Total	0.36	38.47	1.02	-	-	39.85	1.48	38.37	
Sep.	1 - 10	0.12	9.41	0.33	-	-	9.86	1.84	8.02	
	11 - 20	0.12	1.59	0.33	-	-	2.04	4.32		2.28
	21 - 30	0.12	0	0.33	-	-	0.45	9.76		9.31
	Total	0.36	11.00	0.99	-	-	12.35	15.92	8.02	11.59
Oct.	1 - 10	0.12	8.61	0.33	-	-	9.06	24.83		15.77
	11 - 20	0.12	8.40	0.33	-	-	8.85	1.98	6.87	
	21 - 31	0.12	1.31	0.36	-	-	1.79	3.95		2.16
	Total	0.36	18.32	1.02	-	-	19.70	30.76	6.87	17.93
Nov.	1 - 10	0.12	3.65	0.33	-	-	4.10	1.26	2.84	
	11 - 20	0.12	1.89	0.33	-	-	2.34	0.44	1.90	
	21 - 30	0.12	2.20	0.33	-	-	2.65	0.34	2.31	
	Total	0.36	7.74	0.99	-	-	9.09	2.04	7.05	
Dec.	1 - 10	0.12	2.52	0.33	-	-	2.97	0.41	2.56	
	11 - 20	0.12	3.06	0.33	-	-	3.51	0.21	3.30	
	21 - 31	0.12	3.60	0.36	-	-	4.08	0.30	3.78	
	Total	0.36	9.18	1.02	-	-	10.56	0.92	9.64	
Jan.	1 - 10	0.12	4.07	0.33	-	-	4.52	0.13	4.39	
	11 - 20	0.12	4.60	0.33	-	-	5.05	0.13	4.92	
	21 - 31	0.12	5.40	0.36	-	-	5.88	0.14	5.74	
	Total	0.36	14.07	1.02	-	-	15.45	0.40	15.05	
Feb.	1 - 10	0.12	5.61	0.33	-	-	6.06	0.26	5.80	
	11 - 20	0.12	5.09	0.33	-	-	5.54	0.14	5.40	
	21 - 28	0.10	3.86	0.29	-	-	4.25	0.29	3.96	
	Total	0.34	14.56	0.95	-	-	15.85	0.69	15.16	
Mar.	1 - 10	0.12	4.69	0.33	-	-	5.14	0.19	4.95	
	11 - 20	0.12	2.12	0.33	-	-	2.57	0.45	2.12	
	21 - 31	0.12	1.76	0.36	-	-	2.24	1.94	0.30	
	Total	0.36	8.57	1.02	-	-	9.95	2.58	7.37	
Apr.	1 - 10	0.12	1.65	0.33	-	-	2.10	0.23	1.87	
	11 - 20	0.12	0.09	0.33	-	-	0.54	0.76		0.22
	21 - 30	0.12	0.59	0.33	-	-	1.04	0.72	0.32	
	Total	0.36	2.33	0.99	-	-	3.68	1.71	2.19	0.22
Annual	4.2	140.9	12.0	-	-	157.1	71.1	118.9	32.9	

Note : (1) With Dok Krai and Nong Pla Lai dams.

(2) Industrial water demand of 1.6 MCM/yr is excluded because it depends on the Dok Krai reservoir.

Table 30 WATER BALANCE IN ZONE 10 (2/4)

ZONE 10		(Unit: 10 ⁶ m ³)								
Year	Demand			Available Local Water				Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+)	WD	(-)
1991										
May	1 - 10	0.16	0.14	0.33	-	-	0.63	0.10	0.53	
	11 - 20	0.16	0.14	0.33	-	-	0.63	0.35	0.28	
	21 - 31	0.19	0.00	0.36	-	-	0.55	0.42	0.13	
	Total	0.51	0.28	1.02	-	-	1.81	0.87	0.94	
June	1 - 10	0.16	0.09	0.33	-	-	0.58	0.22	0.36	
	11 - 20	0.16	0.18	0.33	-	-	0.67	3.18		2.51
	21 - 30	0.16	0.75	0.33	-	-	1.24	0.72	0.52	
	Total	0.48	1.02	0.99	-	-	2.49	4.12	0.88	2.51
July	1 - 10	0.16	2.11	0.33	-	-	2.60	0.51	2.09	
	11 - 20	0.16	7.23	0.33	-	-	7.72	1.39	6.33	
	21 - 31	0.19	6.04	0.36	-	-	6.59	3.58	3.01	
	Total	0.51	15.38	1.02	-	-	16.91	5.48	11.43	
Aug.	1 - 10	0.16	11.91	0.33	-	-	12.40	0.50	11.90	
	11 - 20	0.16	13.89	0.33	-	-	14.38	0.32	14.06	
	21 - 31	0.19	12.67	0.36	-	-	13.22	0.25	12.97	
	Total	0.51	38.47	1.02	-	-	40.00	1.07	38.93	
Sep.	1 - 10	0.16	9.41	0.33	-	-	9.90	0.82	9.08	
	11 - 20	0.16	1.59	0.33	-	-	2.08	2.73		0.65
	21 - 30	0.16	0.00	0.33	-	-	0.49	7.51		7.02
	Total	0.48	11.00	0.99	-	-	12.47	11.06	9.08	7.67
Oct.	1 - 10	0.16	8.61	0.33	-	-	9.10	18.40		9.30
	11 - 20	0.16	8.40	0.33	-	-	8.89	1.33	7.56	
	21 - 31	0.19	1.31	0.36	-	-	1.86	2.70		0.84
	Total	0.51	18.32	1.02	-	-	19.85	22.43	7.56	10.14
Nov.	1 - 10	0.16	3.65	0.33	-	-	4.14	1.06	3.08	
	11 - 20	0.16	1.89	0.33	-	-	2.38	0.38	2.00	
	21 - 30	0.16	2.20	0.33	-	-	2.69	0.27	2.42	
	Total	0.48	7.74	0.99	-	-	9.21	1.71	7.50	
Dec.	1 - 10	0.16	2.52	0.33	-	-	3.01	0.33	2.68	
	11 - 20	0.16	3.06	0.33	-	-	3.55	0.16	3.39	
	21 - 31	0.19	3.60	0.36	-	-	4.15	0.25	3.90	
	Total	0.51	9.18	1.02	-	-	10.71	0.74	9.97	
Jan.	1 - 10	0.16	4.07	0.33	-	-	4.56	0.11	4.45	
	11 - 20	0.16	4.60	0.33	-	-	5.09	0.12	4.97	
	21 - 31	0.19	5.40	0.36	-	-	5.95	0.11	5.84	
	Total	0.51	14.07	1.02	-	-	15.60	0.34	15.26	
Feb.	1 - 10	0.16	5.61	0.33	-	-	6.10	0.24	5.86	
	11 - 20	0.16	5.09	0.33	-	-	5.58	0.12	5.46	
	21 - 28	0.15	3.86	0.29	-	-	4.30	0.27	4.03	
	Total	0.47	14.56	0.95	-	-	15.98	0.63	15.35	
Mar.	1 - 10	0.16	4.69	0.33	-	-	5.18	0.17	5.01	
	11 - 20	0.16	2.12	0.33	-	-	2.61	0.22	2.39	
	21 - 31	0.19	1.76	0.36	-	-	2.31	1.13	1.18	
	Total	0.51	8.57	1.02	-	-	10.10	1.52	8.58	
Apr.	1 - 10	0.16	1.65	0.33	-	-	2.14	0.19	1.95	
	11 - 20	0.16	0.09	0.33	-	-	0.58	0.47	0.11	
	21 - 30	0.16	0.59	0.33	-	-	1.08	0.44	0.64	
	Total	0.48	2.33	0.99	-	-	3.80	1.10	2.70	
Annual		6.0	140.9	12.0	-	-	158.9	51.2	128.1	20.4

Note: (1) With Dok Krai, Nong Pla Lai and Khlong Yai dams.

(2) Industrial water demand of 1.6 MCM/yr is excluded because it depends on the Dok Krai reservoirs.

Table 30 WATER BALANCE IN ZONE 10 (3/4)

ZONE 10

(Unit: 10⁶m³)

Year	Demand			Available Local Water			Withdrawal NW	River Water RW	Water Deficit	
	D & I	Irrigation	Maint. Flow	Ground Water	Local River	(+)			(-)	
	DID	IRD	MP	GW	LRW					
1996										
May	1 - 10	0.25	0.14	0.33	-	-	0.72	0.10	0.62	
	11 - 20	0.25	0.14	0.33	-	-	0.72	0.35	0.37	
	21 - 31	0.29	0.00	0.36	-	-	0.65	0.42	0.23	
	Total	0.79	0.28	1.02	-	-	2.09	0.87	1.22	
June	1 - 10	0.25	0.09	0.33	-	-	0.67	0.22	0.45	
	11 - 20	0.25	0.18	0.33	-	-	0.76	3.18		2.42
	21 - 30	0.25	0.75	0.33	-	-	1.33	0.72	0.61	
	Total	0.75	1.02	0.99	-	-	2.76	4.12	1.06	2.42
July	1 - 10	0.25	2.11	0.33	-	-	2.69	0.51	2.18	
	11 - 20	0.25	7.23	0.33	-	-	7.81	1.39	6.42	
	21 - 31	0.29	6.04	0.36	-	-	6.69	3.58	3.11	
	Total	0.79	15.38	1.02	-	-	17.19	5.48	11.71	
Aug.	1 - 10	0.25	11.91	0.33	-	-	12.49	0.50	11.99	
	11 - 20	0.25	13.89	0.33	-	-	14.47	0.32	14.15	
	21 - 31	0.29	12.67	0.36	-	-	13.32	0.25	13.07	
	Total	0.79	38.47	1.02	-	-	40.28	1.07	39.21	
Sep.	1 - 10	0.25	9.41	0.33	-	-	9.99	0.82	9.17	
	11 - 20	0.25	1.59	0.33	-	-	2.17	2.73		0.56
	21 - 30	0.25	0.00	0.33	-	-	0.58	7.51		6.93
	Total	0.75	11.00	0.99	-	-	12.74	11.06	9.17	7.49
Oct.	1 - 10	0.25	8.61	0.33	-	-	9.19	18.40		9.21
	11 - 20	0.25	8.40	0.33	-	-	8.98	1.33	7.65	
	21 - 31	0.29	1.31	0.36	-	-	1.96	2.70		0.74
	Total	0.79	18.32	1.02	-	-	20.13	22.43	7.65	9.95
Nov.	1 - 10	0.25	3.65	0.33	-	-	4.23	1.06	3.17	
	11 - 20	0.25	1.89	0.33	-	-	2.47	0.38	2.09	
	21 - 30	0.25	2.20	0.33	-	-	2.78	0.27	2.51	
	Total	0.75	7.74	0.99	-	-	9.48	1.71	7.77	
Dec.	1 - 10	0.25	2.52	0.33	-	-	3.10	0.33	2.80	
	11 - 20	0.25	3.06	0.33	-	-	3.64	0.16	3.38	
	21 - 31	0.29	3.60	0.36	-	-	4.25	0.25	4.00	
	Total	0.79	9.18	1.02	-	-	10.99	0.74	10.18	
Jan.	1 - 10	0.25	4.07	0.33	-	-	4.65	0.11	4.54	
	11 - 20	0.25	4.60	0.33	-	-	5.18	0.12	5.06	
	21 - 31	0.29	5.40	0.36	-	-	6.05	0.11	5.94	
	Total	0.79	14.07	1.02	-	-	15.88	0.34	15.54	
Feb.	1 - 10	0.25	5.61	0.33	-	-	6.19	0.24	5.95	
	11 - 20	0.25	5.09	0.33	-	-	5.67	0.12	5.55	
	21 - 28	0.23	3.86	0.29	-	-	4.38	0.27	4.11	
	Total	0.73	14.56	0.95	-	-	16.25	0.63	15.61	
Mar.	1 - 10	0.25	4.69	0.33	-	-	5.27	0.17	5.10	
	11 - 20	0.25	2.12	0.33	-	-	2.70	0.22	2.48	
	21 - 31	0.29	1.76	0.36	-	-	2.41	1.13	1.28	
	Total	0.79	8.57	1.02	-	-	10.38	1.52	8.86	
Apr.	1 - 10	0.25	1.65	0.33	-	-	2.23	0.19	2.04	
	11 - 20	0.25	0.09	0.33	-	-	0.67	0.47	0.20	
	21 - 30	0.25	0.59	0.33	-	-	1.17	0.44	0.73	
	Total	0.75	2.33	0.99	-	-	4.07	1.10	2.97	
Annual		9.3	140.9	12.0	-	-	162.2	51.2	130.9	

Table 30 WATER BALANCE IN ZONE 10 (4/4)

ZONE 10

(Unit: 10⁶m³)

Year	Demand			Available Local Water			Water Deficit		
	D & I DID	Irrigation IRD	Maint. Flow MF	Ground Water GW	Local River LRW	Withdrawal NW	River Water RW	(+) WD (-)	
2001									
May	1 - 10	0.36	0.14	0.33	-	-	0.83	0.10	0.73
	11 - 20	0.36	0.14	0.33	-	-	0.83	0.35	0.48
	21 - 31	0.38	0.00	0.36	-	-	0.74	0.42	0.32
	Total	1.10	0.28	1.02	-	-	2.40	0.87	1.53
June	1 - 10	0.36	0.09	0.33	-	-	0.78	0.22	0.56
	11 - 20	0.36	0.18	0.33	-	-	0.87	3.18	2.31
	21 - 30	0.36	0.75	0.33	-	-	1.44	0.72	0.72
	Total	1.08	1.02	0.99	-	-	3.09	4.12	1.28
July	1 - 10	0.36	2.11	0.33	-	-	2.80	0.51	2.29
	11 - 20	0.36	7.23	0.33	-	-	7.92	1.39	6.53
	21 - 31	0.38	6.04	0.36	-	-	6.78	3.58	3.20
	Total	1.10	15.38	1.02	-	-	17.50	5.48	12.02
Aug.	1 - 10	0.36	11.91	0.33	-	-	12.60	0.50	12.10
	11 - 20	0.36	13.89	0.33	-	-	14.58	0.32	14.26
	21 - 31	0.38	12.67	0.36	-	-	13.41	0.25	13.16
	Total	1.10	38.47	1.02	-	-	40.59	1.07	39.52
Sep.	1 - 10	0.36	9.41	0.33	-	-	10.10	0.82	9.28
	11 - 20	0.36	1.59	0.33	-	-	2.28	2.73	0.45
	21 - 30	0.36	0.00	0.33	-	-	0.69	7.51	6.82
	Total	1.08	11.00	0.99	-	-	13.07	11.06	7.27
Oct.	1 - 10	0.36	8.61	0.33	-	-	9.30	18.40	9.10
	11 - 20	0.36	8.40	0.33	-	-	9.09	1.33	7.75
	21 - 31	0.38	1.31	0.36	-	-	2.05	2.70	0.65
	Total	1.10	18.32	1.02	-	-	20.44	22.43	7.75
Nov.	1 - 10	0.36	3.65	0.33	-	-	4.34	1.06	3.28
	11 - 20	0.36	1.89	0.33	-	-	2.58	0.38	2.20
	21 - 30	0.36	2.20	0.33	-	-	2.89	0.27	2.62
	Total	1.08	7.74	0.99	-	-	9.81	1.71	8.10
Dec.	1 - 10	0.36	2.52	0.33	-	-	3.21	0.33	2.88
	11 - 20	0.36	3.06	0.33	-	-	3.75	0.16	3.59
	21 - 31	0.38	3.60	0.36	-	-	4.34	0.25	4.09
	Total	1.10	9.18	1.02	-	-	11.30	0.74	10.56
Jan.	1 - 10	0.36	4.07	0.33	-	-	4.76	0.11	4.65
	11 - 20	0.36	4.60	0.33	-	-	5.29	0.12	5.17
	21 - 31	0.38	5.40	0.36	-	-	6.14	0.11	6.03
	Total	1.10	14.07	1.02	-	-	16.19	0.34	15.85
Feb.	1 - 10	0.36	5.61	0.33	-	-	6.30	0.24	6.06
	11 - 20	0.36	5.09	0.33	-	-	5.78	0.12	5.66
	21 - 28	0.31	3.86	0.29	-	-	4.46	0.27	4.19
	Total	1.03	14.56	0.95	-	-	16.54	0.63	15.91
Mar.	1 - 10	0.36	4.69	0.33	-	-	5.38	0.17	5.21
	11 - 20	0.36	2.12	0.33	-	-	2.81	0.22	2.59
	21 - 31	0.38	1.76	0.36	-	-	2.50	1.13	1.37
	Total	1.10	8.57	1.02	-	-	10.69	1.52	9.17
Apr.	1 - 10	0.36	1.65	0.33	-	-	2.34	0.19	2.15
	11 - 20	0.36	0.09	0.33	-	-	0.78	0.47	0.31
	21 - 30	0.36	0.59	0.33	-	-	1.28	0.44	0.84
	Total	1.08	2.33	0.99	-	-	4.40	1.10	3.30
Annual		13.0	140.9	12.0	-	-	165.9	51.2	134.1

Table 31 WATER BALANCE IN ZONE 10-1

(Unit: 10⁶ m³)

ZONE 10-1		Demand		Available Local Water			Water Deficit		
Year	D & I	Irrigation	Maint. Flow	Ground Water	Local River	Withdrawal	River Water	(+)	(-)
1996, 2001	DID	IRD	MF	GW	LRW	NW	RW		
May	1 - 10	-	0.05	0.29	-	-	0.34	-	0.34
	11 - 20	-	0.05	0.29	-	-	0.34	-	0.34
	21 - 31	-	0	0.31	-	-	0.31	-	0.31
	Total	-	0.10	0.89	-	-	0.99	-	0.99
June	1 - 10	-	0.02	0.29	-	-	0.31	-	0.31
	11 - 20	-	0.03	0.29	-	-	0.32	-	0.32
	21 - 30	-	0.15	0.29	-	-	0.44	-	0.44
	Total	-	0.20	0.87	-	-	1.07	-	1.07
July	1 - 10	-	0.43	0.29	-	-	0.72	-	0.72
	11 - 20	-	1.55	0.29	-	-	1.84	-	1.84
	21 - 31	-	1.26	0.31	-	-	1.57	-	1.57
	Total	-	3.24	0.89	-	-	4.13	-	4.13
Aug.	1 - 10	-	2.47	0.29	-	-	2.76	-	2.76
	11 - 20	-	2.89	0.29	-	-	3.18	-	3.18
	21 - 31	-	2.64	0.31	-	-	2.95	-	2.95
	Total	-	8.00	0.89	-	-	8.89	-	8.89
Sep.	1 - 10	-	1.96	0.29	-	-	2.25	-	2.25
	11 - 20	-	0.34	0.29	-	-	0.63	-	0.63
	21 - 30	-	0	0.29	-	-	0.29	-	0.29
	Total	-	2.30	0.87	-	-	3.17	-	3.17
Oct.	1 - 10	-	1.79	0.29	-	-	2.08	-	2.08
	11 - 20	-	1.75	0.29	-	-	2.04	-	2.04
	21 - 31	-	0.27	0.31	-	-	0.58	-	0.58
	Total	-	3.81	0.89	-	-	4.70	-	4.70
Nov.	1 - 10	-	0.76	0.29	-	-	1.05	-	1.05
	11 - 20	-	0.40	0.29	-	-	0.69	-	0.69
	21 - 30	-	0.48	0.29	-	-	0.77	-	0.77
	Total	-	1.64	0.87	-	-	2.51	-	2.51
Dec.	1 - 10	-	0.58	0.29	-	-	0.87	-	0.87
	11 - 20	-	0.72	0.29	-	-	1.01	-	1.01
	21 - 31	-	0.84	0.31	-	-	1.15	-	1.15
	Total	-	2.14	0.89	-	-	3.03	-	3.03
Jan.	1 - 10	-	0.93	0.29	-	-	1.22	-	1.22
	11 - 20	-	1.04	0.29	-	-	1.33	-	1.33
	21 - 31	-	1.24	0.31	-	-	1.55	-	1.55
	Total	-	3.21	0.89	-	-	4.10	-	4.10
Feb.	1 - 10	-	1.27	0.29	-	-	1.56	-	1.56
	11 - 20	-	1.15	0.29	-	-	1.44	-	1.44
	21 - 28	-	0.88	0.23	-	-	1.11	-	1.11
	Total	-	3.30	0.81	-	-	4.11	-	4.11
Mar.	1 - 10	-	1.08	0.29	-	-	1.37	-	1.37
	11 - 20	-	0.49	0.29	-	-	0.78	-	0.78
	21 - 31	-	0.42	0.31	-	-	0.73	-	0.73
	Total	-	1.99	0.89	-	-	2.88	-	2.88
Apr.	1 - 10	-	0.41	0.29	-	-	0.70	-	0.70
	11 - 20	-	0.01	0.29	-	-	0.30	-	0.30
	21 - 30	-	0.19	0.29	-	-	0.48	-	0.48
	Total	-	0.61	0.87	-	-	1.48	-	1.48
Annual	-	30.6	10.5	-	-	41.1	-	41.1	

Note : No demand occurs in 1986 and 1991

Table 32 FUTURE WATER DEMAND AND DEFICIT OF THE ALTERNATIVE I

Zone	(Unit: MCM/yr)										TOTAL		
	1	1-1	2	3	4	5	6	7	8	9		10	10-1
DEMANDS													
1. Domestic Water													
Urban	2.1	0.4	23.3	0	18.5	15.2	1.0	2.9	1.1	4.0	9.7	0	78.2
Rural	5.8	0	0.1	0.3	1.2	0.3	0.1	2.0	0	0.2	3.3	0	13.3
Sub-total	7.9	0.4	23.4	0.3	19.7	15.5	1.1	4.9	1.1	4.2	13.0	0	91.5
2. Industrial Water													
	0	4.3	0	11.0 ¹	25.7	0.7	0	3.9	0	41.3	1.6	0	88.5
3. Irrigation Water													
	60.1	0	0	15.4 ²	0	0	0	0	0	0	140.9	30.6	247.5
4. Maintenance Flow													
	1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5
Total	69.9	5.1	23.4	34.7	48.6	18.7	1.1	8.8	1.1	45.5	167.5	41.1	465.5
Available Local Water	1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	0	2.1
WITHDRAWAL													
Available River Water	68.8	4.7	23.4	34.7	48.6	18.7	1.1	8.8	0.7	45.3	167.5	41.1	463.4
DEFICIT	0	0	0	0	19.6	0	1.0	0	0	0	31.8	0	52.4
Water Supply Capacity of Existing and Proposed Dams	68.8	4.7	23.4	34.7	29.0	18.7	0.1	8.8	0.7	45.3	135.7	41.1	411.0
BALANCE	79.8	11.7	0	34.7	12.6	9.2	0	0	0	0	221.7	41.3	411.0
	-11.0	-7.0	23.4	0	16.4	9.5	0.1	8.8	0.7	45.3	-86.0	-0.2	0

/1 : Including 6.6 MCM/yr and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4, respectively.

/2 : To be diverted to Zone 2.

Note: (1) Proposed dams are New Ban Bung, Khlong Luang, Khlong Yai and Khlong Thap Ma.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mark mean a shortage.

Table 33 FUTURE WATER DEMAND AND DEFICIT OF THE ALTERNATIVE II

Zone	(Unit: MCM/YR)										TOTAL		
	1	1-1	2	3	4	5	6	7	8	9		10	10-1
DEMANDS													
1. Domestic Water													
Urban	2.1	0.4	23.3	0	18.5	15.2	1.0	2.9	1.1	4.0	9.7	0	78.2
Rural	5.8	0	0.1	0.3	1.2	0.3	0.1	2.0	0	0.2	3.3	0	13.3
Sub-total	7.9	0.4	23.4	0.3	19.7	15.5	1.1	4.9	1.1	4.2	13.0	0	91.5
2. Industrial Water													
	0.0	4.3	0	11.0 ¹	25.7	0.7	0	3.9	0	41.3	1.6	0	88.5
3. Irrigation Water													
	60.1	0	0	15.4 ²	0	0	0	0	0	0	140.9	30.6	247.0
4. Maintenance Flow													
	1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5
Total	69.9	5.1	23.4	34.7	48.6	18.7	1.1	8.8	1.1	45.5	167.5	41.1	465.5
Available Local Water													
	1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	0	2.1
WITHDRAWAL													
Available River Water													
	68.8	4.7	23.4	34.7	48.6	18.7	1.1	8.8	0.7	45.3	167.5	41.1	463.4
DEFICIT													
Water Supply Capacity of Existing and Proposed Dams	0	0	0	0	16.2	0	1.0	0	0	0	31.8	0	49.0
	68.8	4.7	23.4	34.7	32.4	18.7	0.1	8.8	0.7	45.3	135.7	41.1	414.4
Water Supply Capacity of Existing and Proposed Dams	79.8	2.2	0	34.7	28.6	9.2	0	0	0	0	221.7	41.3	417.5
BALANCE	-11.0	2.5	23.4	0	3.8	9.5	0.1	8.8	0.7	45.3	-86.0	-0.2	-3.1

/1: Including 6.6 MCM/yr and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4 respectively.

/2: To be diverted to Zone 2.

Note: (1) Proposed dams are Khlong Luang, Huai Bung, Khlong Yai and Khlong Thap Ma.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mark mean a shortage.

Table 34 FUTURE WATER DEMAND AND DEFICIT OF THE ALTERNATIVE III

DEMANDS	(Unit: MCM/YR)										TOTAL		
	1	1-1	2	3	4	5	6	7	8	9		10	10-1
1. Domestic Water													
Urban	2.1	0.4	23.3	0	18.5	15.2	1.0	2.9	1.1	4.0	9.7	0	78.2
Rural	5.8	0	0.1	0.3	1.2	0.3	0.1	2.0	0	0.2	3.3	0	13.3
Sub-total	7.9	0.4	23.4	0.3	19.7	15.5	1.1	4.9	1.1	4.2	13.0	0	91.5
2. Industrial Water	0	4.3	0	11.0 ¹	25.7	0.7	0	3.9	0	41.3	1.6	0	88.5
3. Irrigation Water	60.1	0	0	15.4 ²	0	0	0	0	0	0	140.9	30.6	247.0
4. Maintenance Flow	1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5
Total	69.9	5.1	23.4	34.7	48.6	18.7	1.1	8.8	1.1	45.5	167.5	41.1	465.5
Available Local Water	1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	0	2.1
<u>WITHDRAWAL</u>	68.8	4.7	23.4	34.7	48.6	18.7	1.1	8.8	0.7	45.3	167.5	41.1	463.4
Available River Water	0	0	0	0	14.2	0	1.0	0	0	0	31.8	0	47.0
<u>DEFICIT</u>	68.8	4.7	23.4	34.7	34.4	18.7	0.1	8.8	0.7	45.3	135.7	41.1	416.4
Water Supply Capacity of Existing and Proposed Dams	79.8	11.7	0	34.7	36.4	14.4	15.6	0	0	0	190.4	41.3	424.3
<u>BALANCE</u>	-11.0	-7.0	23.4	0	-2.0	4.3	-15.5	8.8	0.7	45.3	-54.7	-0.2	-7.9

¹ : Including 6.6 MCM/yr and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4 respectively.

² : To be diverted to Zone 2.

Note: (1) Proposed dams are New Ban Bung, Khlong Luang, Huai Bung, Huai Takhian Tia, Khlong Na Klua, Huai Yai, Khlong Yai and Khlong Thap Ma.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mark mean a shortage.

Table 35 FUTURE WATER DEMAND AND DEFICIT OF THE ALTERNATIVE IV

Zone	(Unit: MCM/YR)										TOTAL		
	1	1-1	2	3	4	5	6	7	8	9		10	10-1
DEMANDS													
1. Domestic Water													
Urban	2.1	0.4	23.3	0	18.5	15.2	1.0	2.9	1.1	4.0	9.7	0	78.2
Rural	5.8	0	0.1	0.3	1.2	0.3	0.1	2.0	0	0.2	3.3	0	13.3
Sub-total	7.9	0.4	23.4	0.3	19.7	15.5	1.1	4.9	1.1	4.2	13.0	0	91.5
2. Industrial Water													
	0	4.3	0	11.0 ^{/1}	25.7	0.7	0	3.9	0	41.3	1.6	0	88.5
3. Irrigation Water													
	60.1	0	0	15.4 ^{/2}	0	0	0	0	0	0	140.9	30.6	247.0
4. Maintenance Flow													
	1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5
Total	69.9	5.1	23.4	34.7	48.6	18.7	1.1	8.8	1.1	45.5	167.5	41.1	465.5
Available Local Water													
	1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	0	2.1
WITHDRAWAL													
Available River Water													
	68.8	4.7	23.4	34.7	48.6	18.7	1.1	8.8	0.7	45.3	167.5	41.1	463.4
	0	0	0	0	14.2	0	1.0	0	0	0	31.8	0	47.0
DEFICIT													
Water Supply Capacity of Existing and Proposed Dams													
	68.8	4.7	23.4	34.7	34.4	18.7	0.1	8.8	0.7	45.3	135.7	41.1	416.4
	62.0	11.7	0	34.7	36.4	9.2	0	0	0	0	221.7	41.3	417.0
BALANCE	6.8	-7.0	23.4	0	-2.0	9.5	0.1	8.8	0.7	45.3	-86.0	-0.2	-0.6

/1 : Including 6.6 MCM/yr and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4 respectively.

/2 : To be diverted to Zone 2.

Note: (1) Proposed dams are New Ban Eung, Khlong Luang, Huai Bung, Huai Takian Tia, Khlong Yai and Khlong Thay Ma.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mark mean a shortage.

Table 36 FUTURE WATER DEMAND AND DEFICIT WITH PROPOSED DAMS (1/4)

Year 1986	Zone	1	1-1	2	3	4	5	6	7	8	9	10	10-1	TOTAL
(Unit: MCM/yr)														
DEMANDS														
1. Domestic Water														
	Urban	1.2	0.2	12.4	0	4.8	4.3	0.4	1.0	0.7	0.8	3.3	-	29.1
	Rural	1.8	0	0.1	0.1	0.3	0.1	0	0.6	0	0.1	0.9	-	4.0
	Sub-total	3.0	0.2	12.5	0.1	5.1	4.4	0.4	1.6	0.7	0.9	4.2	-	33.1
	2. Industrial Water	0	4.3	0	7.7 ^{1/}	5.4	0.7	0	3.9	0	33.0	1.6	-	56.6
	3. Irrigation Water	0	0	0	15.4 ^{2/}	0	0	0	0	0	0	140.9	-	156.3
	4. Maintenance Flow	1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	-	28.0
	Total	4.9	4.9	12.5	31.2	13.7	7.6	0.4	5.5	0.7	33.9	158.7	-	274.0
	Available Local Water	1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	-	2.1
	WITHDRAWAL	3.8	4.5	12.5	31.2	13.7	7.6	0.4	5.5	0.3	33.7	158.7	-	271.9
	Available River Water	3.5	0	0	0	8.8	0	0.4	0	0	0	38.2	-	50.9
	DEFICIT	0.3	4.5	12.5	31.2	4.9	7.6	0	5.5	0.3	33.7	120.5	-	221.0
	Water Supply Capacity of Existing and Proposed Dam	0	11.7	0	34.7	12.6	9.2	0	0	0	0	159.3	-	227.5
	BALANCE	0.3	-7.2	12.5	-3.5	-7.7	-1.6	0	5.5	0.3	33.7	-38.8	-	-6.5

1/ Including 3.3 MCM and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4, respectively

2/ To be diverted to Zone 2

Note: (1) The proposed dam is New Ban Bung, which replaces the existing Ban Bung dam.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mean a shortage.

Table 36 FUTURE WATER DEMAND AND DEFICIT WITH PROPOSED DAMS (2/4)

Year 1991	Zone	(Unit: MCM/yr)										TOTAL		
		1	1-1	2	3	4	5	6	7	8	9		10	10-1
DEMANDS														
1. Domestic Water														
	Urban	1.7	0.3	12.7	0	6.4	7.8	0.8	1.9	0.9	1.5	4.3	0	38.3
	Rural	3.1	0	0.1	0.2	0.7	0.2	0	1.0	0	0.1	1.7	0	7.1
	Sub-total	4.8	0.3	12.8	0.2	7.1	8.0	0.8	2.9	0.9	1.6	6.0	0	45.4
2. Industrial Water														
		0	4.3	0	11.0	13.9	0.7	0	3.9	0	35.8	1.6	0	71.2
3. Irrigation Water														
		60.1	0	0	15.4	0	0	0	0	0	0	140.9	0	216.4
4. Maintenance Flow														
		1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	0	28.0
	Total	66.8	5.0	12.8	34.6	24.2	11.2	0.8	6.8	0.9	37.4	160.5	0	361.0
Available Local Water														
		1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	0	2.1
WITHDRAWAL														
	Available River Water	65.7	4.6	12.8	34.6	24.2	11.2	0.8	6.8	0.5	37.2	160.5	0	358.9
		0	0	0	0	14.0	0	0.8	0	0	0	30.9	0	45.7
DEFICIT														
	Water Supply Capacity of Existing and Proposed Dams	65.7	4.6	12.8	34.6	10.2	11.2	0	6.8	0.5	37.2	129.6	0	313.2
		79.8	11.7	0	34.7	12.6	9.2	0	0	0	0	21.7	0	369.7
	BALANCE	-14.1	-7.1	12.8	-0.1	-2.4	2.0	0	6.8	0.5	37.2	-92.1	0	-56.5

1/ Including 6.6 MCM/yr and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4 respectively

2/ To be diverted to Zone 2

Note: (1) The proposed dams are New Ban Bung, Khlong Luang and Khlong Yai.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mark mean a shortage.

Table 36 FUTURE WATER DEMAND AND DEFICIT WITH PROPOSED DAMS (3/4)

Year 1996	Zone	(Unit: MCM/yr)										TOTAL		
		1	1-1	2	3	4	5	6	7	8	9		10	10-1
<u>DEMANDS</u>														
1. Domestic Water														
	Urban	1.9	0.4	17.8	0	11.4	10.9	0.9	2.4	1.0	2.6	6.8	0	56.1
	Rural	4.6	0	0.1	0.3	1.0	0.3	0.1	1.5	0	0.2	2.5	0	10.6
	Sub-total	6.5	0.4	17.9	0.3	12.4	11.2	1.0	3.9	1.0	2.8	9.3	0	66.7
2. Industrial Water														
		0	4.3	0	11.0	17.4	0.7	0	3.9	0	38.5	1.6	0	77.4
3. Irrigation Water														
		60.1	0	0	15.4	0	0	0	0	0	140.9	30.6	0	247.0
4. Maintenance Flow														
		1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5
	Total	68.5	5.1	17.9	34.7	33.0	14.4	1.0	7.8	1.0	41.3	163.8	41.1	429.6
	Available Local Water	1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	0	2.1
<u>WITHDRAWAL</u>														
	Available River Water	67.4	4.7	17.9	34.7	33.0	14.4	1.0	7.8	0.6	41.1	163.8	41.1	427.5
<u>DEFICIT</u>														
	Water Supply Capacity of Existing and Proposed Dams	0	0	0	0	16.8	0	0.9	0	0	0	31.3	0	49.0
		67.4	4.7	17.9	34.7	16.2	14.4	0.1	7.8	0.6	41.1	132.5	41.1	378.5
		79.8	11.7	0	34.7	12.6	9.2	0	0	0	0	221.7	41.3	411.0
	BALANCE	-12.4	-7.0	17.9	0.0	3.6	5.2	0.1	7.8	0.6	41.1	-89.2	-0.2	-32.5

1/ Including 6.6 MCM/yr and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4 respectively

2/ To be diverted to Zone 2

Note: (1) The proposed dams are New Ban Bung, Khlong Luang, Khlong Yai and Khlong Thap Ma.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mark mean a shortage.

Table 36 FUTURE WATER DEMAND AND DEFICIT WITH PROPOSED DAMS (4/4)

Year 2001	Zone										TOTAL		
	1	1-1	2	3	4	5	6	7	8	9		10	10-1
DEMANDS													
1. Domestic Water													
Urban	2.1	0.4	23.3	0	18.5	15.2	1.0	2.9	1.1	4.0	9.7	0	78.2
Rural	5.8	0	0.1	0.3	1.2	0.3	0.1	2.0	0	0.2	3.3	0	13.3
Sub-total	7.9	0.4	23.4	0.3	19.7	15.5	1.1	4.9	1.1	4.2	13.0	0	91.5
2. Industrial Water	0	4.3	0	11.0	25.7	0.7	0	3.9	0	41.3	1.6	0	88.5
3. Irrigation Water	60.1	0	0	15.4	0	0	0	0	0	0	140.9	30.6	247.0
4. Maintenance Flow	1.9	0.4	0	8.0	3.2	2.5	0	0	0	0	12.0	10.5	38.5
Total	69.9	5.1	23.4	34.7	48.6	18.7	1.1	8.8	1.1	45.5	167.5	41.1	465.5
Available Local Water	1.1	0.4	0	0	0	0	0	0	0.4	0.2	0	0	2.1
WITHDRAWAL													
Available River Water	68.8	4.7	23.4	34.7	48.6	18.7	1.1	8.8	0.7	45.3	167.5	41.1	463.4
	0	0	0	0	19.6	0	1.0	0	0	0	31.8	0	52.4
DEFICIT													
Water Supply Capacity of Existing and Proposed Dams	68.8	4.7	23.4	34.7	29.0	18.7	0.1	8.8	0.7	45.3	135.7	41.1	411.0
	79.8	11.7	0	34.7	12.6	9.2	0	0	0	0	221.7	41.3	411.0
BALANCE	-11.0	-7.0	23.4	0	16.4	9.5	0.1	8.8	0.7	45.3	-86.0	-0.2	0

1/ Including 6.6 MCM/yr and 2.1 MCM/yr to be diverted to Zone 1 and Zone 4 respectively

2/ To be diverted to Zone 2

Note: (1) The proposed dams are New Ban Bung, Khlong Luang, Khlong Yai and Khlong Thap Ma.

(2) Figures with a mark (-) in line of BALANCE mean an excess in supply capacity, while figures without mark mean a shortage.

Table 37 SUMMARY OF CONSTRUCTION COST OF
ALTERNATIVE WATER SUPPLY PLANS

(Unit: $\text{฿}10^6$)

Description	Water Supply Alternatives			
	I	II	III	IV
1. Construction Cost of Dams				
Khlong Luang dam	1,292.8	1,292.8	1,292.8	1,075.0
New Ban Bung dam	409.2	-	409.2	409.2
Huai Bung dam	-	652.6	652.6	652.6
Huai Takhian Tia dam	-	-	403.5	403.5
Khlong Na Klua dam	-	-	339.2	-
Huai Yai dam	-	-	1,000.9	-
Khlong Yai dam	1,179.1	1,179.1	635.0	1,179.1
Khlong Thap Ma dam	721.0	721.0	721.0	721.0
Sub-total	3,602.1	3,845.5	5,454.2	4,440.4
2. Construction Cost of Raw Water Conveyance Systems				
Khlong Luang system	888.7	846.2	888.7	-
Ban Bung system	368.2	155.1	368.2	328.3
Bang Phra system	-	213.0	-	346.0
Nong Kho system	868.5	898.9	976.1	881.8
Nong Pla Lai system	1,729.7	1,729.7	-	1,729.7
Dok Krai system	215.0	215.0	215.0	215.0
Ban Khai system	193.9	193.9	193.9	193.9
Bang Lamung system	238.5	238.5	238.5	238.5
Huai Yai system	71.4	71.4	-	71.4
Sub-total	4,573.9	4,561.7	2,880.4	4,004.6
Total	8,176.0	8,407.2	8,334.6	8,445.0

Table 38 FEATURES OF ALTERNATIVE WATER TRANSMISSION PLANS (1/2)

Water Supply Alternatives	Works	Unit	Water Conveyance Systems									
			Khlong Luang	Ban Bung	Bang Pira	Nong Kho	Nong Pla Lai	Dok Krai	Ban Khai	Bang Lamung	Huai Yai	
I	Intake Pump	KWxUnitxLoc.	160x3x1	120x2x1	-	120x2x1	310x5x1	-	160x2x1	320x3x1	20x2x1	
	Booster Pump	KWxUnitxLoc.	170x3x1 140x3x1	180x2x1	-	140x5x1 270x2x1	290x5x1	250x2x1	-	-	-	
	Pipeline	Dia.xkmxrow	φ500x19x2 φ600x37x2	φ600x26x1 φ700x14x1	-	φ600x1x1 φ900x21x2	φ900x56x2	φ700x14x1 φ600x9x1	φ600x16x1	φ900x10x1	φ300x1x1	
	Receiving Facilities	Loc.	2	1	-	2	1	2	1	-	1	
II	Intake Pump	KWxUnitxLoc.	160x3x1	-	140x2x1	100x3x1 100x4x1 70x2x1 270x2x1	310x5x1	-	160x2x1	320x3x1	20x2x1	
	Booster Pump	KWxUnitxLoc.	170x3x1 240x2x1	100x2x1	-	-	290x5x1	250x2x1	-	-	-	
	Pipeline	Dia.xkmxrow	φ500x19x2 φ600x23x2 φ500x14x2	φ500x26x1	φ600x19x1	φ800x1x1 φ800x21x2 φ500x10x1 φ700x12x1	φ900x56x2	φ700x14x1 φ600x9x1	φ600x16x1	φ900x10x1	φ300x1x1	
III	Receiving Facilities	Loc.	2	1	1	2	1	2	1	-	1	
	Intake Pump	KWxUnitxLoc.	160x3x1	120x2x1	-	120x2x1 170x3x1 110x2x1 290x2x1 200x2x1	-	160x2x1	320x3x1	-	-	
	Booster Pump	KWxUnitxLoc.	170x3x1 140x3x1	180x2x1	-	-	-	250x2x1	-	-	-	
Receiving Facilities	Pipeline	Dia.xkmxrow	φ500x19x2 φ600x37x2	φ600x26x1 φ700x14x1	-	φ600x1x1 φ900x5x1 φ1200x5x1 φ800x3x1 φ600x9x1 φ700x25x1 φ600x5x1	-	φ700x14x1 φ700x14x1	φ600x16x1	φ900x10x1	-	
	Loc.	2	1	-	2	1	2	1	-	-	-	

Water Conveyance Systems

Water Supply Alternatives	Works	Unit	Klong Luang	Ban Bung	Bang Phra	Nong Kho	Nong Pla Lai	Dok Krai	Ban Khai	Bang Lamung	Huai Yai
IV	Intake Pump	kWxUnitxLoc.	-	120x2x1	200x3x1	100x4x1 150x3x1 170x3x1 60x2x1 160x2x1	310x5x1	-	160x2x1	320x3x1	20x2x1
	Booster Pump	kWxUnitxLoc.	-	20x2x1	-	-	290x5x1	250x2x1	-	-	-
	Pipeline	Dia. xkmxrow	-	φ300x26x1 φ400x10x1 φ350x13x1 φ250x14x1	φ800x19x1	φ900x1x1 φ900x21x2 φ700x10x1 φ700x13x1 φ500x9x1 φ600x5x1	φ900x56x2	φ700x14x1 φ600x9x1	φ600x16x1	φ900x10x1	φ300x1x1
Receiving Facilities	Loc.	-	2	1	2	1	2	1	-	1	

Table 39 DEVELOPMENT PROGRAMME (1/2)

Year	Water Resources Facilities	Raw Water Conveyance Systems	Irrigation Development
1986	Nong Pla Lai dam (On-going)	<u>Dok Krai Pipeline Project (On-going)</u> Intake pump Receiving well : Map Ta Phut Pipeline : $\phi 1,350$ mm x 27.6 km x 1 row, Dok Krai dam-Map Ta Phut	Upgrading of Ban Khai Area: 4,800 ha
	New Ban Bung dam	<u>Ban Bung System</u> Intake pump : 120 kW x 2 units at New Ban Bung Dam Boosting P.S : 180 kW x 2 units at Ban Yot Noen Receiving well : Khao Choeng Thian Pipeline : $\phi 600$ mm x 26 km x 1 row, Ban Bung-Ban Yot Noen $\phi 700$ mm x 14 km x 1 row, Ban Yot Noen-Khao Choeng Thian	Ban Khai Extension : 5,400 ha
		<u>Nong Kho System, 1st Stage</u> Intake pump : 120 kW x 2 units and 140 kW x 3 units at Nong Kho dam Receiving well : Ban Nong Krabok Pipeline : $\phi 600$ mm x 1 km x 1 row, Nong Kho-Bang Phra $\phi 900$ mm x 21 km x 1 row, Nong Kho-Ban Nong Krabok	
		<u>Dok Krai System</u> Boosting P.S : 250 kW x 2 units at Map Ta Phut Receiving well : Ban Krok Taback & Khao Mon Pipeline : $\phi 700$ mm x 14 km x 1 row, Map Ta Phut-Ban Krok Taback $\phi 600$ mm x 9 km x 1 row, Ban Krok Taback-Khao Mon	
		<u>Ban Khai System</u> Intake pump : 160 kW x 2 units at Ban Khai Receiving well : Rayong Pipeline : $\phi 600$ mm x 16 km x 1 row, Ban Khai-Rayong	
		<u>Bang Lamung System,</u> Intake pump : 320 kW x 3 units at Huai Kon Dai Pipeline : $\phi 900$ mm x 10 km x 1 row, Huai Kon Dai-Bang Nong Krabok	

Table 39 DEVELOPMENT PROGRAMME (2/2)

Year	Water Resources Facilities	Raw Water Conveyance Systems	Irrigation Development
		<u>Huai Yai System</u>	
		Intake pump : 20 kW x 2 units at Huai Yai	
		Receiving well : Ban Huai Yai	
		Pipeline : ϕ 300 mm x 1 km x 1 row, Huai Yai-Ban Huai Yai	
1991	Khlong Luang dam Khlong Yai dam	<u>Khlong Luang System, 1st Stage</u>	Khlong Luang: 4,700 ha
		Intake pump : 160 kW x 2 units at Khlong Luang dam	
		Boosting P.S. : 170 kW x 2 units at Ban Suan Phak 140 kW x 2 units at Ban Yot Noen	
		Receiving well : Ban Suan Phak & Khao Choeng	
		Pipeline : ϕ 500 mm x 19 km x 1 row, Khlong Luang-Ban Suan Phak ϕ 600 mm x 37 km x 1 row, Ban Suan Phak-Khao Choeng Thian	
		<u>Nong Kho System, 2nd Stage</u>	
		Boosting P.S. : 270 kW x 2 units at Ban Nong Krabok	
		Receiving well : Map Prachan	
		Pipeline : 700 mm x 22 km x 1 row, Ban Nong Krabok-Map Prachan	
		<u>Nong Pla Lai System, 1st Stage</u>	
		Intake pump : 310 kW x 3 units at Nong Pla Lai dam	
		Receiving well : Nong Kho dam	
		Boosting P.S. : 290 kW x 3 units at Ban Thap Thong	
		Head tank : Ban Khao Khayai	
		Pipeline : ϕ 900 mm x 56 km x 1 row, Nong Pla Lai-Nong Kho	
1996	Khlong Thap Ma dam	<u>Nong Kho System, 3rd Stage</u>	Thap Ma: 2,200 ha
		Intake pump : 140 kW x 2 units at Nong Kho dam	
		Pipeline : ϕ 900 mm x 21 km x 1 row, Nong Kho-Ban Nong Krabok	
		<u>Nong Pla Lai System, 2nd Stage</u>	
		Intake pump : 310 kW x 2 units at Nong Pla Lai dam	
		Pipeline : ϕ 900 mm x 56 km x 1 row, Nong Pla Lai-Nong Kho	
		Boosting P.S. : 290 kW x 2 units at Ban Thap Thong	
		<u>Khlong Luang System, 2nd Stage</u>	
		Pipeline : 500 mm x 19km x 1 600 mm x 37km x 1	
		Intake Pump : 160 kW x 1 unit at Khlong Luang Dam	
		Boosting P.S. : 170 kW x 1 unit at Ban Suan Phak 140 kW x 1 unit at Ban Yot Noen	

Table 40 MAIN FEATURES OF WATER TRANSMISSION FACILITIES

Description	Unit	System										
		Khlong Luang	Ban Bung	Nong Kho	Nong Kho dam	Nong Kho dam	Nong Kho dam	Nong Pla Lai	Dok Krai	Ban Khai	Bang Lamung	Huai Yai
2.1 Feeding Quantity	10 ⁶ m ³ /yr	12.4	7.3	40.7	31.3	9.5	7.4	18.4	1.0			
2.2 Intake Facilities												
Location		Khlong Luang dam	New Ban Bung dam	Nong Kho dam	Nong Kho dam	Nong Kho dam	Nong Pla Lai dam		Ban Khai	Huai Kong Dai	Huai Yai	
Pumping equipment	kWxunit	160x3	120x2	120x2	140x5	310x5	310x5		160x2	320x3	20x2	
Electrical equipment	kVAxunit	600x1	300x1	300x1	500x1	400x1	950x1		400x1	1000x1	50x1	
2.3 Boosting Pump Station												
Location		Ban Suan Phak	Ban Yot Noen	Ban Nong Krabok	Ban Nong Krabok	Ban Thap Thong			Map-Ta Phut			
Pumping equipment	kWxunit	170x3	140x3	270x2	270x2	290x5			250x2			
Electrical equipment	kVAxunit	600x1	500x1	500x1	500x1	900x1			500x1			
2.4 Receiving Facilities												
Location		Ban Suan Phak	Khao Choeng Thian	Ban Nong Krabok	Ban Nong Krabok	Nong Koh			Ban Krok Tabae	Rayong	Ban Huai Yai	
		Khao Choeng Thian		Map Prackan								
2.5 Pipeline												
Dia. x kmxrow		ø500x19x2 (Khlong Luang - Ban Suan Phak)	ø600x26x1 (Ban Buang - Ban Yot Noen)	ø600x1x1 (Nong Kho - Bang Phra)	ø900x56x2 (Nong Pla Lai-Nong Kho)	ø700x14x1 (Map Ta Shut - Ban Krok Tabae)	ø900x16x1 (Ban Khai - Rayong)	ø700x14x1 (Map Ta Shut - Ban Krok Tabae)	ø900x10x1 (Huai Kong Dai - Ban Nong Krabok)	ø300x1x1 (Huai Yai - Ban Huai Yai)		
		ø600x37x2 (Ban Suan Phak - Khao Choeng Thian)	ø700x14x1 (Ban Yot Noen - Khao Choeng Thian)	ø900x21x2 (Nong Kho - Ban Nong Krabok)	ø700x22x1 (Ban Nong Krabok) - Map Prachan							

Table 41 INVESTMENT REQUIREMENT BY 5-YEAR PERIOD

(Unit: $\text{฿}10^6$)

Description	1986	1991	1996	2001	Total
<u>1. Water Resources Facilities</u>					
New Ban Bung dam	409.2	-	-	-	409.2
Khlong Luang dam	-	1,292.8	-	-	1,292.8
Khlong Yai dam	-	1,179.1	-	-	1,179.1
Khlong Thap Ma dam	-	-	721.0	-	721.0
Sub-total	409.2	2,471.9	721.0	-	3,602.1
<u>2. Raw Water Conveyance Systems</u>					
Khlong Luang system	-	535.7	353.0	-	888.7
Ban Bung system	368.2	-	-	-	368.2
Nong Kho system	421.2	182.8	264.5	-	868.5
Nong Pla Lai system	-	947.3	782.4	-	1,729.7
Dok Krai system	215.0	-	-	-	215.0
Ban Khai system	193.9	-	-	-	193.9
Bang Lamung system	238.5	-	-	-	238.5
Huai Yai system	71.4	-	-	-	71.4
Sub-total	1,508.2	1,665.8	1,399.9	-	4,573.9
<u>3. Irrigation Development</u>					
Khlong Luang area	-	302.9	-	-	302.9
Ban Khai area	195.5	-	-	-	195.5
Ban Khai extension area	-	394.7	-	-	394.7
Thap Ma area	-	-	126.1	-	126.1
Sub-total	195.5	697.6	126.1	-	1,019.2
Total	2,112.9	4,835.3	2,247.0	-	9,195.2