8.4 Organization in Basin-Wide Management Level

As mentioned in Section 1.2, the organization in the basin- wide management level will undertake an integrated approach to the basin-wide implementation of operation/maintenance for flood control and water resources development facilities within the subject watershed boundary. The subject watershed boundary (SWS) is herein defined to cover the two objective river basins (Kampar and Indragiri river basins).

The organization in the basin-wide management level will be composed of two units, namely, the Basin-Wide O&M Execution Unit ("UPT SWS" in the Indonesian term) and the Coordination Board (SWS Board) for the basin-wide operation/maintenance. The details of these units are described below.

8.4.1 Basin-Wide O&M Execution Unit

Among the objective facilities in the Overall Development Plan, flood control and water resources development facilities will be operated and maintained by the Basin-Wide O&M Execution Unit (UPT SWS). The major roles of the UPT SWS are as enumerated below.

- To carry out periodical inspection and maintenance work on the objective facilities;
- To prepare the annual water allocation plan based on the annual water use requested by the Provincial Water Users Association and to monitor conflicts associated with the annual water allocation plan;
- To operate the water resources development facilities such as dam reservoirs, water conveyance canals, and weirs on main streams in accordance with the water allocation plan;
- To operate flood control facilities such as dam reservoirs and weirs on main streams, and issue flood warning as required; and,
- To determine water service charges such as the irrigation service fee, the Water Supply Public Corporation (PAM) charge, the hydropower supply charge, and the water pollution charge for industry, all of which could

contribute to the necessary financial resources for the activities of the UPT SWS as well as the SWS Board mentioned below.

8.4.2 Basin-Wide Coordination Board

The Basin-Wide Coordination Board (SWS Board) is proposed to resolve and coordinate potential conflicts between the annual water allocation plan prepared/monitored by the UPT SWS and the water demand required from the water user groups. Thus, the SWS Board will coordinate matters related solely to the operation/maintenance of water resource development facilities.

The members of the SWS Board will be composed of representatives of the districts, the water user groups, and the relevant provincial government offices.

8.5 Organization in District Level

The organization in the district level will be composed of the district execution unit and the district water user groups. The details of these components are described below.

8.5.1 District Execution Unit

The existing District Office for Public Works (DPUK) will be responsible for the operation/maintenance of the following facilities:

- Minor facilities installed within the administrative boundary of each district for flood control and water resources development such as flap gates/culverts installed along rivers and secondary/tertiary water distribution pipes; and,
- All urban drainage facilities including drainage pumps, retarding ponds, and primary, secondary and tertiary drainage channels.

The operation/maintenance for minor facilities as mentioned above will be based on consultations with the Basin-Wide O&M Execution Unit (UPT SWS) and executed by the related district offices for public works in Kabupaten Kampar, Kabupaten Indragiri Hulu, Kabupaten Indragiri Hilir, Kabupaten Limapuluh Kota, Kabupaten Solok and Kabupaten Sawahlunto/Sijunjung, respectively.

8.5.2 District Water User Group

The Water Resources Committee (WRC) will be formed out of the existing district irrigation committee and expanded to a larger user committee accommodating representatives from all end water users. The WRC will prepare the annual water use plan based on coordination among the end users, and submit the annual plan to the Provincial WRC.

CHAPTER 9 FINANCIAL AFFORDABILITY OF PROPOSED PROJECT

9.1 Basic Concept

The optimum plans for flood control and water resources development have been formulated in this Study on the premise that proposed works are to be completed in the following target completion years:

Projects Proposed in the Overall Development Plan	2019
Priority Projects	2004

The proposed implementation schedules have been prepared in accordance with the above target completion years and annual cost disbursements have been obtained accordingly.

The financial affordability of the Government of Indonesia to the proposed optimum plan is herein assessed. The assessment is carried out based on the budget and actual expenditure in the Fifth Five-Year National Development Plan (PELITA V) for 1990-1994 and the projected budget in the Sixth and Seventh Five-Year National Development Plan (REPELITA VI for 1995-1999 and REPELITA VII for 2000-2004).

The budget reflects only the national and provincial values without any itemized statements. The level of assessment for the financial affordability is, accordingly, preliminary.

9.2 Disbursement Schedule of the Project

Disbursement schedules for the Overall Development Plan and the Priority Projects have been discussed in detail in the foregoing chapters. A summary of the disbursement schedule is presented in Table 9.2.1 and in Fig. 9.2.1, and the total costs have been calculated as follows:

Unit: Rp. 10^9

Currency	Overall Development Plan	Priority Projects
Foreign Currency (F.C.)	3,306.9	648.9
Local Currency (L.C.)	2,824.8	574.9
Total	6,131.7	1,223.8

Note: Physical Contingency and Value Added Tax are included. Price Contingency is not included.

9.3 Actual Expenditure and Budget

The budget required for the flood control and water resources development projects will be allocated to the Directorate General of Water Resources Development (DGWRD). The budget and actual expenditure for the sectors of rivers and irrigation in PELITA V are given in Tables 9.3.1 and 9.3.2, respectively, presenting values of the whole Indonesia and the Riau and West Sumatra provinces. The budgets of the whole Indonesia for the same sectors in the Second Long-Term Development Plan (REPELITA VI to X, 1995-2019) are given in Table 9.3.3.

Since the budget in the Second Long-Term Development Plan is available for the whole Indonesia only, those for Riau and West Sumatra provinces should be estimated. The ratio of the budget for these provinces have been estimated on the basis of the budget and actual expenditure in PELITA V, as presented below.

As shown in Table 9.3.1, the allocated budget to the sectors of rivers and irrigation for Riau and West Sumatra provinces are 15.7% and 2.8%, respectively of the whole Indonesia in PELITA V. Table 9.3.2 presents those for actual expenditures, and the same ratios are 7.8% and 3.4%, respectively. In the present study, it is assumed that 15.7% and 3.4% (larger value of the budget and expenditure) could be allocated, respectively, to the sector of rivers and irrigation in Riau and West Sumatra provinces in REPELITA VI onward.

Accordingly, the assumed budget in the sectors of rivers and irrigation for Riau and West Sumatra provinces are calculated from Table 9.3.3 and the above ratio for the period of the Overall Development Plan (1996-2019) and the Priority Project (1996-2004), as follows:

Item	Year	Sector	Assumed Budget (Rp. 10^9)
Overall Development Plan	1996-2019	Rivers	6,312
		Irrigation	650
		Total	6,962
Priority Project	1996-2004	Rivers	1,594
		Irrigation	331
		Total	1,925

9.4 Evaluation

The total disbursement cost and assumed budget for the Overall Development Plan and the Priority Projects have been compared for evaluation. In the evaluation, it is considered that the local currency portion is to be burdened by the budget in the Indonesian Government and the foreign currency portion could be acquired as foreign loans.

Item	Year	Currency	Cost (Rp. 10^9)
Overall Development Plan	1996-2019	Foreign	3,307
		Local	2,825
		Total	6,132
Priority Project	1996-2004	Foreign	649
		Local	575
		Total	1,224

As presented in the two tables above, the local currency portion required for the implementation of the Overall Development Plan is Rp. $2,825\times10^9$ while the assumed budget for the sectors of rivers and irrigation in Riau and West Sumatra provinces is Rp. $6,962\times10^9$. On the other hand, the local currency portion required for the implementation of the Priority Projects is estimated at Rp. 575×10^9, while the assumed budget for the period of 1996-2004 is Rp. $1,925\times10^9$ for the sectors of rivers and irrigation in Riau and West Sumatra provinces. Accordingly, both Overall Development Plan projects and Priority Projects could be implemented within the present budget if higher priority is given to the present project.

It should be considered, however, that the historical expenditure and the presently considered budget for Riau Province is quite small compared to those of West Sumatra Province. This can be said for both long-term period and short-term period. Accordingly, allocation of more budget to Riau Province is indispensable for the project implementation.

TABLES

Table 2.4.1 PRESENT LAND USE IN STUDY AREA

Category	Kampar River Basin		Indragiri River Basin		In-between Area		Total	
	Area (ha)	Ratio (%)	Area (ha)	Ratio (%)	Area (ha)	Ratio (%)	Area (ha)	Ratio (%)
1) Forest	1,657,300	67.5	883,150	54.3	1,033,800	97.7	3,574,250	69.5
2) Bush and Grassland	170,800	7.0	131,910	8.1	8,300	0.8	311,010	6.1
3) Shifting Cultivation	92,500	3.8	85,970	5.3	2,800	0.3	181,270	3.5
4) Upland Cultivation	24,600	1.0	41,140	2.5	6,800	0.6	72,540	1.4
5) Wetland Cultivation	40,400	1.6	71,160	4.4	4,900	0.5	116,460	2.3
6) Tree Crops/ Estate	465,700	19.0	409,010	25.1	1,400	0.1	876,110	17.0
7) Settlement	3,500	0.1	4,460	0.3	0	0.0	7,960	0.2
Total	2,454,800	100.0	1,626,800	100.0	1,058,000	100.0	5,139,600	100.0

Data Sources : Analytical Results of Landsat Information by PUS-DATA, DPU, Indonesian Government

Table 2.4.2 FUTURE LAND USE IN STUDY AREA

Category	Kampar Basin (ha)	Indragiri Basin (ha)	In-between Area (ha)	Total	
				Area (ha)	Ratio (%)
1) Area to be protected for Future Use	581,600	121,970	218,400	921,970	18.0
2) Food Crop Farming, Animal Husbandry, Agro Industry Area	51,400	121,870	12,900	186,170	3.6
3) Plantation Development Area	682,200	426,160	681,300	1,789,660	34.8
4) Forestry Development Area	794,600	262,640	137,300	1,194,540	23.2
5) Urban Development and Transmigration Settlement Area	42,400	28,830		71,230	1.4
6) Area to be developed in accordance with Central Government Policy (Special Priority)	31,500	-	-	31,500	0.6
7) City Development Area	8,900	7,350	8,100	24,350	0.5
8) Other Purpose Development Area	112,700	366,020	-	478,720	9.3
9) Conservation Area	149,500	291,960	-	441,460	8.6
(a) Conservation Forest, Wildlife, Natural Resources	132,500	253,890	-	-	-
(b) Erosion Area	17,000	38,070	-	-	-
Total	2,454,800	1,626,800	1,058,000	5,139,600	100.0

Data Sources : Future Land Use (Draft) prepared by BAPPEDA, Riau Province and West Sumatra Province

Table 3.2.1 POPULATION BY ISLAND & PROVINCE IN INDONESIA

Unit of population : 10^3 Person

No.	Island	Province	1971		1980		1990		1995		2000		Average Annual Growth Rate(%)			
			Population	Share (%)	Population	Share (%)	Population	Share (%)	Population	Share (%)	Population	Share (%)	1971/80	1980/90	1971/90	1990/2000
1	SUMATRA	Daerah Istimewa Aceh	2,009	1.69	2,611	1.77	3,416	1.90	3,860	1.98	4,283	2.04	2.95	2.72	2.83	2.29
2		Sumatra Utara	6,622	5.55	8,361	5.67	10,256	5.72	11,145	5.71	11,915	5.66	2.62	2.06	2.33	1.51
3		Sumatra Barat	2,793	2.34	3,407	2.31	4,000	2.23	4,328	2.22	4,632	2.20	2.23	1.62	1.91	1.48
4		Riau	1,642	1.38	2,169	1.47	3,304	1.84	3,925	2.01	4,615	2.19	3.14	4.30	3.75	3.40
5		Jambi	1,006	0.84	1,446	0.98	2,021	1.13	2,383	1.22	2,774	1.32	4.11	3.40	3.74	3.22
6		Sumatra Selatan	3,441	2.89	4,630	3.14	6,313	3.52	7,233	3.70	8,142	3.87	3.35	3.15	3.25	2.58
7		Bengkulu	519	0.44	768	0.52	1,179	0.66	1,415	0.72	1,673	0.80	4.45	4.38	4.41	3.56
8		Lampung	2,777	2.33	4,625	3.14	6,018	3.35	6,680	3.42	7,303	3.47	5.83	2.67	4.15	1.95
		Total	20,809	17.46	28,017	19.00	36,507	20.35	40,970	20.98	45,337	21.54	3.36	2.68	3.00	2.19
9	JAWA	DKI Jakarta	4,579	3.84	6,503	4.41	8,259	4.60	9,161	4.69	10,055	4.78	3.97	2.42	3.15	1.99
10		Jawa Barat	21,624	18.14	27,453	18.61	35,384	19.73	39,337	20.14	43,285	20.57	2.69	2.57	2.63	2.04
11		Jawa Tengah	21,877	18.35	25,373	17.20	28,521	15.90	29,688	15.20	30,551	14.52	1.66	1.18	1.41	0.69
12		DI Yogyakarta	2,489	2.09	2,751	1.87	2,913	1.62	2,917	1.49	2,897	1.38	1.12	0.57	0.83	-0.05
13		Jawa Timur	25,517	21.41	29,189	19.79	32,504	18.12	33,886	17.35	34,972	16.62	1.51	1.08	1.28	0.73
		Total	76,086	63.83	91,269	61.88	107,581	59.97	114,988	58.88	121,761	57.86	2.04	1.66	1.84	1.25
14	NUSA TENGGARA	Bali	2,120	1.78	2,470	1.67	2,778	1.55	2,902	1.49	3,006	1.43	1.71	1.18	1.43	0.79
15		Nusa Tenggara Barat	2,203	1.85	2,725	1.85	3,370	1.88	3,655	1.87	3,914	1.86	2.39	2.15	2.26	1.51
16		Nusa Tenggara Timur	2,295	1.93	2,737	1.86	3,269	1.82	3,583	1.83	3,865	1.84	1.98	1.79	1.88	1.69
17		Timor Timur	-	-	555	0.38	748	0.42	843	0.43	921	0.44	-	3.03	-	2.10
		Total	6,618	5.55	8,487	5.75	10,165	5.67	10,983	5.62	11,706	5.56	2.80	1.82	2.28	1.42
18	KALIMANTAN	Kalimantan Barat	2,020	1.69	2,486	1.69	3,229	1.80	3,652	1.87	4,053	1.93	2.33	2.65	2.50	2.30
19		Kalimantan Tengah	702	0.59	954	0.65	1,396	0.78	1,637	0.84	1,887	0.90	3.47	3.88	3.68	3.06
20		Kalimantan Selatan	1,699	1.43	2,065	1.40	2,598	1.45	2,900	1.49	3,203	1.52	2.19	2.32	2.26	2.12
21		Kalimantan Timur	734	0.62	1,218	0.83	1,877	1.05	2,331	1.19	2,856	1.36	5.79	4.42	5.07	4.29
		Total	5,155	4.32	6,723	4.56	9,100	5.07	10,521	5.39	11,999	5.70	2.99	3.07	3.04	2.80
22	SULAWESI	Sulawesi Utara	1,718	1.44	2,115	1.43	2,478	1.38	2,652	1.36	2,821	1.34	2.34	1.60	1.95	1.31
23		Sulawesi Tengah	914	0.77	1,290	0.87	1,711	0.95	1,948	1.00	2,202	1.05	3.90	2.86	3.36	2.56
24		Sulawesi Selatan	5,181	4.35	6,062	4.11	6,982	3.89	7,578	3.88	8,149	3.87	1.76	1.42	1.58	1.56
25		Sulawesi Tenggara	714	0.60	942	0.64	1,350	0.75	1,594	0.82	1,849	0.88	3.13	3.66	3.41	3.20
		Total	8,527	7.15	10,409	7.06	12,521	6.98	13,772	7.05	15,022	7.14	2.24	1.86	2.04	1.84
26	MALUKU and IRIANJAYA	Maluku	1,090	0.91	1,411	0.96	1,856	1.03	2,095	1.07	2,331	1.11	2.91	2.78	2.84	2.30
27		Irian Jaya	923	0.77	1,174	0.80	1,649	0.92	1,956	1.00	2,285	1.09	2.71	3.46	3.10	3.31
		Total	2,013	1.69	2,585	1.75	3,505	1.95	4,051	2.07	4,615	2.19	2.82	3.09	2.96	2.79
INDONESIA			119,208	100.00	147,490	100.00	179,379	100.00	195,283	100.00	210,439	100.00	2.39	1.98	2.17	1.61

Source:Statistical Year Book of Indonesia,1992 ,Central Bureau of Statistics

Note:Figures of 1995 and 2000 are forecasted by Central Bureau of Statistics.

Table 3.2.2 POPULATION OF STUDY AREA

Unit : Person

Province	Kabupaten/Kotamdaya	1982			1987			1991			Average Growth Rate(%)		
		Population	Share(%)		Population	Share(%)		Population	Share(%)		1982/87	1987/91	1982/91
			Study Area	Province		Study Area	Province		Study Area	Province			
Riau	Kab.Kampar	422,360	12.1	18.1	573,416	14.4	20.6	587,164	13.3	17.6	6.31	0.59	3.73
	Kab.Indragiri Hulu	259,032	7.4	11.1	330,452	8.3	11.9	379,859	8.6	11.4	4.99	3.54	4.35
	Kab.Indragiri Hilir	414,309	11.8	17.8	437,777	11.0	15.8	486,037	11.0	14.5	1.11	2.65	1.79
	Kodya.Pekanbaru	192,196	5.5	8.2	212,704	5.3	7.7	394,133	8.9	11.8	2.05	16.67	8.31
	Sub-total	1,287,897	36.8	55.2	1,554,349	39.0	55.9	1,847,193	41.9	55.2	3.83	4.41	4.09
	Province	2,333,156	-	100.0	2,778,803	-	100.0	3,345,467	-	100.0	3.56	4.75	4.09
West Sumatra	Kab.Solok	364,720	10.4	10.3	414,145	10.4	10.7	431,389	9.8	10.4	2.57	1.03	1.88
	Kab.Sawahlunto/Sijunjun	242,114	6.9	6.9	277,175	6.9	7.2	311,630	7.1	7.5	2.74	2.97	2.84
	Kab.Tanahdatar	324,488	9.3	9.2	351,970	8.8	9.1	350,296	7.9	8.5	1.64	-0.12	0.85
	Kab.Agam	396,119	11.3	11.2	414,624	10.4	10.7	416,465	9.4	10.1	0.92	0.11	0.56
	Kab.Limapuluh Kota	281,553	8.0	8.0	300,134	7.5	7.8	305,070	6.9	7.4	1.29	0.41	0.90
	Kab.Pasaman	371,352	10.6	10.5	426,260	10.7	11.0	470,456	10.7	11.4	2.80	2.50	2.66
	Kodya.Solok	32,900	0.9	0.9	37,217	0.9	1.0	42,675	1.0	1.0	2.50	3.48	2.93
	Kodya.Sawahlunto	14,185	0.4	0.4	15,349	0.4	0.4	15,740	0.4	0.4	1.59	0.63	1.16
	Kodya.Padang Panjang	34,216	1.0	1.0	34,876	0.9	0.9	39,698	0.9	1.0	0.38	3.29	1.66
	Kodya.Bukittinggi	71,999	2.1	2.0	76,220	1.9	2.0	86,771	2.0	2.1	1.15	3.29	2.10
	Kodya.Payakunbu	81,971	2.3	2.3	86,094	2.2	2.2	93,812	2.1	2.3	0.99	2.17	1.51
	Sub-total	2,215,617	63.2	62.9	2,434,064	61.0	62.9	2,564,002	58.1	61.9	1.90	1.31	1.64
	Province	3,524,198	-	100.0	3,871,962	-	100.0	4,141,444	-	100.0	1.90	1.70	1.81
	Total of Study Area	3,503,514	100.0	-	3,988,413	100.0	-	4,411,195	100.0	-	2.63	2.55	2.59

Source : 1. Riau in Figures, 1992, Statistical Office of Riau Province
2. West Sumatra in Figures, 1992, Statistical Office of West Sumatra Province

Table 3.2.3 POPULATION DENSITY BY ISLAND & PROVINCE IN INDONESIA

Unit:Person/km^2

No.	Island	Province	Area		1971	1980	1990	1995	2000	Average Annual Growth Rate(%)			
			(km^2)	Share (%)						1971/80	1980/90	1971/90	1990/2000
1	SUMATRA	Daerah Istimewa Aceh	55,392	2.89	36.3	47.1	61.7	69.7	77.3	2.95	2.72	2.83	2.29
2		Sumatra Utara	70,787	3.69	93.5	118.1	144.9	157.4	168.3	2.62	2.06	2.33	1.51
3		Sumatra Barat	49,778	2.59	56.1	68.4	80.4	87.0	93.0	2.23	1.62	1.91	1.48
4		Riau	94,561	4.93	17.4	22.9	34.9	41.5	48.8	3.14	4.30	3.75	3.40
5		Jambi	44,800	2.33	22.5	32.3	45.1	53.2	61.9	4.11	3.40	3.74	3.22
6		Sumatra Selatan	103,688	5.40	33.2	44.7	60.9	69.8	78.5	3.35	3.15	3.25	2.58
7		Bengkulu	21,168	1.10	24.5	36.3	55.7	66.8	79.0	4.45	4.38	4.41	3.56
8		Lampung	33,307	1.74	83.4	138.9	180.7	200.6	219.3	5.83	2.67	4.15	1.95
		Total	473,481	24.67	43.9	59.2	77.1	86.5	95.8	3.36	2.68	3.00	2.19
9	JAWA	DKI Jakarta	661	0.03	7,761.0	11,022.0	12,494.7	13,858.5	15,211.5	3.97	1.26	2.54	1.99
10		Jawa Barat	46,229	2.41	467.0	592.9	765.4	850.9	936.3	2.69	2.59	2.63	2.04
11		Jawa Tengah	34,206	1.78	639.6	741.8	833.8	867.9	893.1	1.66	1.18	1.41	0.69
12		DI Yogyakarta	3,169	0.17	785.4	868.1	919.2	920.4	914.3	1.12	0.57	0.83	-0.05
13		Jawa Timur	47,921	2.50	532.5	609.1	678.3	707.1	729.8	1.51	1.08	1.28	0.73
		Total	132,186	6.89	575.6	690.5	813.9	869.9	921.1	2.04	1.66	1.84	1.25
14	NUSA TENGGARA	Bali	5,561	0.29	381.2	444.2	499.6	521.9	540.6	1.71	1.18	1.43	0.79
15		Nusa Tenggara Barat	20,177	1.05	109.2	135.1	167.0	181.1	194.0	2.39	2.15	2.26	1.51
16		Nusa Tenggara Timur	47,876	2.49	47.9	57.2	68.3	74.8	80.7	1.98	1.79	1.88	1.69
17		Timor Timur	14,874	0.77	-	37.3	50.3	56.7	61.9	-	3.03	-	2.10
		Total	88,488	4.61	74.8	95.9	114.9	124.1	132.3	2.80	1.82	2.28	1.42
18	KALIMANTAN	Kalimantan Barat	146,760	7.65	13.8	16.9	22.0	24.9	27.6	2.33	2.65	2.50	2.30
19		Kalimantan Tengah	152,600	7.95	4.6	6.3	9.1	10.7	12.4	3.47	3.88	3.68	3.06
20		Kalimantan Selatan	37,660	1.96	45.1	54.8	69.0	77.0	85.0	2.19	2.32	2.26	2.12
21		Kalimantan Timur	202,440	10.55	3.6	6.0	9.3	11.5	14.1	5.79	4.42	5.07	4.29
		Total	539,460	28.11	9.6	12.5	16.9	19.5	22.2	2.99	3.07	3.04	2.80
22	SULAWESI	Sulawesi Utara	19,023	0.99	90.3	111.2	130.3	139.4	148.3	2.34	1.60	1.95	1.31
23		Sulawesi Tengah	69,726	3.63	13.1	18.5	24.5	27.9	31.6	3.90	2.86	3.36	2.56
24		Sulawesi Selatan	72,781	3.79	71.2	83.3	95.9	104.1	112.0	1.76	1.42	1.58	1.56
25		Sulawesi Tenggara	27,686	1.44	25.8	34.0	48.8	57.6	66.8	3.13	3.66	3.41	3.20
		Total	189,216	9.86	45.1	55.0	66.2	72.8	79.4	2.24	1.86	2.04	1.84
26	MALUKU and	Maluku	74,505	3.88	14.6	18.9	24.9	28.1	31.3	2.91	2.78	2.84	2.30
27	IRIANJAYA	Irian Jaya	421,981	21.99	2.2	2.8	3.9	4.6	5.4	2.71	3.46	3.10	3.31
		Total	496,486	25.87	4.1	5.2	7.1	8.2	9.3	2.82	3.09	2.96	2.79
INDONESIA			1,919,317	100.00	62.1	76.8	93.5	101.7	109.6	2.39	1.98	2.17	1.61

Source:Statistical Year Book of Indonesia,1992 ,Central Bureau of Statistics

Note: 1.Population density of DKI Jakarta and Jawa Barat of 1971 and 1980 is before expanded (DKI Jakarta;590 km^2 and Jawa Barat;46,300km^2)

2. Figures of 1995 and 2000 are forecasted by Central Bureau of Statistics.

Table 3.2.4 POPULATION DENSITY OF STUDY AREA

Unit : Person/ km^2

Province	Kabupaten/Kotamdya	Area (km^2)*	1982	1987	1991	Average Annual Growth Rate(%)		
						1982/87	1987/91	1982/91
Riau	Kab.Kampar	30,564	13.8	18.8	19.2	6.31	0.59	3.73
	Kab.Indragiri Hulu	12,539	20.7	26.4	30.3	4.99	3.54	4.35
	Kab.Indragiri Hilir	12,326	33.6	35.5	39.4	1.11	2.65	1.79
	Kodya.Pekanbaru	632	304.0	336.4	623.4	2.05	16.67	8.31
	Total	56,061	23.0	27.7	32.9	3.83	4.41	4.09
	Province	94,561	24.7	29.4	35.4	3.56	4.75	4.09
West Sumatra	Kab.Solok	7,084	51.5	58.5	60.9	2.57	1.03	1.88
	Kab.Sawahlunto/Sijunjur	6,092	39.7	45.5	51.2	2.74	2.97	2.84
	Kab.Tanah Datar	1,336	242.9	263.5	262.2	1.64	-0.12	0.85
	Kab.Agam	2,232	177.4	185.7	186.6	0.92	0.11	0.56
	Kab.Lima Puluh Kota	3,354	83.9	89.5	90.9	1.29	0.41	0.90
	Kab.Pasaman	7,835	47.4	54.4	60.0	2.80	2.50	2.66
	Kodya.Solok	25	1,316.0	1,488.7	1,707.0	2.50	3.48	2.93
	Kodya.Sawahlunto	321	44.2	47.8	49.0	1.59	0.63	1.16
	Kodya.Padang Panjang	27	1,286.3	1,311.1	1,492.4	0.38	3.29	1.66
	Kodya.Bukittinggi	25	2,891.5	3,061.0	3,484.8	1.15	3.29	2.10
	Kodya.Payakunbu	80	1,023.4	1,074.8	1,171.2	0.99	2.17	1.51
	Total	28,411	78.0	85.7	90.2	1.90	1.31	1.64
	Province	49,778	70.8	77.8	83.2	1.90	1.70	1.81
	Total of Study Area	84,472	41.5	47.2	52.2	2.63	2.55	2.59

Source : 1. Riau in Figures, 1992, Statistical Office of Riau Province

2. West Sumatra in Figures, 1992, Statistical Office of West Sumatra Province

Note : *Areas include the areas outside of the Study Area

Table 3.2.5 POPULATION PROJECTION

(1) Indragiri River Basin

Unit : person

Year	1994	1999	2004	2009	2014	2019
Kab.Indragiri Hulu	331,446	392,715	464,160	543,189	624,926	713,633
Kab.Indragiri Hilir	157,551	173,825	188,163	202,594	216,749	230,938
Sub-Total	488,997	566,541	652,323	745,784	841,675	944,571
Kab.Solok	223,326	244,402	263,381	281,785	297,922	314,984
Kab.Swl/Sijunjung	183,556	211,307	241,407	276,476	315,706	360,058
Kab. Tanah Datar	356,775	367,334	376,104	389,067	400,083	411,412
Kab. Agam	190,842	195,856	200,203	207,103	212,967	218,997
Kab.Limahpuluh Kota	243,749	255,043	265,015	281,163	295,213	309,965
Kodya.Solok	47,914	55,869	63,644	75,224	86,362	97,140
Kodya.Swl/Sijunjung	16,399	17,159	17,829	18,600	19,260	19,806
Kodya.Padang Panjang	42,068	45,453	48,534	52,802	56,603	60,260
Kodya.Payakunbuh	101,466	112,825	123,442	137,699	149,661	161,545
Kodya.Bukittingi	93,775	93,775	93,775	93,775	93,775	93,775
Sub-Total	1,499,870	1,599,023	1,693,334	1,813,694	1,927,553	2,047,942
Total	1,988,867	2,165,564	2,345,657	2,559,478	2,769,228	2,992,514
Kab.Indragiri Hilir(SWS) *1)	346,612	382,416	413,959	445,707	476,848	508,065
Grand Total	2,335,479	2,547,980	2,759,616	3,005,185	3,246,077	3,500,579

Note: SWS stands for In-between area

(2) Kampar River Basin

Unit : person

Year	1994	1999	2004	2009	2014	2019
Kab.Indragiri Hulu	65,417	77,510	91,610	107,208	123,341	140,849
Kab.Kampar	362,414	418,774	476,474	539,353	604,101	671,217
Sub-Total	427,831	496,284	568,085	646,561	727,441	812,065
Kab.Limahpuluh Kotak	68,750	71,935	74,748	79,302	83,265	87,426
Kab. Pasaman	25,543	28,247	30,755	34,115	37,164	39,913
Sub-Total	94,292	100,182	105,503	113,417	120,429	127,339
Total	522,124	596,466	673,587	759,978	847,870	939,404
Kodya Pekanbaru	496,826	649,332	858,754	1,135,719	1,466,835	1,872,095
Grand Total	1,018,950	1,245,799	1,532,341	1,895,697	2,314,705	2,811,499

Table 3.3.1 GDP AND GRDP IN INDONESIA

Unit:10⁹ Rp.

No.	Island	Province	1984	1985	1986	1987	1988	1989	1990	1991	Average Annual Growth Rate(%)		
											1984/87	1987/91	1984/91
1	SUMATRA	Daerah Istimewa Aceh	4,099	4,210	4,230	4,593	5,010	5,418	5,716	6,000	3.87	6.91	5.59
2		Sumatra Utara	3,735	3,886	4,132	4,492	4,999	5,479	5,935	6,387	6.34	9.20	7.97
3		Sumatra Barat	1,300	1,356	1,424	1,491	1,597	1,712	1,832	1,955	4.68	7.01	6.00
4		Riau	6,785	6,501	7,336	8,178	8,502	8,945	8,772	8,817	6.42	1.90	3.81
5		Jambi	519	556	586	629	697	774	845	883	6.62	8.85	7.89
6		Sumatra Selatan	3,857	4,061	4,249	4,248	4,509	4,864	4,879	5,131	3.27	4.83	4.16
7		Bengkulu	278	300	332	357	397	427	460	498	8.69	8.68	8.68
8		Lampung	1,183	1,270	1,396	1,529	1,645	1,780	1,920	2,011	8.93	7.09	7.87
		Total	21,756	22,140	23,685	25,517	27,356	29,399	30,359	31,682	5.46	5.56	5.52
9	JAWA	DKI Jakarta	9,205	9,679	10,164	10,758	11,469	12,586	13,665	14,709	5.33	8.13	6.93
10		Jawa Barat	11,940	12,671	13,505	14,008	15,111	16,409	17,959	19,231	5.47	8.24	7.05
11		Jawa Tengah	8,232	8,919	9,460	10,016	10,652	11,340	12,134	13,003	6.76	6.74	6.75
12		DI Yogyakarta	810	821	885	921	976	1,038	1,085	1,141	4.37	5.50	5.02
13		Jawa Timur	11,513	12,147	12,896	13,524	14,420	15,495	16,737	17,924	5.51	7.30	6.53
		Total	41,700	44,237	46,910	49,227	52,628	56,868	61,580	66,008	5.69	7.61	6.78
14	NUSA TENGGARA	Bali	989	1,073	1,154	1,252	1,355	1,473	1,604	1,737	8.18	8.53	8.38
15		Nusa Tenggara Barat	575	593	629	648	691	751	818	879	4.06	7.92	6.25
16		Nusa Tenggara Timur	536	556	585	608	632	668	708	748	4.29	5.32	4.88
17		Timor Timur	88	94	99	107	117	125	140	155	6.73	9.71	8.42
		Total	2,188	2,316	2,467	2,615	2,795	3,017	3,270	3,519	6.12	7.71	7.02
18	KALIMANTAN	Kalimantan Barat	899	962	1,104	1,206	1,404	1,470	1,575	1,679	10.29	8.62	9.33
19		Kalimantan Tengah	504	536	590	633	687	719	773	844	7.89	7.46	7.64
20		Kalimantan Selatan	961	988	1,017	1,105	1,198	1,283	1,374	1,464	4.76	7.29	6.20
21		Kalimantan Timur	5,237	5,276	5,318	5,315	5,309	5,445	5,812	6,187	0.49	3.87	2.41
		Total	7,601	7,762	8,029	8,259	8,598	8,917	9,534	10,174	2.81	5.35	4.25
22	SULAWESI	Sulawesi Utara	681	705	730	770	825	873	957	1,046	4.18	7.96	6.32
23		Sulawesi Tengah	374	393	419	449	486	535	581	635	6.28	9.05	7.86
24		Sulawesi Selatan	1,830	1,966	2,094	2,167	2,363	2,609	2,785	3,062	5.80	9.03	7.63
25		Sulawesi Tenggara	322	335	366	386	421	465	526	598	6.23	11.57	9.25
		Total	3,207	3,399	3,609	3,772	4,095	4,482	4,849	5,341	5.56	9.08	7.56
26	MALUKU and IRIANJAYA	Maluku	516	539	601	674	734	783	858	918	9.31	8.03	8.58
27		Irian Jaya	791	775	819	848	924	1,020	1,094	1,221	2.35	9.54	6.40
		Total	1,307	1,314	1,420	1,522	1,658	1,803	1,952	2,139	5.21	8.88	7.29
	TOTAL OF 27 PROVINCES		77,759	81,168	86,120	90,912	97,130	104,486	111,544	118,863	5.35	6.93	6.25
	TOTAL OF 27 PROVINCES *)		60,585	64,391	68,688	72,883	78,788	85,179	92,026	98,673	6.35	7.87	7.22
	INDONESIA		83,037	85,082	90,080	94,518	99,936	107,437	115,217	123,181	4.41	6.85	5.80
	INDONESIA *)		63,435	66,884	70,993	75,128	80,678	87,371	94,000	100,194	5.80	7.46	6.75

Source: Statistical Year Book of Indonesia, 1993 Central Bureau of Statistics

Note: 1.*) Excluding oil and oil products.

2. At 1983 constant price

3. The difference between the total of GRDP of 27 Provinces and the GDP of Indonesia is due to the difference in coverage and statistical discrepancies.

Table 3.3.2 TREND OF PRODUCT AGGREGATES AND PER CAPITA INCOME

Description	1987	1988	1989	1990	1991	1992	1993	Average Annual Growth Rate(%)		
								1987/90	1990/93	1987/93
1. Gross Domestic Product (10^9 Rp.)	94,518	99,936	107,437	115,217	123,181	131,102	139,571	6.82	6.60	6.71
2. Per Capita Gross Domestic Product (Rp.)	556,478	576,282	614,872	646,671	679,118	710,612	743,778	5.13	4.77	4.95
3. Gros National Product (10^9 Rp.)	90,270	96,455	103,710	110,986	118,746	126,146	134,008	7.13	6.48	6.81
4. Per Capita Gross National Product (Rp.)	531,470	556,205	593,546	622,924	654,664	683,751	714,131	5.44	4.66	5.05
5. National Income (10^9 Rp.)	80,145	85,101	90,326	97,231	104,460	110,643	117,191	6.65	6.42	6.54
6. Per Capita Income (Rp.)	471,859	490,738	516,947	545,720	575,907	599,718	624,513	4.97	4.60	4.78
7. Gross Domestic Product without Petrolium, Gas, and their products (10^9 Rp.)	75,128	80,669	87,371	94,001	100,194	110,643	122,181	7.76	9.13	8.44
8. Mid-year Population (10^3 person)	169,850	173,415	174,730	178,170	181,384	184,491	187,651	1.61	1.74	1.68

Source: 1. Statistical Year Book of Indonesia, 1990,1992, & 1993.Central Bureau of Statistics
2. Economic Indicator, February,1994, Central Bureau of Statistics

Note: 1. Figures are at 1983 constsnt market price.

Table 3.3.3 GROSS DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN

Unit:10^9 Rp.

Industrial Origin	1987		1988		1989		1990		1991		1992		1993		Average Annual Growth Rate(%)		
	GDP	Share(%)	GDP	Share(%)	GDP	Share(%)	GDP	Share(%)	GDP	Share(%)	GDP	Share(%)	GDP	Share(%)	1987/90	1990/93	1987/93
1 Agriculture, Livestock, Forestry & Fisheries	20,223.5	21.40	21,168.3	21.18	21,917.8	20.40	22,356.9	19.40	22,663.1	18.40	24,139.2	18.41	24,512.0	17.56	3.40	3.12	3.26
2 Mining & Quarrying	16,365.5	17.31	15,892.8	15.90	16,663.8	15.51	17,531.7	15.22	19,321.7	15.69	18,993.2	14.49	19,587.6	14.03	2.32	3.77	3.04
3 Manufacturing Industries	16,235.3	17.18	18,182.3	18.19	19,855.7	18.48	22,336.9	19.39	24,481.6	19.87	26,856.1	20.48	29,035.2	20.80	11.22	9.14	10.17
4 Electricity, Gas, & Water Supply	494.6	0.52	548.9	0.55	615.6	0.57	725.7	0.63	842.8	0.68	928.2	0.71	1,021.6	0.73	13.63	12.07	12.85
5 Construction	4,802.9	5.08	5,259.1	5.26	5,878.0	5.47	6,672.9	5.79	7,475.0	6.07	8,171.0	6.23	9,089.4	6.51	11.58	10.85	11.22
6 Trade, Hotel, & Restaurant	14,356.2	15.19	15656.8	15.67	17,338.1	16.14	18,568.6	16.12	19,606.1	15.92	21,103.1	16.10	23,113.6	16.56	8.95	7.57	8.26
7 Transportation & Communication	4,938.5	5.22	5,211.5	5.21	5,811.5	5.41	6,367.9	5.53	6,869.4	5.58	7,595.0	5.79	8,418.3	6.03	8.84	9.75	9.30
8 Banking, & Other Financial Intermediaries	3,659.3	3.87	3,752.2	3.75	4,290.7	3.99	4,893.8	4.25	5,535.1	4.49	6,249.2	4.77	7,008.5	5.02	10.17	12.72	11.44
9 Ownership of Dwellings	2,653.8	2.81	2,762.2	2.76	2,877.7	2.68	2,998.8	2.60	3,119.7	2.53	3,249.3	2.48	3,395.8	2.43	4.16	4.23	4.19
10 Public Administration & Defense	7,366.1	7.79	7,932.1	7.94	8,396.9	7.82	8,783.3	7.62	9,052.1	7.35	9,320.0	7.11	9,508.8	6.81	6.04	2.68	4.35
11 Services	3,422.1	3.62	3,569.8	3.57	3,790.8	3.53	3,980.8	3.46	4,214.5	3.42	4,497.3	3.43	4,880.0	3.50	5.17	7.02	6.09
12 Gross Domestic Product	94,517.8	100.00	99,936.0	100.00	107,436.6	100.00	115,217.3	100.00	123,181.1	100.00	131,101.6	100.00	139,570.8	100.00	6.82	6.60	6.71

Source: 1. Statistical Year Book of Indonesia, 1990,1992, and 1993. Central Bureau of Statistics
2. Economic Indicator, February,1994, Central Bureau of Statistics

Note: 1. Figures are at 1983 consisnt market price.

Table 4.2.1. PROBABLE DAILY RAINFALL AT EACH STATION

Annual Maximum Daily Rainfall (Recorded)

unit : mm

Year	Station Number																					Year
	19001	19004	19010	19014	19015	19016	19114	19116	19017	20001	20002	20004	20007	20009	20010	20011	20103	20106	20107	20108	20111	20200	05109	
1961				109																				1961
1962				169																				1962
1963				112																				1963
1964				125																				1964
1965				83																				1965
1966				114																				1966
1967				75																				1967
1968				143																				1968
1969																								1969
1970			149							115														1970
1971			112							85								75						1971
1972			104							103								88						1972
1973			187	84						125								80						1973
1974				130						160								76						1974
1975			131	84						75								76						1975
1976			138	84						117														1976
1977			105	85						107														1977
1978			132	97						76	194							97						1978
1979		69	140	121						56	132	128						110		76				1979
1980		67	164	82					110	98	140	80	64				109	110	100	90				1980
1981	66	82	121	128			77	74	103	100	114	68	100	86			78	100	80	104		116		1981
1982	55	82	135	130	61		90	76	55	95	172	61	115	81			125	142	85	110		165		1982
1983	80	113	242	81	89	81	104	52	53	89	128	86	101	86	90	75	130	97	102	86		112	117	1983
1984	58	99	127	64	74	107	80	70	39	211	96	85	124	110	85	94	90	107	143	90	115	124	101	1984
1985	77	81	134	53	91	95	84	60	45	170	105	93	108	67	103	95	183	111	60	87	105	82	149	1985
1986	97	79	136	114	64	65	75	78	69	81	100	100	65	108	102	148	97	137	65	105	109	120	88	1986
1987	95	84	182		100	101	64	85		102	73	88	84	99	100	93	220	79	54	121	56	125	113	1987
1988	74	115	145		61		41	85		90	79	119	130	80	100	134	152	88		73	92	93	147	1988
1989	57	84	165	95	113	70	93	106	49	84	73		104	54	29	125	94	113	87	105	114	87	108	1989
1990	60	65	127	58	63	74	67	110	27	101	78		87	69	44	93		100	130	125	139	129	88	1990
1991	93	94	253	94	79	145	198	174	81	129	84		84	91	64	130	60	104	87	100	60	160	96	1991
1992	149	76	130	117	83	74	196	51	64	120	77		86	65	60	73	59	126	82	80	59	88	100	1992
1993		77				105	200																101	1993
Max.	149	115	253	169	113	145	200	174	110	211	194	128	130	110	103	148	220	142	143	125	139	165	149	Max.
Min.	55	65	104	53	61	65	41	51	27	56	73	61	64	54	29	73	59	75	54	73	56	82	88	Min.

Probable Daily Rainfall

unit : mm

Return Period (Year)	Station Number																					Return Period (Year)
	19001	19004	19010	19014	19015	19016	19114	19116	19017	20001	20002	20004	20007	20009	20010	20011	20103	20106	20107	20108	20111	20200	05109	
2	76	82	142	97	77	88	98	80	64	103	104	88	93	81	80	103	110	98	86	94	90	113	107	2
3	91	90	162	111	87	102	127	99	77	120	124	100	104	90	93	117	136	108	100	103	108	128	119	3
5	107	99	183	126	98	117	160	119	92	139	146	113	117	101	107	134	166	119	116	112	127	144	131	5
8	121	107	202	139	107	130	188	137	106	155	164	124	127	110	119	148	192	128	130	120	143	158	143	8
10	127	110	210	145	111	136	202	145	112	163	173	129	132	114	124	154	203	133	137	124	151	165	148	10
20	147	121	236	163	124	155	241	169	130	186	199	145	147	127	141	174	239	146	156	136	174	184	163	20
25	153	124	244	168	128	161	254	177	136	193	208	150	151	131	147	180	250	150	162	139	181	191	168	25
30	158	127	251	173	132	165	264	183	141	199	215	154	155	134	151	186	260	154	167	142	187	196	172	30
50	172	134	269	186	141	179	293	201	154	215	233	165	166	143	163	200	285	163	181	150	203	210	183	50
70	181	139	282	195	147	187	311	212	162	226	246	173	173	149	171	209	302	169	190	156	214	219	191	70
80	184	141	286	198	149	191	319	217	166	230	251	175	176	151	174	213	309	172	194	158	218	223	194	80
100	191	145	294	204	153	196	331	225	172	238	259	180	180	155	180	219	320	176	200	162	226	229	199	100
150	202	151	309	214	161	207	354	239	182	251	274	189	189	163	189	230	340	183	211	168	239	240	207	150
200	209	155	319	221	166	214	369	248	189	260	284	196	194	168	196	238	355	189	218	173	248	248	214	200

Table 4.2.2.(1/2) PROBABLE RAINFALL BY BASIN

Kotapanjang Dam Basin (KB-5)

(A) Annual Maximum Rainfall — Unit: mm

Year	1-day	2-day	3-day	5-day	7-day	10-day
1981	65.3	90.9	114.0	159.9	173.4	229.1
1982	63.2	97.1	105.8	135.3	201.3	247.0
1983	48.1	79.1	92.4	133.1	189.0	209.8
1984	57.4	100.3	131.8	164.9	191.8	225.7
1985	48.2	71.9	102.0	160.5	212.6	267.2
1986	60.7	80.7	114.5	180.2	227.8	267.6
1987	70.3	113.0	134.4	182.8	254.7	303.3
1988	52.8	87.6	110.8	168.3	217.4	285.9
1989	38.0	72.6	84.0	113.1	142.1	165.1
1990	49.8	61.9	87.9	142.4	182.4	199.9
1991	68.0	108.6	145.1	177.9	221.6	264.1
1992	38.6	65.9	84.1	106.8	136.0	164.9

(B) Probable Rainfall and Amplification Rate for Model Hyetograph — Unit: mm & Ratio

Return Period (Year)	1-DAY (1)	(1)/(a)	2-DAY (2)	(2)/(a)	3-DAY (3)	(3)/(a)	5-DAY (4)	(4)/(a)	7-DAY (5)	(5)/(a)	10-DAY (6)	(6)/(a)
2	53.5	0.79	83.5	0.77	106.1	0.73	148.5	0.83	191.0	0.86	229.6	0.87
3	59.4	0.87	92.5	0.85	117.2	0.81	162.5	0.91	209.9	0.95	254.0	0.96
5	66.0	0.97	102.6	0.94	129.5	0.89	178.1	1.00	230.9	1.04	281.3	1.07
8	71.7	1.05	111.3	1.02	140.1	0.97	191.6	1.08	248.9	1.12	304.7	1.15
10	74.3	1.09	115.3	1.06	145.0	1.00	197.8	1.11	257.2	1.16	315.5	1.19
20	82.3	1.21	127.5	1.17	159.9	1.10	216.6	1.22	282.6	1.28	348.3	1.32
25	84.8	1.25	131.3	1.21	164.7	1.14	222.5	1.25	290.6	1.31	358.7	1.36
30	86.9	1.28	134.4	1.24	168.5	1.16	227.4	1.28	297.1	1.34	367.2	1.39
50	92.6	1.36	143.2	1.32	179.2	1.24	240.9	1.35	315.3	1.42	390.8	1.48
70	96.3	1.42	148.9	1.37	186.2	1.28	249.8	1.40	327.2	1.48	406.3	1.54
80	97.8	1.44	151.2	1.39	189.0	1.30	253.3	1.42	332.0	1.50	412.4	1.56
100	100.3	1.48	155.0	1.43	193.7	1.33	259.2	1.46	339.8	1.53	422.7	1.60
150	104.8	1.54	161.9	1.49	202.1	1.39	269.8	1.52	354.2	1.60	441.2	1.67
200	108.0	1.59	166.7	1.53	208.0	1.43	277.4	1.56	364.3	1.64	454.4	1.72
1000	125.8	1.85	193.9	1.79	241.4	1.66	319.5	1.80	420.9	1.90	527.9	2.00
Actual (a)	68.0		108.6		145.1		177.9		221.6		264.1	
Date	Dec.14		Dec.14-15		Dec.13-15		Dec.13-17		Dec.11-17		Dec.7-16	

Kampar Kiri River Basin (Lipat Kain)

(A) Annual Maximum Rainfall — Unit: mm

Year	1-day	2-day	3-day	5-day	7-day	10-day
1981	82.1	114.3	115.9	160.3	162.0	199.9
1982	77.7	121.0	155.0	187.9	233.0	282.6
1983	68.4	88.8	119.1	165.4	218.3	239.7
1984	58.3	113.4	126.5	163.3	189.6	230.9
1985	61.8	80.9	101.1	127.9	165.5	225.1
1986	71.4	110.3	130.8	190.3	226.6	279.9
1987	59.8	74.7	91.9	117.5	135.8	164.9
1988	64.2	77.6	96.0	140.2	173.6	204.7
1989	54.2	91.0	107.2	156.5	204.4	263.8
1990	71.7	88.5	112.6	166.7	236.1	299.1
1991	69.8	80.7	97.7	107.2	140.0	168.4
1992	46.4	67.4	89.5	111.6	132.2	185.8

(B) Probable Rainfall and Amplification Rate for Model Hetograph — Unit: mm & Ratio

Return Period (Year)	1-DAY (1)	(1)/(a)	2-DAY (2)	(2)/(a)	3-DAY (3)	(3)/(a)	5-DAY (4)	(4)/(a)	7-DAY (5)	(5)/(a)	10-DAY (6)	(6)/(a)
2	64.0	0.92	89.9	1.11	109.3	1.12	145.6	1.36	179.4	1.28	222.4	1.32
3	69.5	1.00	99.6	1.23	119.7	1.23	161.1	1.50	200.4	1.43	247.2	1.47
5	75.6	1.08	110.5	1.37	131.2	1.34	178.3	1.66	223.9	1.60	274.9	1.63
8	80.9	1.16	119.8	1.48	141.2	1.45	193.1	1.80	244.1	1.74	298.7	1.77
10	83.3	1.19	124.1	1.54	145.8	1.49	199.9	1.86	253.4	1.81	309.6	1.84
20	90.7	1.30	137.2	1.70	159.7	1.63	220.7	2.06	281.7	2.01	343.0	2.04
25	93.0	1.33	141.4	1.75	164.2	1.68	227.3	2.12	290.7	2.08	353.5	2.10
30	94.9	1.36	144.8	1.79	167.7	1.72	232.7	2.17	298.0	2.13	362.1	2.15
50	100.2	1.44	154.2	1.91	177.8	1.82	247.6	2.31	318.3	2.27	386.1	2.29
70	103.6	1.48	160.3	1.99	184.3	1.89	257.4	2.40	331.6	2.37	401.8	2.39
80	105.0	1.50	162.8	2.02	187.0	1.91	261.2	2.44	336.9	2.41	408.0	2.42
100	107.3	1.54	166.9	2.07	191.3	1.96	267.7	2.50	345.7	2.47	418.4	2.48
150	111.5	1.60	174.3	2.16	199.2	2.04	279.5	2.61	361.8	2.58	437.3	2.60
200	114.4	1.64	179.5	2.22	204.8	2.10	287.8	2.68	373.1	2.67	450.7	2.68
1000	130.9	1.88	208.8	2.59	236.0	2.42	334.3	3.12	436.4	3.12	525.3	3.12
Actual(A)	69.8		80.7		97.7		107.2		140.0		168.4	
Date 1991	Dec.14		Dec.14-15		Dec.13-15		Dec.13-17		Dec.11-17		Dec.7-16	

Table 4.2.2.(2/2) PROBABLE RAINFALL BY BASIN

Kuantan Dam Basin

(A) Annual Maximum Rainfall — Unit: mm

Year	1-day	2-day	3-day	5-day	7-day	10-day
1981	44.3	58.2	71.6	93.9	106.3	146.6
1982	51.3	67.6	78.6	98.4	126.3	158.7
1983	26.9	46.0	57.3	79.9	94.8	121.9
1984	40.4	59.4	77.5	104.5	125.1	151.1
1985	35.9	52.5	67.6	91.9	154.9	247.8
1986	53.8	90.7	112.6	174.0	223.4	249.6
1987	57.4	78.2	101.8	127.4	164.3	184.8
1988	35.8	58.5	86.6	115.9	149.0	185.4
1989	35.5	58.6	87.7	145.1	186.8	232.3
1990	28.9	49.8	65.6	89.6	121.3	160.4
1991	70.8	84.1	115.2	182.8	207.8	258.4
1992	53.4	75.4	94.7	116.6	170.1	209.9

(B) Probable Rainfall and Amplification Rate for Model Hyetograph — Unit: mm & Ratio

Return Period (Year)	1-DAY (1)	(1)/(a)	2-DAY (2)	(2)/(a)	3-DAY (3)	(3)/(a)	5-DAY (4)	(4)/(a)	7-DAY (5)	(5)/(a)	10-DAY (6)	(6)/(a)
2	42.7	0.79	62.9	0.69	82.1	0.73	113.7	0.65	185.8	0.83	242.3	0.97
3	49.8	0.93	70.7	0.78	92.3	0.82	131.9	0.76	211.1	0.94	272.8	1.09
5	57.7	1.07	79.3	0.87	103.5	0.92	152.2	0.87	239.2	1.07	306.7	1.23
8	64.6	1.20	86.7	0.96	113.2	1.01	169.6	0.97	263.4	1.18	335.8	1.35
10	67.7	1.26	90.2	0.99	117.7	1.05	177.6	1.02	274.6	1.23	349.3	1.40
20	77.2	1.43	100.6	1.11	131.3	1.17	202.0	1.16	308.5	1.38	390.1	1.56
25	80.3	1.49	103.9	1.15	135.6	1.20	209.8	1.21	319.3	1.43	403.1	1.61
30	82.7	1.54	106.6	1.18	139.1	1.24	216.1	1.24	328.0	1.47	413.6	1.66
50	89.6	1.67	114.1	1.26	148.8	1.32	233.7	1.34	352.5	1.58	443.0	1.77
70	94.1	1.75	119.0	1.31	155.2	1.38	245.2	1.41	368.4	1.65	462.3	1.85
80	95.9	1.78	120.9	1.33	157.8	1.40	249.8	1.44	374.8	1.68	469.9	1.88
100	98.9	1.84	124.2	1.37	162.0	1.44	257.4	1.48	385.4	1.73	482.7	1.93
150	104.3	1.94	130.0	1.43	169.7	1.51	271.2	1.56	404.6	1.81	505.8	2.03
200	108.1	2.01	134.2	1.48	175.1	1.56	281.0	1.61	418.2	1.87	522.2	2.09
1000	129.5	2.41	157.5	1.74	205.5	1.83	335.7	1.93	494.1	2.21	613.6	2.46
Actual(A)	53.8		90.7		112.6		174.0		223.4		249.6	
Date 1991	Jan.5		Jan.4-5		Jan.4-6		Jan.4-8		Jan.3-9		Jan.1-10	

Indragiri River Basin (Japura)

(A) Annual Maximum Rainfall — Unit: mm

Year	1-day	2-day	3-day	5-day	7-day	10-day
1981	43.2	50.9	58.6	85.3	115.2	140.4
1982	50.4	77.2	92.1	128.2	162.2	219.0
1983	38.4	56.6	87.4	110.9	126.6	166.2
1984	38.5	54.2	67.3	88.1	122.7	175.4
1985	32.4	41.6	53.8	81.8	128.9	215.6
1986	38.5	67.6	94.0	151.6	192.8	222.7
1987	36.0	55.6	65.4	90.4	107.9	142.4
1988	35.7	56.7	71.2	111.1	139.2	165.5
1989	39.2	62.4	81.8	132.6	171.5	209.9
1990	33.4	50.6	56.1	88.1	106.8	151.6
1991	43.6	68.9	90.5	139.7	185.0	221.6
1992	40.0	55.0	82.8	103.0	126.0	178.6

(B) Probable Rainfall and Amplification Rate for Model Hetograph — Unit: mm & Ratio

Return Period (Year)	1-DAY (1)	(1)/(a)	2-DAY (2)	(2)/(a)	3-DAY (3)	(3)/(a)	5-DAY (4)	(4)/(a)	7-DAY (5)	(5)/(a)	10-DAY (6)	(6)/(a)
2	38.4	1.00	56.8	0.84	73.0	0.78	105.9	0.70	136.2	0.71	179.6	0.81
3	41.1	1.07	62.0	0.92	81.1	0.86	118.9	0.78	152.5	0.79	197.1	0.89
5	44.1	1.15	67.8	1.00	90.0	0.96	133.4	0.88	170.7	0.89	216.5	0.97
8	46.7	1.21	72.8	1.08	97.7	1.04	145.8	0.96	186.3	0.97	233.2	1.05
10	47.8	1.24	75.1	1.11	101.3	1.08	151.6	1.00	193.5	1.00	240.9	1.08
20	51.4	1.34	82.1	1.21	112.1	1.19	169.0	1.11	215.4	1.12	264.3	1.19
25	52.6	1.37	84.3	1.25	115.5	1.23	174.6	1.15	222.4	1.15	271.7	1.22
30	53.5	1.39	86.1	1.27	118.3	1.26	179.1	1.18	228.0	1.18	277.8	1.25
50	56.1	1.46	91.2	1.35	126.1	1.34	191.6	1.26	243.8	1.26	294.6	1.32
70	57.8	1.50	94.5	1.40	131.2	1.40	199.8	1.32	254.1	1.32	305.6	1.37
80	58.4	1.52	95.8	1.42	133.2	1.42	203.1	1.34	258.2	1.34	310.0	1.39
100	59.6	1.55	97.9	1.45	136.6	1.45	208.5	1.38	265.0	1.37	317.3	1.42
150	61.6	1.60	101.9	1.51	142.7	1.52	218.4	1.44	277.4	1.44	330.6	1.48
200	63.0	1.64	104.7	1.55	147.0	1.56	225.4	1.49	286.2	1.48	339.9	1.53
1000	71.1	1.85	120.4	1.78	171.2	1.82	264.4	1.74	335.2	1.74	392.3	1.76
Actual(A)	38.5		67.6		94.0		151.6		192.8		222.7	
Date 1991	Jan.5		Jan.4-5		Jan.4-6		Jan.4-8		Jan.3-9		Jan.1-10	

Table 5.2.1 POTENTIAL RESERVOIR CAPACITIES OF CANDIDATE DAMSITES

Dam	Catchment Area (km^2)	Annual Runoff (10^6m^3)	Possible Max. WL (EL.m)	Gross Storage Capacity (***) (10^6m^3)	Sediment Capacity (*) (10^6m^3)	Effective Storage Capacity (10^6m^3)
1. Kapoernan	650	1,164	125.00	139	33	107
2. Mahat	993	1,747	100.00	295	50	245
3. Kototengah	660	1,183	240.00	15	33	0
4. Kampar Kiri No.1	1,187	1,908	130.00	2,348	59	2,289
5. Kampar Kiri No.2	552	858	150.00	3,189	28	3,161
6. Upper Sinamar	1,580	2,031	485.00	197	93	104
7. Lower Sinamar	1,796	2,308	485.00	1,350	106	1,244
8. Sukam	360	583	240.00	693	19	674
9. Upper Kuantan (**)	5,816	8,493	150.00	272	305	0
10. Kuantan (**)	6,377	9,183	125.00	2,100	335	1,765
Total	19,971	29,458		10,598	1,060	9,589

Note : * Sediment volume is calculated assuming the following specific sediment volume and sedimentation period of 100 years:

- Kampar river system : $500m^3/km^2/yr$,
- Kuantan river system (Sinamar river) : $585m^3/km^2/yr$ and
- Kuantan river system (Kuantan and Sukam rivers) : $525m^3/km^2/yr$

** excluding Singkarak lake basin (1,076 km^2)

*** Storage capacities show topographically maximum volume.

Scales of topographic maps used for the study are as follows:

1/10,000 for Kampar Kiri No.1, Kampar Kiri No.2, Upper Sinamar, Sukam and Kuantan dams

1/50,000 for other dams

Table 5.4.1 SEDIMENT BALANCE

Sub-Basin for Sediment Analysis	Catchment Area	Wash Load					Bed Load			Total Sediment Discharge	
		Inflow	Yield		Deposit in Basin	Outflow	Inflow	Deposit	Outflow		
			Sheet Erosion	Bank Erosion							
	km^2	$1,000m^3/yr$					$1,000m^3/yr$			$1,000m^3/yr$	$m^3/km^2/yr$
K-1	2,537	0	4,882	98	3,906	1,074	0	-192	192	1,266	499
K-2	2,694	1,074	8,861	177	7,089	3,024	192	125	67	3,091	1,147
K-3	7,053	0	15,139	303	12,111	3,331	0	-3,428	3,428	6,758	958
K-4	12,264	6,354	20,131	403	16,104	10,783	3,495	-2,679	6,174	16,957	1,383
Total	24,548										
I-1	1,278	0	2,746	55	2,197	604	0	-142	142	746	584
I-2	6,175	604	12,526	251	10,459	2,922	142	-186	327	3,249	526
I-3	3,432	2,922	13,019	260	10,415	5,786	327	-2,368	2,695	8,481	2,471
I-4	5,383	5,786	12,548	251	10,038	8,546	2,695	-2,421	5,116	13,662	2,538
Total	16,268										

Delivery Rate of Sheet Erosion except for I-2 Basin: 0.20 (Deposit Rate is 0.80)

Delivery Rate of Sheet Erosion for I-2 Basin (considering Singkarak Lake): 0.165 (Deposit Rate is 0.835)

Table 5.5.1 DEFINITION OF IRRIGATION SYSTEM

Items	Classification of Irrigation System		
	(1) Simple Irrigation System	(2) Semi-technical Irrigation System	(3) Technical Irrigation System
1). Headworks	Temporary structure	Permanent or semi-permanent structure	Permanent structure
2). Capacity of structures to measure and regulate discharge	Poor	Fair	Good
3). Canal system	Irrigation and drainage are combined	Irrigation and drainage are not completely separated	Irrigation and drainage are separated
4). Tertiary system	No tertiary system developed yet	Not developed or with low tertiary structure density	Fully developed
5). Overall efficiency	Less than 40 %	40-50 %	50-60 %
6). Size	Not more than 500 ha	Up to 2,000 ha	No limit

Source : Irrigation Design Standard published by Directorate General of Water Resources Development, Ministry of Public Works

Table 5.5.2 SUMMARY OF BASIC FEATURES AND PRINCIPAL COMPONENTS OF NEW IRRIGATION DEVELOPMENT PROJECTS

Future Irrigation Development Projects	(A) Rantauberangin Irrigation Development Project	(B) Lubukjambi Irrigation Development Project
(1) River Basin	Kampar Kanan River Basin	Indragiri River Basin
(2) Irrigation Method to be applied	Gravity Irrigation	Gravity Irrigation
(3) Irrigation System to be applied	Technical Irrigation System	Technical Irrigation System
(4) Intake Facilities -Weir Crest Elevation	Kuok Intake Weir EL. 40m	Lubukjambi Intake Weir EL. 60m
(5) Primary Canal Length		
- Left Bank Primary Canal	84 km	119 km
- Right Bank Primary Canal	40 km	123 km
Subtotal	124 km	242 km
(6) Project Area estimated by PU, Riau Province	40,000 ha	50,000 ha
(7) Irrigable Area		
(7-1) Existing Irrigation Schemes to be incorporated		
(a) Left Bank Area	(10 schemes)	(12 schemes)
1) Existing Irrigated Area	1,837 ha	1,670 ha
2) Convertible Area to Irrigation		
2-1. Rainfed	553 ha	376 ha
2-2. Undeveloped yet	2,781 ha	2,096 ha
Total Area	5,171 ha	4,142 ha
(b) Right Bank Area	(12 schemes)	(8 schemes)
1) Existing Irrigated Area	1,822 ha	1,515 ha
2) Convertible Area to Irrigation		
2-1. Rainfed	375 ha	65 ha
2-2. Undeveloped yet	2,141 ha	650 ha
Total Area	4,338 ha	2,230 ha
Subtotal	9,509 ha (22 schemes)	6,372 ha (20 schemes)
(7-2) Existing Drainage and Swamp Development Schemes to be incorporated		
- Left Bank Area	2,975 ha (4 schemes)	-
- Right Bank Area	-	-
Subtotal	2,975 ha (4 schemes)	-
(7-3) Net Additional Area		
- Left Bank Area	10,517 ha	12,875 ha
- Right Bank Area	277 ha	10,902 ha
Subtotal	10,794 ha	23,777 ha
(7-4) Total Net Irrigable Area		
- Left Bank Area	15,688 ha	17,017 ha
- Right Bank Area	4,615 ha	13,132 ha
Subtotal	20,303 ha	30,149 ha

Note (7-3) Net Additional Area : the net area including the existing drainage and swamp development schemes, if any, and excluding the existing irrigation schemes.

(7-4) Total Net Irrigable Area : the total net irrigable area includes all the existing schemes.

Table 5.5.3(1/2) SUMMARY OF CASE STUDY ON UNIT WATER REQUIREMENT

A. Rantauberangin Irrigation Development Project (Base Year 1988)

Unit : l/sec/ha

Case	Starting Date of Land Preparation		Jan.		Feb.		Mar.		Apr.		May		June	
			1.	2.	1.	2.	1.	2.	1.	2.	1.	2.	1.	2.
	1st Crop	2nd Crop	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End
(1) Case 1	Feb.16	Sep. 1	0.10	0.00	0.00	1.43	0.69	0.65	0.29	1.38	0.71	0.46	0.28	0.11
(2) Case 2	Jan. 1	July 16	1.01	0.00	0.12	1.10	0.50	0.85	0.23	0.93	0.06	0.00	0.00	0.00
(3) Case 3	Jan.16	Aug. 1	0.00	0.00	0.25	1.06	0.51	0.66	0.47	1.30	0.36	0.07	0.00	0.00
(4) Case 4	Feb. 1	Aug.16	0.00	0.00	0.38	1.25	0.49	0.67	0.28	1.57	0.45	0.37	0.03	0.00
(5) Case 5	Mar. 1	Sep.16	0.43	0.00	0.00	0.00	0.88	0.84	0.26	1.39	0.52	0.73	0.33	0.46
(6) Case 6	Mar.16	Oct. 1	0.55	0.23	0.00	0.00	0.00	1.03	0.45	1.36	0.52	0.53	0.60	0.59
(7) Case 7	Apr. 1	Oct.16	0.81	0.23	0.23	0.25	0.00	0.00	0.63	1.54	0.50	0.54	0.40	0.86
(8) Case 8	Apr.16	Nov. 1	0.62	0.46	0.23	0.74	0.06	0.00	0.00	1.73	0.69	0.52	0.41	0.66

Unit : l/sec/ha

Case	Starting Date of Land Preparation		July		Aug.		Sep.		Oct.		Nov.		Dec.	
			1.	2.	1.	2.	1.	2.	1.	2.	1.	2.	1.	2.
	1st Crop	2nd Crop	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End
(1) Case 1	Feb.16	Sep. 1	0.00	0.00	0.00	0.00	1.73	0.58	1.36	1.02	0.31	1.14	0.23	0.23
(2) Case 2	Jan. 1	July 16	0.00	1.54	1.28	0.00	1.36	0.40	1.57	0.95	0.23	0.21	0.00	0.00
(3) Case 3	Jan.16	Aug. 1	0.00	0.00	1.47	0.00	1.33	0.40	1.38	1.21	0.24	0.65	0.00	0.00
(4) Case 4	Feb. 1	Aug.16	0.00	0.00	0.00	0.00	1.73	0.58	1.36	1.02	0.31	1.14	0.23	0.23
(5) Case 5	Mar. 1	Sep.16	0.27	0.00	0.00	0.00	0.00	0.78	1.56	1.00	0.32	0.95	0.46	0.23
(6) Case 6	Mar.16	Oct. 1	0.79	0.28	0.00	0.00	0.00	0.00	1.75	1.20	0.30	0.96	0.23	0.46
(7) Case 7	Apr. 1	Oct.16	1.08	0.80	0.25	0.00	0.00	0.00	0.00	1.39	0.50	0.94	0.23	0.23
(8) Case 8	Apr.16	Nov. 1	1.34	1.10	0.75	0.00	0.00	0.00	0.00	0.00	0.69	1.13	0.00	0.23

Table 5.5.3(2/2) SUMMARY OF CASE STUDY ON UNIT WATER REQUIREMENT

B. Lubukjambi Irrigation Development Project (Base Year 1986)

Unit : l/sec/ha

Case	Starting Date of Land Preparation		Jan.		Feb.		Mar.		Apr.		May		June	
			1.	2.	1.	2.	1.	2.	1.	2.	1.	2.	1.	2.
	1st Crop	2nd Crop	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End
(1) Case 1	Feb.16	Sep. 1	0.00	0.00	0.00	1.96	0.01	0.54	0.61	0.23	0.46	1.43	0.69	0.33
(2) Case 2	Jan. 1	July 16	0.19	0.69	0.99	1.63	0.23	0.75	0.52	0.23	0.00	0.00	0.00	0.00
(3) Case 3	Jan.16	Aug. 1	0.00	0.88	1.18	1.59	0.23	0.56	0.79	0.23	0.23	0.39	0.00	0.00
(4) Case 4	Feb. 1	Aug.16	0.00	0.00	1.37	1.78	0.01	0.57	0.60	0.46	0.23	1.02	0.23	0.00
(5) Case 5	Mar. 1	Sep.16	0.23	0.06	0.00	0.00	0.02	0.72	0.58	0.23	0.23	1.69	0.94	0.90
(6) Case 6	Mar.16	Oct. 1	0.23	0.35	0.22	0.00	0.00	0.90	0.76	0.00	0.23	1.50	1.20	1.25
(7) Case 7	Apr. 1	Oct.16	0.46	0.44	0.69	0.42	0.00	0.00	0.95	0.00	0.10	1.50	1.00	1.50

Unit : l/sec/ha

Case	Starting Date of Land Preparation		July		Aug.		Sep.		Oct.		Nov.		Dec.	
			1.	2.	1.	2.	1.	2.	1.	2.	1.	2.	1.	2.
	1st Crop	2nd Crop	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End	1-15	16-End
(1) Case 1	Feb.16	Sep. 1	0.00	0.00	0.00	0.00	1.37	0.04	0.11	0.23	0.83	0.46	0.23	0.41
(2) Case 2	Jan. 1	July 16	0.00	1.37	1.88	1.56	1.00	0.23	0.46	0.23	0.56	0.00	0.00	0.00
(3) Case 3	Jan.16	Aug. 1	0.00	0.00	2.06	1.75	0.98	0.23	0.23	0.46	0.75	0.23	0.00	0.00
(4) Case 4	Feb. 1	Aug.16	0.00	0.00	0.00	1.94	1.18	0.02	0.23	0.23	1.02	0.23	0.23	0.09
(5) Case 5	Mar. 1	Sep.16	0.18	0.00	0.00	0.00	0.00	0.06	0.23	0.01	0.84	0.23	0.46	0.52
(6) Case 6	Mar.16	Oct. 1	0.60	0.22	0.00	0.00	0.00	0.00	0.34	0.01	0.81	0.23	0.23	0.78
(7) Case 7	Apr. 1	Oct.16	0.80	0.67	0.45	0.00	0.00	0.00	0.00	0.02	0.99	0.00	0.23	0.59

Table 5.5.4 OUTLINE OF TOTAL WATER REQUIREMENT IN BASE YEAR
(OVERALL PLAN)

1. Rantauberangin Irrigation Development Project

Study Cases	Starting Date of Land Preparation		Left Bank Area (m^3/sec.)		Right Bank Area (m^3/sec.)	
	1st Crop	2nd Crop	1st Crop	2nd Crop	1st Crop	2nd Crop
Case-1	Feb.16	Sep. 1	18.16	24.15	3.75	5.73
Case-2	Jan. 1	July 16	12.48	22.18	1.69	5.62
Case-3	Jan.16	Aug. 1	16.92	21.07	3.38	5.29
Case-4	Feb. 1	Aug.16	21.17	24.15	4.63	5.73
Case-5	Mar. 1	Sep.16	18.32	21.83	3.81	5.21
Case-6	Mar.16	Oct. 1	17.83	24.82	3.64	6.09
Case-7	Apr. 1	Oct.16	20.69	19.56	4.49	4.80
Case-8	Apr.16	Nov. 1	23.64	11.88	5.37	0.72

Note : Optimum Total Water Requirements

2. Lubukjambi Irrigation Development Project

Study Cases	Starting Date of Land Preparation		Left Bank Area (m^3/sec.)		Right Bank Area (m^3/sec.)	
	1st Crop	2nd Crop	1st Crop	2nd Crop	1st Crop	2nd Crop
Case-1	Feb.16	Sep. 1	29.21	18.88	24.36	16.53
Case-2	Jan. 1	July 16	23.62	28.82	20.05	23.63
Case-3	Jan.16	Aug. 1	22.93	31.85	19.51	26.00
Case-4	Feb. 1	Aug.16	26.15	30.16	22.01	24.54
Case-5	Mar. 1	Sep.16	22.39	10.82	20.10	9.16
Case-6	Mar.16	Oct. 1	19.31	10.43	17.62	8.83
Case-7	Apr. 1	Oct.16	21.07	12.75	18.24	10.79

Note : Optimum Total Water Requirements

Table 5.5.5 IRRIGATION AREA AND PRIMARY CANAL LENGTH FOR PRIORITY PROJECTS

	Project Name	(A) Rantauberangin Project	(B) Lubukjambi Project
(1)	Irrigation Area		
(1-1)	Existing Irrigation Schemes to be incorporated :		
	(a) Left Bank Area	5,171 ha (10 schemes)	4,142 ha (12 schemes)
	1) Existing Irrigated Area	1,837 ha	1,670 ha
	2) Convertible Area to Irrigation Area		
	2-1. Rainfed	553 ha	376 ha
	2-2. Undeveloped yet	2,781 ha	2,096 ha
	(b) Right Bank Area	4,338 ha (12 schemes)	- ha
	1) Existing Irrigated Area	1,822 ha	
	2) Convertible Area to Irrigation		
	2-1. Rainfed	375 ha	
	2-2. Undeveloped yet	2,141 ha	
	Subtotal (1-1)	9,509 ha (22 schemes)	4,142 ha (12 schemes)
(1-2)	Existing Drainage and Swamp Development Schemes to be incorporated :		
	(a) Left Bank Area	- ha	- ha
	(b) Right Bank Area	- ha	- ha
	Subtotal (1-2)	- ha	- ha
(1-3)	Net Additional Area ,including (1-2).		
	(a) Left Bank Area	4,429 ha	5,234 ha
	(b) Right Bank Area	277 ha	- ha
	Subtotal (1-3)	4,706 ha	5,234 ha
(1-4)	Total Net Irrigable Area = (1-1)+(1-3)		
	(a) Left Bank Area	9,600 ha	9,376 ha
	(b) Right Bank Area	4,615 ha	- ha
	Total (1-4)	14,215 ha	9,376 ha
(2)	Primary Canal Length		
(2-1)	Left Primary Canal	44 km	76 km
(2-2)	Right Primary Canal	40 km	- km
	Total Length	84 km	76 km

Table 5.6.1 AREA AND POPULATION SHARES BY REGENCY AND MUNICIPALITY

(1) Kampar River Basin

Regency/Municipality	Area (km^2)		Ratio (%)		Population (person)		Ratio (%)	
	Whole Regency (A)	Within Basin (B)	B/A	B/E	Whole Regency (C)	Within Basin (D)	D/C	D/E
Kab.Pasaman	7,835	530	7	2	451,551	21,900	5	3
Kab. Limapuluh Kota	3,354	2,000	60	8	297,009	65,400	22	8
Kab. Indragiri Hulu	15,854	2,210	14	9	368,374	53,800	15	6
Kab. Kampar	27,908	19,808	71	81	569,911	314,300	55	38
Kodya. Pekanbaru	447	0	0	0	375,521	375,500	100	45
Kampar River Basin (E)	-	24,548	-	100	-	830,900	-	100

Note : Population share is calculated based on 1990 Census.

(2) Indragiri River Basin

Regency/Municipality	Area (km^2)		Ratio (%)		Population (person)		Ratio (%)	
	Whole Regency (A)	Within Basin (B)	B/A	B/E	Whole Regency (C)	Within Basin (D)	D/C	D/E
Kab. Limapuluh Kota	3,354	1,354	40	8	297,009	231,800	78	11
Kab. Agam	2,232	330	15	2	407,767	181,500	45	9
Kab. Tanah Datar	1,336	1,336	100	8	342,139	342,100	100	17
Kab. Solok	7,084	1,650	23	10	427,476	207,900	49	10
Kab. Sawahlunto/Sijunjung	6,092	2,310	38	14	297,129	159,300	54	8
Kodya. Payakumbuh	80	80	100	0	90,872	90,900	100	5
Kodya. Bukittinggi	25	25	100	0	83,811	83,800	100	4
Kodya. Padang Panjang	27	27	100	0	38,557	38,600	100	2
Kodya. Solok	25	25	100	0	42,730	42,700	100	2
Kodya.Sawahlunto	321	320	100	2	15,279	15,300	100	1
Kab. Indragiri Hulu	15,854	7,643	48	47	368,374	294,700	80	15
Kab. Indragiri Hilir	11,606	1,168	10	7	478,066	329,900	69	16
Indragiri River Basin (E)	-	16,268	-	100	-	2,018,500	-	100

Note : Population share is calculated based on 1990 Census.

Table 5.6.2 GUIDELINES FOR WATER SUPPLY PLANNING

Use Item	Description	Population Category (person)						
		>1,000,000	500,000-1,000,000	100,000-500,000	20,000-100,000	10,000-20,000	3,000-10,000 *1	3,000> *2
Domestic	1. Unit Consumption, House Connection (l/sec/day)	190	170	150	130	100	90	-
	2. Public Hydrant Consumption (l/person/day)	30	30	30	30	30	30	30
	3. Unit Consumption, Non-Domestic Use (l/person/day)	60	40	30	20	10	10	-
	(%)	20-25	20-25	20-25	20-25	10-20	10	-
	4. Loss (l/person/day),	50	45	40	30	24	-	-
	Ratio (%)	20-30	20-30	20-30	20-30	20	20	20
	5. Factor for Daily Max.	1.1	1.1	1.1	1.1	1.1	1.1	1
	6. Factor for Hourly Max.	1.5	1.5	1.5	1.5	1.5	1.4	1
	7. Person per House Connection (l/person/day)	5	5	5	5	6	10	-
	8. Person per Hydrant Unit (l/person/day)	300	300	300	300	100-200	100	100
	9. Water Pressure (m)	10	10	10	10	10	10	10
	10. Operation Hour	24	24	24	24	24	24	24
	11. Reservoir Volume for Hourly Peak Demand (%)	20	20	20	20	20	Depend on ** System Capacity	-
	12. House Connection : Hydrant (Max.)	80 : 20	80 : 20	80 : 20	70 : 20	70 : 20	80 : 20	100 ***
Non Domestic	1. Consumption of Tourism Area : 0.1 - 0.3 l/s/ha							
	2. Consumption of Industrial Area : 0.2 - 0.8 l/s/ha							

Source : Cipta Karya Pusat, 1993

Note : *1 Piping System : IKK Completed

*2 Simple Piping System

** Capacity of System

2.50 l/s : 20 m^3

5.00 l/s : 40 m^3

10.00 l/s : 80 m^3

*** 100% served for Public Hydrant

Table 5.6.3 ANNUAL WATER DEFICIT BY SUB-BASIN IN 2019

(1) Kampar River Basin

Unit : $10^6 m^3$

Simulation Year	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	K-9	K-10	K-11
1981	0.0	26.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	0.0	50.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	0.0	76.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	0.0	28.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	0.0	89.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	0.0	65.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	0.0	69.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	0.0	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	0.0	62.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	0.0	32.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	0.0	69.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	0.0	60.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max.	0.0	89.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min.	0.0	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C.A. (km^2)	3,337	1,871	1,187	552	1,545	3,769	1,351	3,133	3,267	1,462	3,051

(2) Indragiri River Basin

Unit : $10^6 m^3$

Simulation Year	I-1	I-2	I-3	I-4	I-5	I-6	I-7	I-8	I-9	I-10	I-11
1981	16.9	4.6	0.0	0.0	0.0	16.1	0.0	0.0	0.0	0.0	0.0
1982	31.1	0.4	0.0	0.0	0.0	34.2	0.0	0.0	0.0	0.0	0.0
1983	31.7	1.9	1.1	0.0	0.2	26.5	0.0	0.0	0.0	0.0	0.0
1984	19.6	1.7	1.3	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0
1985	57.2	13.1	13.3	0.0	11.0	52.7	0.0	0.0	0.0	0.0	0.0
1986	38.1	5.6	10.8	0.0	5.5	39.7	0.0	0.0	0.0	0.0	0.0
1987	29.7	1.1	4.9	0.0	0.3	133.8	0.0	0.0	0.0	0.0	0.0
1988	10.1	3.5	4.6	0.0	0.0	272.8	0.0	0.0	0.0	0.0	0.0
1989	33.2	2.7	7.0	0.0	0.9	74.1	0.0	0.0	0.0	0.0	0.0
1990	3.6	4.3	2.3	0.0	2.1	204.7	0.0	0.0	0.0	0.0	0.0
1991	18.6	0.2	2.3	0.0	10.2	162.0	0.0	0.0	0.0	0.0	0.0
1992	20.2	2.4	7.1	0.0	4.6	96.6	0.0	0.0	0.0	0.0	0.0
Average	25.8	3.4	4.6	0.0	3.0	92.8	0.0	0.0	0.0	0.0	0.0
Max.	57.2	13.1	13.3	0.0	11.0	272.8	0.0	0.0	0.0	0.0	0.0
Min.	3.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C.A. (km^2)	1,580	1,076	2,023	360	2,414	1,629	1,803	1,435	939	1,791	1,168

Table 5.7.1 POWER DEMAND AND SUPPLY IN REGION III

Demand and Supply	Unit	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
1. Demand																	
Sales	GWh	891	1,203	1,406	1,636	1,886	2,158	2,384	2,632	2,867	3,112	3,384	3,692	4,040	4,351	4,672	5,001
(Growth rate)	(%)	(19.3)	(35.0)	(16.8)	(16.4)	(15.3)	(14.4)	(10.5)	(10.4)	(9.0)	(8.5)	(8.7)	(9.1)	(9.4)	(7.7)	(7.4)	(7.0)
Losses of T & D	GWh	188	245	276	309	343	377	417	460	501	544	591	635	683	723	764	804
Loss to production	(%)	(17.0)	(16.5)	(16.0)	(15.5)	(15.0)	(14.5)	(14.5)	(14.5)	(14.5)	(14.5)	(14.5)	(14.3)	(14.1)	(13.9)	(13.7)	(13.5)
Sent Out Energy	GWh	1,079	1,448	1,681	1,945	2,229	2,535	2,801	3,091	3,368	3,656	3,975	4,327	4,723	507	5,436	5,805
Plant Use	%	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Energy Production	GWh	1,107	1,485	1,725	1,995	2,286	2,600	2,873	3,171	3,455	3,750	4,077	4,438	4,844	5,204	5,575	5,953
Peak Load	MW	206.2	262.4	303.1	348.7	397.7	452.6	505.2	563.2	617.8	674.7	738.4	810.0	891.7	963.1	1,036.9	1,112.5
Load Factor	%	61.3	64.6	65.0	65.3	65.6	65.5	61.9	64.3	63.8	63.4	63.0	62.5	62.0	61.7	61.4	61.1
2. Supply																	
(1) Existing																	
PLTA Mini	MW	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
PLTA	MW	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5	78.5
PLTG	MW	42.7	42.7	42.7	42.7	42.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PLTD	MW	142.3	142.1	142.1	131.8	119.9	111.6	111.6	110.6	102.8	97.9	81.6	81.6	81.6	81.6	81.6	81.6
Sub-total	MW	264.1	263.9	263.9	253.6	241.7	190.7	190.7	189.7	181.9	177.0	160.7	160.7	160.7	160.7	160.7	160.7
(2) On-going Projects																	
PLTG Padang #1-2	MW	35.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
Kotapanjang #1-3	MW	-	-	-	-	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0
Singkarak #1-4	MW	-	-	-	-	-	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0
PLTD Pekanbaru	MW	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
Sub - total	MW	50.2	85.2	85.2	85.2	199.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2
(3) Commited Project																	
PLTU Ombilin #1-2	MW	-	-	-	100.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
(4) Planned Project																	
PLTP Kerinci	MW	-	-	-	-	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PLTA Mini	MW	-	-	2.7	2.7	7.7	7.7	7.7	7.7	7.7	8.7	9.5	23.7	23.7	23.7	23.7	23.7
PLTD	MW	-	-	24.0	24.0	34.5	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
Sub - total	MW	0.0	0.0	26.7	26.7	44.6	54.1	54.1	54.0	55.1	55.9	70.1	70.1	70.1	70.1	70.0	70.0
Total	MW	314.3	349.1	375.8	465.5	685.5	819.0	819.0	818.0	811.2	807.1	805.0	805.0	805.0	805.0	805.0	805.0

Source : PLN, Investment Program 1993-2003, RuKN Scenario, June 17, 1993

Note : PLTA - Hydroelectric Power Plant
PLTD - Diesel Power Plant
PLTG - Gas Turbine Power Plant
PLTU - Steam Turbine Power Plant
PLTP - Geothermal Power Plant
T & D - Transmission and Distribution

Table 5.7.2 POWER OUTPUT AND ENERGY OUTPUT OF KUANTAN POWER STATION

Case	SWL (EL.m)	NWL (EL.m)	RWL (EL.m)	LWL (EL.m)	Effective Storage ($10^6 m^3$)	Base Turbine Discharge (m^3/sec)	Max Turbine Discharge (m^3/sec)	Installed Capacity (MW)	90% Dependable Power (MW)	Energy Output (GWh /year)
k.1	125.0	108.8	106.5	102.0	1,675	57.39	96.39	39.1	38.5	315.3
k.2	125.0	111.4	108.3	102.0	1,675	57.39	176.22	72.3	69.7	498.9
k.3	125.0	114.2	110.1	102.0	1,675	57.39	245.22	103.2	95.7	620.8
k.4	125.0	116.7	111.8	102.0	1,675	57.39	305.22	131.5	116.7	700.5
k.5	125.0	119.3	113.5	102.0	1,675	57.39	368.22	162.5	139.1	765.1
k.6	125.0	121.3	114.9	102.0	1,675	57.39	413.22	185.9	155.7	800.9
k.7	125.0	123.2	116.1	102.0	1,675	57.39	446.22	204.9	166.6	830.5
k.8	125.0	125.0	117.3	102.0	1,675	57.39	452.22	212.2	175.0	855.3
k.9	125.0	106.8	105.2	102.0	1,675	57.39	61.02	24.3	24.2	211.4
k.10	122.5	108.8	106.5	102.0	1,395	57.39	96.39	39.1	38.5	315.3
k.11	122.5	112.9	109.3	102.0	1,395	57.39	212.22	88.3	83.9	567.6
k.12	122.5	115.8	111.2	102.0	1,395	57.39	284.22	121.4	108.8	675.2
k.13	122.5	118.3	112.9	102.0	1,395	57.39	344.22	150.5	130.0	743.5
k.14	122.5	120.6	114.4	102.0	1,395	57.39	401.22	179.2	149.7	789.4
k.15	122.5	122.5	115.7	102.0	1,395	57.39	431.22	196.6	163.3	818.6
k.16	122.5	106.8	105.2	102.0	1,395	57.39	61.02	24.3	24.2	211.4
k.17	120.0	108.8	106.5	102.0	1,145	57.39	149.43	59.6	58.6	422.2
k.18	120.0	112.4	108.9	102.0	1,145	57.39	203.22	84.1	80.1	550.0
k.19	120.0	115.2	110.8	102.0	1,145	57.39	269.22	114.4	103.6	657.0
k.20	120.0	117.8	112.5	102.0	1,145	57.39	332.22	144.6	215.4	731.1
k.21	120.0	120.0	114.0	102.0	1,145	57.39	386.22	171.5	144.5	778.5
k.22	120.0	106.8	105.2	102.0	1,145	57.39	61.02	24.32	24.2	211.4
k.23	117.5	108.8	106.5	102.0	925	57.39	149.43	59.7	58.8	423.2
k.24	117.5	112.1	108.7	102.0	925	57.39	194.22	80.2	76.8	533.9
k.25	117.5	114.8	110.5	102.0	925	57.39	260.22	110.1	100.6	643.7
k.26	117.5	117.5	112.3	102.0	925	57.39	326.22	141.6	123.1	723.4
k.27	117.5	106.8	105.2	102.0	925	57.39	61.02	24.3	24.2	211.4
k.28	115.0	108.8	106.5	102.0	735	57.39	96.39	39.1	38.5	315.3
k.29	115.0	112.3	108.9	102.0	735	57.39	197.22	81.6	78.1	540.2
k.30	115.0	115.0	110.7	102.0	735	57.39	263.22	111.7	101.8	649.0
k.31	115.0	106.8	105.2	102.0	735	57.39	61.02	24.32	24.2	211.4

Note : SWL - Surcharge Water Level
NWL - Normal Water Level
RWL - Reservoir Water Level
LWL - Low Water Level

Table 5.8.1 ALTERNATIVE CASE FOR KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT

Case	Reservoir Capacity				Design Discharge for River Improvement				
	Kiri No. 1		Kiri No. 2		Kiri No.1 - Lipat Kain	Kiri No.2 - Lipat Kain	Kampar Kiri	Langgam - Kerinci	Kerinci-River Mouth
	Purpose	Capacity	Purpose	Capacity	Design Q	Design Q	Design Q	Design Q	Design Q
		10^6 m^3		10^6 m^3	m^3/s	m^3/s	m^3/s	m^3/s	m^3/s
No. 1	F.C.	0	F.C.	0	1,630	1,240	3,100	6,800	7,050
	H.C.	646	H.C.	438					
	D.C.	1,350	D.C.	1,612					
	G.C.	1,996	G.C.	2,050					
No. 2	F.C.	100	F.C.	40	690	450	2,500	5,500	5,750
	H.C.	646	H.C.	438					
	D.C.	1,350	D.C.	1,612					
	G.C.	2,096	G.C.	2,090					
No. 3	F.C.	200	F.C.	50	450	370	1,700	5,050	5,300
	H.C.	646	H.C.	438					
	D.C.	1,350	D.C.	1,612					
	G.C.	2,196	G.C.	2,100					
No. 4	F.C.	250	F.C.	150	350	170	1,450	4,850	5,100
	H.C.	646	H.C.	438					
	D.C.	1,350	D.C.	1,612					
	G.C.	2,246	G.C.	2,200					
No. 5	F.C.	300	F.C.	200	250	80	1,450	4,850	5,100
	H.C.	646	H.C.	438					
	D.C.	1,350	D.C.	1,612					
	G.C.	2,296	G.C.	2,250					

Note: F.C.: Flood Control Capacity
H.C.: Hydropower Capacity
D.C.: Dead Storage Capacity
G.C.: Gross Storage Capacity

Table 5.8.2 ALTERNATIVE CASE FOR INDRAGIRI RIVER DEVELOPMENT PROJECT

Case	Dam	S.W.L.	Storage Capacity						N.W.L.	Design Discharge		
			Gross	Flood Control	Hydropower	Irrigation	Maintenance Flow	Dead		Lubuk Jambi-Peranap	Peranap-Japura	Japura-Mouth
		EL.m	10^6 m^3	10^6 m^3	10^6 m^3	10^6 m^3	10^6 m^3	10^6 m^3	EL.m	m^3/s	m^3/s	m^3/s
K-1-1	Kuantan	125.0	2,100	1,345	0	117	213	425	108.8	1,260	4,570	4,180
K-1-2			2,100	1,200	145	117	213	425	111.4	1,520	4,670	4,290
K-1-3			2,100	1,000	345	117	213	425	114.2	1,910	4,840	4,470
K-1-4			2,100	816	529	117	213	425	116.7	2,280	4,990	4,620
K-1-5			2,100	600	745	117	213	425	119.3	2,720	5,180	4,820
K-1-6			2,100	400	945	117	213	425	121.3	3,160	5,360	5,010
K-1-7			2,100	200	1,145	117	213	425	123.2	4,420	5,890	5,570
K-1-8			2,100	0	1,345	117	213	425	125.0	6,550	6,780	6,500
K-2-1	Kuantan	122.5	1,820	1,065	0	117	213	425	108.8	1,780	4,780	4,400
K-2-2			1,820	1,000	65	117	213	425	110.0	1,910	4,840	4,470
K-2-3			1,820	816	249	117	213	425	112.9	2,280	4,990	4,620
K-2-4			1,820	600	465	117	213	425	115.8	2,720	5,180	4,820
K-2-5			1,820	400	665	117	213	425	118.3	3,160	5,360	5,010
K-2-6			1,820	200	865	117	213	425	120.6	4,420	5,890	5,570
K-2-7			1,820	0	1,065	117	213	425	122.5	6,550	6,780	6,500
K-3-1	Kuantan	120.0	1,570	815	0	117	213	425	108.8	2,280	4,990	4,620
K-3-2			1,570	600	215	117	213	425	112.4	2,720	5,180	4,820
K-3-3			1,570	400	415	117	213	425	115.2	3,160	5,360	5,010
K-3-4			1,570	200	615	117	213	425	117.8	4,420	5,890	5,570
K-3-5			1,570	0	815	117	213	425	120.0	6,550	6,780	6,500
K-4-1	Kuantan	117.5	1,350	595	0	117	213	425	108.7	2,740	5,190	4,830
K-4-2			1,350	400	195	117	213	425	112.1	3,160	5,360	5,010
K-4-3			1,350	200	395	117	213	425	114.8	4,420	5,890	5,570
K-4-4			1,350	0	595	117	213	425	117.5	6,550	6,780	6,500
K-5-1	Kuantan	115.0	1,160	405	0	117	213	425	108.8	3,160	5,360	5,010
K-5-2			1,160	200	205	117	213	425	112.3	4,420	5,890	5,570
K-5-3			1,160	0	405	117	213	425	115.0	6,550	6,780	6,500
K-Sn	Kuantan	120.0	1,570	468	415	49	213	425	107.8	3,000	5,290	4,940
	Up.Sinamar			0	0	68		93	481.8	-	-	-
K-Sk	Kuantan	120.0	1,570	481	415	36	213	425	107.5	2,980	5,290	4,940
	Sukam			0	0	203		19	216.0	-	-	-

Table 5.8.3 B-C AND B/C CALCULATION FOR ALTERNATIVE CASES OF INDRAGIRI RIVER DEVELOPMENT PROJECT

Case	Dam	S.W.L.	Reservoir Capacity			Cost (Construction Base Cost + Compensation)							Benefit				B-C	B/C
						Dam	River Improvement				Power Station	Total	Flood	Hydropower	Total	Present Value B		
							Lubuk Jambi-Peranap	Peranap-Japura	Japura-	Total		C	Annual	Annual	Annual			
		EL.m	10^6m^3	10^6m^3	10^6m^3 EL.m *1	*2 10^3Rp	m^3/s *3 10^3Rp	m^3/s *3 10^3Rp	m^3/s *3 10^3Rp	10^3Rp	10^3Rp	10^3Rp	10^3Rp	MW GWh 10^3Rp	10^3Rp	10^3Rp	10^3Rp	
K-1-1	Kuantan	125.0	2,100	1,345	0 (WL.108.8m)	290	1,260 183.1	4,570 601.0	4,180 335.5	1,119.6	107	1,516.6	207.37	38.5 315.3 45.00	252.37	2,502.2	985.6	1.65
K-1-2	Kuantan		2,100	1,200	145 (WL.111.4m)	290	1,520 342.1	4,670 617.3	4,290 338.6	1,298.1	135	1,723.1	207.37	69.7 498.9 67.54	274.91	2,725.7	1,002.7	1.58
K-1-3	Kuantan		2,100	1,000	345 (WL.114.2m)	290	1,910 479.7	4,840 645.0	4,470 343.5	1,468.2	162	1,920.2	207.37	95.7 620.8 90.26	297.63	2,950.9	1,030.7	1.54
K-1-4	Kuantan		2,100	816	529 (WL.116.7m)	290	2,280 552.1	4,990 669.5	4,620 347.6	1,569.2	188	2,047.2	207.37	116.7 700.5 107.87	315.24	3,125.6	1,078.3	1.53
K-1-5	Kuantan		2,100	600	745 (WL.119.3m)	290	2,720 639.7	5,180 690.8	4,820 353.1	1,683.5	221	2,194.5	207.37	139.1 765.1 125.87	333.24	3,304.0	1,109.5	1.51
K-1-6	Kuantan		2,100	400	945 (WL.121.3m)	290	3,160 734.4	5,360 710.2	5,010 358.0	1,802.6	253	2,345.6	207.37	155.7 800.9 138.74	346.11	3,431.7	1,086.0	1.46
K-1-7	Kuantan		2,100	200	1,145 (WL.123.2m)	290	4,420 937.8	5,890 743.7	5,570 362.6	2,044.1	281	2,615.1	207.37	166.6 830.5 147.43	354.80	3,517.8	902.7	1.35
K-1-8	Kuantan		2,100	0	1,345 (WL.125.0m)	290	6,550 1,277.4	6,780 787.8	6,500 372.0	2,437.1	292	3,019.1	207.37	175.0 855.3 154.20	361.57	3,584.9	565.8	1.19
K-2-1	Kuantan	122.5	1,820	1,065	0 (WL.108.8m)	277	1,780 433.8	4,780 635.3	4,400 341.6	1,410.7	107	1,794.7	207.37	38.5 315.3 45.00	252.37	2,502.2	707.5	1.39
K-2-2	Kuantan		1,820	816	249 (WL.112.9m)	277	2,280 552.1	4,990 669.5	4,620 347.6	1,569.2	147	1,993.2	207.37	83.9 567.6 80.03	287.40	2,849.5	856.3	1.43
K-2-3	Kuantan		1,820	600	465 (WL.115.8m)	277	2,720 639.7	5,180 690.8	4,820 353.1	1,683.5	178	2,138.5	207.37	108.8 675.2 101.43	308.80	3,061.6	923.1	1.43
K-2-4	Kuantan		1,820	400	655 (WL.118.3m)	277	3,160 734.4	5,360 710.2	5,010 358.0	1,802.6	208	2,287.6	207.37	130.0 743.5 118.74	326.11	3,233.3	945.7	1.41
K-2-5	Kuantan		1,820	200	865 (WL.120.6m)	277	4,420 937.8	5,890 743.7	5,570 362.6	2,044.1	243	2,564.1	207.37	149.7 789.2 134.14	341.51	3,386.0	821.9	1.32
K-2-6	Kuantan		1,820	0	1,065 (WL.122.5m)	277	6,550 1,277.4	6,780 787.8	6,500 372.0	2,437.1	269	2,983.1	207.37	163.3 818.6 144.69	352.06	3,490.6	507.5	1.17
K-3-1	Kuantan	120.0	1,570	815	0 (WL.108.8m)	265	2,280 552.1	4,990 669.5	4,620 347.6	1,569.2	125	1,959.2	207.37	38.5 315.3 45.00	252.37	2,502.2	543.0	1.28
K-3-2	Kuantan		1,570	600	215 (WL.112.4m)	265	2,720.0 639.7	5,180.0 690.8	4,820.0 353.1	1,683.5	144	2,092.5	207.37	80.1 550.0 76.72	284.09	2,816.7	724.2	1.35
K-3-3	Kuantan		1,570	400	415 (WL.115.2m)	265	3,160 734.4	5,360 710.2	5,010 358.0	1,802.6	171	2,238.6	207.37	103.6 657.0 97.12	304.49	3,019.0	780.3	1.35
K-3-4	Kuantan		1,570	200	615 (WL.117.8m)	265	4,420 937.8	5,890 743.7	5,570 362.6	2,044.1	201	2,510.1	207.37	125.4 731.1 115.08	322.45	3,197.0	686.9	1.27
K-3-5	Kuantan		1,570	0	815 (WL.120.0m)	265	6,550 1,277.4	6,780 787.8	6,500 372.0	2,437.1	233	2,935.1	207.37	144.5 778.5 130.13	337.50	3,346.2	411.1	1.14
K-4-1	Kuantan	117.5	1,350	595	0 (WL.108.8m)	253	2,740 644.8	5,190 691.8	4,830 353.3	1,689.9	125	2,067.9	207.37	38.5 315.3 45.00	252.37	2,502.2	434.4	1.21
K-4-2	Kuantan		1,350	400	195 (WL.112.1m)	253	3,160 734.4	5,360 710.2	5,010 358.0	1,802.6	141	2,196.6	207.37	76.8 533.9 73.81	281.18	2,787.9	591.2	1.32
K-4-3	Kuantan		1,350	200	395 (WL.114.8m)	253	4,420 937.8	5,890 743.7	5,570 362.6	2,044.1	168	2,465.1	207.37	100.6 643.7 94.53	301.90	2,993.3	528.2	1.21
K-4-4	Kuantan		1,350	0	595 (WL.117.5m)	253	6,550 1,277.4	6,780 787.8	6,500 372.0	2,437.1	198	2,888.1	207.37	123.1 723.4 113.19	320.56	3,178.2	290.1	1.10
K-5-1	Kuantan	115.0	1,160	405	0 (WL.108.8m)	245	3,160 734.4	5,360 710.2	5,010 358.0	1,802.6	107	2,154.6	207.37	38.5 315.3 45.00	252.37	2,502.2	347.6	1.16
K-5-2	Kuantan		1,160	200	205 (WL.112.3m)	245	4,420 937.8	5,890 743.7	5,570 362.6	2,044.1	144	2,433.1	207.37	78.1 540.2 74.96	282.33	2,799.2	366.1	1.15
K-5-3	Kuantan		1,160	0	405 (WL.115.0m)	245	6,550 1,277.4	6,780 787.8	6,500 372.0	2,437.1	168	2,850.1	207.37	101.8 649.0 95.57	302.94	3,003.6	153.4	1.05
K-So	Kuantan	120.0	1,570	468	415 (WL.104.3m)	265	3,010 712.5	5,300 703.6	4,950 356.9	1,772.9	171	2,208.9	207.37	103.6 657.0 97.12	304.49	3,019.0		
	Up.Sinamar		165 Eff. 68	0	(WL. 481.8m)	508	-	-	-	0.0	76	584.0	-	13.3 120.1 15.98	15.98	158.4	384.5	1.14
K-Sk	Kuantan	120.0	1,570	481	415 (WL.105.9m)	265	2,980 706.1	5,290 702.3	4,940 356.9	1,765.3	171	2,201.3	207.37	103.6 657.0 97.12	304.49	3,019.0		
	Sukam		230 Eff. 203	0	(WL. 216.0m) 0	138	-	-	-	0.0	73	211.0	-	11.6 44.2 11.59	11.59	114.9	721.6	1.30

Note:
US$/kW (≥50MW): 318.14
US$/kW (<50MW): 391.66
US$/kWh: 0.0178
Rp./US$: 2,175
Present Worth of An Annuity Factor (Discount Rate:10%, Project Life:50-year): 9.9148
*1: (WL m) is Normal Water Level
*2: Crest elevation is assumed by adding 2.0 m to S.W.L.
*3: Total cost is calculated by multiplying Direct Construction Cost by 1.27

Table 5.12.1 UNIT COST OF CONSTRUCTION MATERIALS

No.	Item	Unit	F.C. (Rp.)	L.C. (Rp.)	Total (Rp.)
1	Portland Cement	ton	85,000	85,000	170,000
2	Concrete Aggregate, Coarse	cu m	0	40,000	40,000
3	Concrete Aggregate, Fine	cu m	0	20,000	20,000
4	Crusher Run	cu m	0	35,000	35,000
5	Cobble Stone	cu m	0	40,000	40,000
6	Water Reducing Agent	li	1,280	320	1,600 *
7	Air Bubble Agent	li	5,600	1,400	7,000 *
8	Timber Plank	cu m	0	200,000	200,000 *
9	Timber, Square	cu m	0	180,000	180,000 *
10	Plywood, 1.2mx2.4mx12mm	pcs	0	30,000	30,000 *
11	Round Bar	ton	800,000	200,000	1,000,000 *
12	Deformed Bar	ton	880,000	220,000	1,100,000 *
13	Separator	m	1,440	360	1,800 *
14	Form Oil	li	1,000	1,000	2,000 *
15	Galvanized Pipe, 75mm dia.	m	6,000	1,500	7,500 *
16	Galvanized Pipe, 100mm dia.	m	12,800	3,200	16,000 *
17	Galvanized Pipe, 150mm dia.	m	20,000	5,000	25,000 *
18	PVC Pipe, 50mm dia.	m	1,500	1,500	3,000 *
19	PVC Pipe, 200mm dia.	m	16,500	16,500	33,000 *
20	Nail	kg	1,000	1,000	2,000
21	Tie Wire	kg	1,000	1,000	2,000
22	Gasoline	li	350	350	700
23	Light Oil	li	190	190	380
24	Lubricant Oil	li	2,250	2,250	4,500
25	Hydraulic Oil	li	2,500	2,500	5,000
26	Grease	kg	2,500	2,500	5,000
27	Concrete Pipe, 15mm dia.	m	2,250	2,250	4,500
28	Concrete Pipe, 30cm dia.	m	4,500	4,500	9,000
29	Concrete Pipe, 50cm dia.	m	9,500	9,500	19,000
30	Concrete Pile, 30cm square	m	50,000	50,000	100,000
31	Concrete Sheet Pile, 20x50cm	m	50,000	50,000	100,000
32	Steel Sheet Pile	kg	2,080	520	2,600
33	Metal Form	sq m	15,200	3,800	19,000

Note : * Unit Price in Bangkinang

Table 5.12.2 BASIC LABOR WAGES

No.	Item	Unit	Cost (Rp.)
1	Foremen	md	10,000
2	Dredger Operator	md	10,000
3	Welder	md	8,500
4	Operator	md	8,500
5	Electrician	md	8,500
6	Dredger Crew	md	8,500
7	Mechanic	md	8,500
8	Mason	md	7,000
9	Painter	md	6,000
10	Driver	md	8,500
11	Concrete Worker	md	6,000
12	Steel Worker	md	7,000
13	Asphalt Worker	md	7,000
14	Carpenter	md	7,000
15	Skilled Laborer	md	7,000
16	Assistant Operator	md	5,500
17	Assistant Driver	md	5,500
18	Common Laborer	md	5,000

Table 5.12.3 UNIT PRICE OF HEAVY EQUIPMENT

No.	Equipment	Power (HP)	Total Weight of Equipment (ton)	Economic Life (yr)	Annual Working Hour (hr/yr)	Hourly Fuel Consumption (li/hr)	Price* (1,000 Rp.)
1	Bulldozer, 11 ton	130.0	14.00	5	2,000	15.6	293,000
2	Bulldozer, 15 ton	160.0	17.00	5	2,000	19.2	309,000
3	Bulldozer, 21 ton	228.0	25.20	5	2,000	27.4	342,000
4	Bulldozer with Ripper, 21 ton	228.0	27.00	5	2,000	31.9	402,000
5	Bulldozer with Ripper, 32 ton	315.0	39.00	5	2,000	44.1	756,000
6	Swamp Bulldozer, 16 ton	170.0	19.40	5	2,000	20.4	343,000
7	Backhoe, 0.4 cu m	80.0	10.70	5	2,000	10.4	185,000
8	Backhoe, 0.7 cu m	125.0	18.90	5	2,000	16.3	263,000
9	Backhoe, 1.20 cu m	210.0	29.80	5	2,000	27.3	537,000
10	Truck Mixer, 3.0 cu m	220.0	7.40	5	2,000	8.8	113,000
11	Truck, 4.5 ton	183.0	3.40	5	2,000	7.3	58,000
12	Dumptruck, 8 ton	253.0	7.10	5	2,000	10.1	111,000
13	Dumptruck, 11 ton	334.0	9.55	8	2,000	13.4	156,000
14	Crawler Crane, 16 ton	96.0	22.40	5	2,000	6.7	321,000
15	Crawler Crane, 27 ton	115.0	27.75	5	2,000	8.1	406,000
16	Crawler Crane, 37 ton	117.0	37.35	5	2,000	8.2	570,000
17	Truck Crane, 16 ton	230.0	19.80	5	2,000	6.9	361,000
18	Tire Roller, 8 ton	99.0	10.10	5	2,000	6.9	142,000
19	Diesel Hammer	102.0	59.50	5	2,000	13.3	710,000
20	Portable Concrete Mixer, 0.50 cu m	7.4	7.40	2	2,000	-	60,000
21	Concrete Plant, 55 cu m/hr	49.0	50.00	15	2,000	-	631,000
22	Air Compressor, 5.0 cu m/min	46.0	0.99	5	2,000	6.4	76,000
23	Air Compressor, 7.5 cu m/min	65.0	1.10	5	2,000	9.1	83,000
24	Generator, 10 KVA	15.4	0.57	5	2,000	1.8	17,000
25	Generator, 20 KVA	27.0	0.77	5	2,000	3.2	34,000
26	Generator, 40 KVA	61.0	1.05	5	2,000	7.3	38,000
27	Generator, 125 KVA	153.0	2.20	5	2,000	18.4	76,000
28	Generator, 150 KVA	187.5	2.80	5	2,000	22.0	97,000
29	Wheel Loader, 0.60 cu m	47.0	3.85	5	2,000	4.7	69,000
30	Wheel Loader, 0.80 cu m	54.0	4.65	5	2,000	5.4	87,000
31	Pontoon Barge, 200 ton	-	-	15	2,000	-	422,000
32	Scow, 150 cu m	-	-	15	2,000	-	147,000
33	Backhoe with Breaker, 600 kg	125.0	18.97	5	2,000	16.3	380,700

Note : * delivery duty paid, VAT excluded

Table 5.12.4 UNIT COST OF LAND ACQUISITION AND COMPENSATION FOR HOUSE EVACUATION

Item	Unit	Cost (Rp.)
I. House Evacuation		
Residential House		
- Permanent	unit	12,000,000
- Semi-Permanent	unit	4,000,000
- Temporary	unit	2,000,000
Building		
- Office (Commercial)	unit	20,000,000
- Factory	unit	25,000,000
- Shops	unit	15,000,000
- Hospital (Clinic)	unit	12,000,000
- Government Building	unit	25,000,000
- School	unit	55,000,000
II. Land Acquisition		
Residential House *		
- Near National Road	sq m	3,000
- Near Provincial Road	sq m	1,500
- Near District Road	sq m	1,000
- Near Sub-District Road	sq m	600
Commercial Area	sq m	4,000
Estate (Plant+Land)		
- Rubber	ha	3,200,000
- Coconut	ha	2,900,000
- Others	ha	2,200,000
Paddy Land		
- Wet Paddy (Urban)	ha	20,000,000
- Wet Paddy (Rural)	ha	10,000,000
- Dry Paddy	ha	2,500,000
Other Cultivated Land	ha	1,000,000
Pasture Land	ha	500,000
Fish Pond	ha	21,000,000

Note : * Double costs were applied for residential areas in town

Table 5.12.5 (1/4) FINANCIAL COST OF KAMPAR KANAN WATER SUPPLY PROJECT
- KUOK INTAKE WEIR / RANTAUBERANGIN IRRIGATION SYSTEM CONSTRUCTION WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					89,152	47,913	137,065
1. Preparatory Works (10% of Item 2)					8,105	4,356	12,460
2. Irrigation Facilities					81,047	43,557	124,605
a. Head Works					32,105	16,368	48,474
- Excavation	13,400	cu m	8,000	2,000	107	27	134
- Backfill	3,300	cu m	7,200	1,800	24	6	30
- Embankment	12,300	cu m	9,600	2,400	118	30	148
- Weir					17,960	10,283	28,243
Concrete	7,750	cu m	285,000	285,000	2,209	2,209	4,418
Apron	7,000	sq m	80,000	120,000	560	840	1,400
Riverbed Protection	5,600	sq m	0	120,000	0	672	672
Gate	481	sq m	31,500,000	13,500,000	15,152	6,494	21,645
Revetment	1,460	sq m	27,000	47,000	39	69	108
- Foundation Works	1	l.s.	0	0	1,796	1,028	2,824
- Temporary Coffer	1	l.s.	0	0	460	482	942
- Intake					6,245	2,930	9,176
Concrete	1,920	cu m	210,000	210,000	403	403	806
Gate	137	sq m	38,500,000	16,500,000	5,275	2,261	7,535
Foundation Works	1	l.s.	0	0	568	266	834
- Flushing Gate					2,136	999	3,135
Concrete	630	cu m	210,000	210,000	132	132	265
Gate	47	sq m	38,500,000	16,500,000	1,810	776	2,585
Foundation Works	1	l.s.	0	0	194	91	285
- Steel Stop Log	41	ton	910,000	390,000	37	16	53
- Control Bridge	1,895	sq m	1,700,000	300,000	3,222	569	3,790
- Control House	0	sq m	120,000	480,000	0	0	0
b. Head Reach & Main Canal					27,408	20,800	48,207
- Left Bank (L=44 km)					16,122	11,870	27,992
Exacavation	924,000	cu m	4,800	1,200	4,435	1,109	5,544
Embankment	396,000	cu m	3,600	900	1,426	356	1,782
Concrete Lining	36,100	cu m	137,700	137,700	4,971	4,971	9,942
Footing	44,000	cu m	48,000	82,000	2,112	3,608	5,720
Expansion Joint	82,000	m	36,800	1,200	3,018	98	3,116
Weep Hole	1,200	unit	800	17,600	1	21	22
Gravel Metaling	26,400	cu m	0	60,200	0	1,589	1,589
Regulation Ponds	1	l.s.	0	0	160	118	277
- Right Bank (L=40 km)					11,286	8,929	20,215
Exacavation	407,000	cu m	4,800	1,200	1,954	488	2,442
Embankment	210,000	cu m	3,600	900	756	189	945
Concrete Lining	24,000	cu m	137,700	137,700	3,305	3,305	6,610
Footing	40,000	cu m	48,000	82,000	1,920	3,280	5,200
Expansion Joint	88,000	m	36,800	1,200	3,238	106	3,344
Weep Hole	1,600	unit	800	17,600	1	28	29
Gravel Metaling	24,000	cu m	0	60,200	0	1,445	1,445
Regulation Ponds	1	l.s.	0	0	112	88	200
c. Left Bank Irrigation System					16,049	4,762	20,810
- Exisiting/Rainfed	553	ha	546,000	162,000	302	90	392
- Exisiting/Undeveloped	2,781	ha	2,184,000	648,000	6,074	1,802	7,876
- New/Undeveloped	4,429	ha	2,184,000	648,000	9,673	2,870	12,543
d. Right Bank Irrigation System					5,486	1,628	7,113
- Exisiting/Rainfed	375	ha	546,000	162,000	205	61	266
- Exisiting/Undeveloped	2,141	ha	2,184,000	648,000	4,676	1,387	6,063
- New/Undeveloped	277	ha	2,184,000	648,000	605	179	784

Table 5.12.5 (2/4) FINANCIAL COST OF KAMPAR KANAN WATER SUPPLY PROJECT
- KUOK INTAKE WEIR / RANTAUBERANGIN IRRIGATION SYSTEM CONSTRUCTION WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
II. Compensation Cost					0	4,620	4,620
1. Land Acquisition					0	660	660
a. Left Bank (L=44 km)					0	390	390
- Right of Way	130.0	ha	0	3,000,000	0	390	390
b. Right Bank (L=40 km)					0	270	270
- Right of Way	90.0	ha	0	3,000,000	0	270	270
2. Compensation					0	3,960	3,960
a. Left Bank (L=44 km)					0	2,120	2,120
- Permanent House	150	unit	0	12,000,000	0	1,800	1,800
- Semi-Permanent	80	unit	0	4,000,000	0	320	320
b. Right Bank (L=40 km)					0	1,840	1,840
- Permanent House	130	unit	0	12,000,000	0	1,560	1,560
- Semi-Permanent	70	unit	0	4,000,000	0	280	280
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	7,084	7,084
IV. Engineering Cost (10% of Item I)					8,915	4,791	13,707
V. Physical Contigency (10% of Items I, II & IV)					9,807	5,732	15,539
VI. Total (Items I to V)					107,874	70,141	178,015
VII. Value Added Tax (10% of Item VI)					0	17,802	17,802
VIII. Grand Total					107,874	87,942	195,817

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.5 (3/4) FINANCIAL COST OF KAMPAR KANAN WATER SUPPLY PROJECT
- RANTAUBERANGIN IRRIGATION SYSTEM CONSTRUCTION WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					39,159	20,975	60,134
1. Preparatory Works (10% of Item 2)					3,560	1,907	5,467
2. Irrigation Facilities					35,599	19,069	54,668
a. Head Works					0	0	0
- Excavation	0	cu m	8,000	2,000	0	0	0
- Backfill	0	cu m	7,200	1,800	0	0	0
- Embankment	0	cu m	9,600	2,400	0	0	0
- Weir					0	0	0
Concrete	0	cu m	285,000	285,000	0	0	0
Apron	0	sq m	80,000	120,000	0	0	0
Riverbed Protection	0	sq m	0	120,000	0	0	0
Gate	0	sq m	31,500,000	13,500,000	0	0	0
Revetment	0	sq m	27,000	47,000	0	0	0
Foundation Works	0	l.s.	0	0	0	0	0
Temporary Coffer	0	l.s.	0	0	0	0	0
- Intake					0	0	0
Concrete	0	cu m	210,000	210,000	0	0	0
Gate	0	sq m	38,500,000	16,500,000	0	0	0
Foundation Works	0	l.s.	0	0	0	0	0
- Flushing Gate					0	0	0
Concrete	0	cu m	0	0	0	0	0
Gate	0	sq m	0	0	0	0	0
Foundation Works	0	l.s.	0	0	0	0	0
- Steel Stop Log	0	ton	910,000	390,000	0	0	0
- Control Bridge	0	sq m	1,700,000	300,000	0	0	0
- Control House	0	sq m	120,000	480,000	0	0	0
b. Head Reach & Main Canal					22,303	15,124	37,426
- Left Bank (L=84 km)					22,303	15,124	37,426
Exacavation	1,411,000	cu m	4,800	1,200	6,773	1,693	8,466
Embankment	434,000	cu m	3,600	900	1,562	391	1,953
Concrete Lining	44,800	cu m	137,700	137,700	6,169	6,169	12,338
Footing	62,000	cu m	48,000	82,000	2,976	5,084	8,060
Expansion Joint	125,000	m	36,800	1,200	4,600	150	4,750
Weep Hole	2,400	unit	800	17,600	2	42	44
Gravel Metaling	24,000	cu m	0	60,200	0	1,445	1,445
Regulation Ponds	1	l.s.	0	0	221	150	371
- Right Bank (L=0 km)					0	0	0
Exacavation	0	cu m	4,800	1,200	0	0	0
Embankment	0	cu m	3,600	900	0	0	0
Concrete Lining	0	cu m	137,700	137,700	0	0	0
Footing	0	cu m	48,000	82,000	0	0	0
Expansion Joint	0	m	36,800	1,200	0	0	0
Weep Hole	0	unit	800	17,600	0	0	0
Gravel Metaling	0	cu m	0	60,200	0	0	0
Regulation Ponds	0	l.s.	0	0	0	0	0
c. Left Bank Irrigation System					13,296	3,945	17,241
- Exisiting/Rainfed	0	ha	546,000	162,000	0	0	0
- Exisiting/Undeveloped	0	ha	2,184,000	648,000	0	0	0
- New/Undeveloped	6,088	ha	2,184,000	648,000	13,296	3,945	17,241
d. Right Bank Irrigation System					0	0	0
- Exisiting/Rainfed	0	ha	546,000	162,000	0	0	0
- Exisiting/Undeveloped	0	ha	2,184,000	648,000	0	0	0
- New/Undeveloped	0	ha	2,184,000	648,000	0	0	0

Table 5.12.5 (4/4) FINANCIAL COST OF KAMPAR KANAN WATER SUPPLY PROJECT
- RANTAUBERANGIN IRRIGATION SYSTEM CONSTRUCTION WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
II. Compensation Cost					0	2,500	2,500
1. Land Acquisition					0	420	420
a. Left Bank (L=84 km)					0	420	420
- Right of Way	140.0	ha	0	3,000,000	0	420	420
b. Right Bank (L=0 km)					0	0	0
- Right of Way	0.0	ha	0	3,000,000	0	0	0
2. Compensation					0	2,080	2,080
a. Left Bank (L=84 km)					0	2,080	2,080
- Permanent House	150	unit	0	12,000,000	0	1,800	1,800
- Semi-Permanent	70	unit	0	4,000,000	0	280	280
b. Right Bank (L=0 km)					0	0	0
- Permanent House	0	unit	0	12,000,000	0	0	0
- Semi-Permanent	0	unit	0	4,000,000	0	0	0
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	3,132	3,132
IV. Engineering Cost (10% of Item I)					3,916	2,098	6,013
V. Physical Contigency (10% of Items I, II & IV)					4,307	2,557	6,865
VI. Total (Items I to V)					47,382	31,262	78,644
VII. Value Added Tax (10% of Item VI)					0	7,864	7,864
VIII. Grand Total					47,382	39,126	86,509

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.6 (1/2) FINANCIAL COST OF KAMPAR KANAN RIVER IMPROVEMENT PROJECT
- BANGKINANG AREA RIVER IMPROVEMENT WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					104,888	71,183	176,071
1. Preparatory Works (10% of Item 2)					9,535	6,471	16,006
2. Main Civil Works					95,353	64,711	160,064
a. Dredging/Excavation	5,600,000	cu m	5,200	1,300	29,120	7,280	36,400
b. Earth Dike					11,152	10,910	22,062
- Stripping/Clearing	1,970,000	sq m	0	1,200	0	2,364	2,364
- Embankment	4,170,000	cu m	2,600	1,000	10,842	4,170	15,012
- Sodding	1,551,000	sq m	200	1,800	310	2,792	3,102
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	44,000	cu m	0	36,000	0	1,584	1,584
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					29,207	22,950	52,157
- Type A	8	unit	355,000,000	279,000,000	2,840	2,232	5,072
- Type B	5	unit	587,000,000	462,000,000	2,935	2,310	5,245
- Type C	8	unit	896,000,000	704,000,000	7,168	5,632	12,800
- Type D	8	unit	1,109,000,000	871,000,000	8,872	6,968	15,840
- Type E	4	unit	1,848,000,000	1,452,000,000	7,392	5,808	13,200
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					3,901	6,762	10,663
- Low Water Channel	113,000	sq m	27,000	47,000	3,051	5,311	8,362
- High Water Channel	35,400	sq m	24,000	41,000	850	1,451	2,301
f. Groin	57	set	33,000,000	32,000,000	1,881	1,824	3,705
g. Bridge					4,200	4,200	8,400
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	4,200	sq m	1,000,000	1,000,000	4,200	4,200	8,400
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	15,892	10,785	26,677
II. Compensation Cost					0	2,591	2,591
1. Land Acquisition	197	ha	0	3,000,000	0	591	591
2. Compensation					0	2,000	2,000
a. Permanent House	100	unit	0	12,000,000	0	1,200	1,200
b. Semi-Permanent	200	unit	0	4,000,000	0	800	800
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	8,933	8,933
IV. Engineering Cost (10% of Item I)					10,489	7,118	17,607
V. Physical Contingency (10% of Items I, II & IV)					11,538	8,089	19,627
VI. Total (Items I to V)					126,915	97,914	224,829
VII. Value Added Tax (10% of Item VI)					0	22,483	22,483
VIII. Grand Total					126,915	120,397	247,312

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.6 (2/2) FINANCIAL COST OF KAMPAR KANAN RIVER IMPROVEMENT PROJECT
- BANGKINANG AREA RIVER IMPROVEMENT WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C.	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					37,302	36,097	73,399
1. Preparatory Works (10% of Item 2)					3,391	3,282	6,673
2. Main Civil Works					33,911	32,815	66,726
a. Dredging/Excavation	0	cu m	5,200	1,300	0	0	0
b. Earth Dike					27,861	26,665	54,526
- Stripping/Clearing	880,000	sq m	0	1,200	0	1,056	1,056
- Embankment	3,720,000	cu m	7,400	2,200	27,528	8,184	35,712
- Sodding	1,663,000	sq m	200	1,800	333	2,993	3,326
- Filter	292,000	cu m	0	44,000	0	12,848	12,848
- Gravel Metaling	44,000	cu m	0	36,000	0	1,584	1,584
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					0	0	0
- Type A	0	unit	355,000,000	279,000,000	0	0	0
- Type B	0	unit	587,000,000	462,000,000	0	0	0
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					398	681	1,079
- Low Water Channel	0	sq m	27,000	47,000	0	0	0
- High Water Channel	16,600	sq m	24,000	41,000	398	681	1,079
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					0	0	0
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	0	sq m	1,000,000	1,000,000	0	0	0
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	5,652	5,469	11,121
II. Compensation Cost					0	2,000	2,000
1. Land Acquisition	160	ha	0	3,000,000	0	480	480
2. Compensation					0	1,520	1,520
a. Permanent House	60	unit	0	12,000,000	0	720	720
b. Semi-Permanent	200	unit	0	4,000,000	0	800	800
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	3,770	3,770
IV. Engineering Cost (10% of Item I)					3,730	3,610	7,340
V. Physical Contingency (10% of Items I, II & IV)					4,103	4,171	8,274
VI. Total (Items I to V)					45,135	49,647	94,782
VII. Value Added Tax (10% of Item VI)					0	9,478	9,478
VIII. Grand Total					45,135	59,125	104,260

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.7 (1/2) FINANCIAL COST OF KAMPAR KANAN RIVER IMPROVEMENT PROJECT
- LOWER KAMPAR KANAN RIVER IMPROVEMENT WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					179,137	105,216	284,353
1. Preparatory Works (10% of Item 2)					16,285	9,565	25,850
2. Main Civil Works					162,852	95,651	258,503
a. Dredging/Excavation	12,460,000	cu m	5,200	1,300	64,792	16,198	80,990
b. Earth Dike					24,874	19,611	44,485
- Stripping/Clearing	3,224,000	sq m	0	1,200	0	3,869	3,869
- Embankment	9,365,000	cu m	2,600	1,000	24,349	9,365	33,714
- Sodding	2,623,000	sq m	200	1,800	525	4,721	5,246
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	46,000	cu m	0	36,000	0	1,656	1,656
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					32,819	25,789	58,608
- Type A	1	unit	355,000,000	279,000,000	355	279	634
- Type B	6	unit	587,000,000	462,000,000	3,522	2,772	6,294
- Type C	6	unit	896,000,000	704,000,000	5,376	4,224	9,600
- Type D	6	unit	1,109,000,000	871,000,000	6,654	5,226	11,880
- Type E	8	unit	1,848,000,000	1,452,000,000	14,784	11,616	26,400
- Type F	1	unit	2,128,000,000	1,672,000,000	2,128	1,672	3,800
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					6,795	11,791	18,586
- Low Water Channel	209,000	sq m	27,000	47,000	5,643	9,823	15,466
- High Water Channel	48,000	sq m	24,000	41,000	1,152	1,968	3,120
f. Groin	110	set	33,000,000	32,000,000	3,630	3,520	7,150
g. Bridge					2,800	2,800	5,600
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	2,800	sq m	1,000,000	1,000,000	2,800	2,800	5,600
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	27,142	15,942	43,084
II. Compensation Cost					0	3,200	3,200
1. Land Acquisition	400	ha	0	3,000,000	0	1,200	1,200
2. Compensation					0	2,000	2,000
a. Permanent House	150	unit	0	12,000,000	0	1,800	1,800
b. Semi-Permanent	50	unit	0	4,000,000	0	200	200
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	14,378	14,378
IV. Engineering Cost (10% of Item I)					17,914	10,522	28,435
V. Physical Contingency (10% of Items I, II & IV)					19,705	11,894	31,599
VI. Total (Items I to V)					216,755	145,209	361,965
VII. Value Added Tax (10% of Item VI)					0	36,196	36,196
VIII. Grand Total					216,755	181,406	398,161

Note ; *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.7 (2/2) FINANCIAL COST OF KAMPAR KANAN RIVER IMPROVEMENT PROJECT
- LOWER KAMPAR KANAN RIVER IMPROVEMENT WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mil. Rp.)	L.C. (Mil. Rp.)	Total (Mil. Rp.)
I. Construction Base Cost					46,237	38,895	85,132
1. Preparatory Works (10% of Item 2)					4,203	3,536	7,739
2. Main Civil Works					42,033	35,359	77,393
a. Dredging/Excavation	0	cu m	5,200	1,300	0	0	0
b. Earth Dike					34,500	28,564	63,064
- Stripping/Clearing	734,000	sq m	0	1,200	0	881	881
- Embankment	4,627,000	cu m	7,400	2,200	34,240	10,179	44,419
- Sodding	1,300,000	sq m	200	1,800	260	2,340	2,600
- Filter	307,000	cu m	0	44,000	0	13,508	13,508
- Gravel Metaling	46,000	cu m	0	36,000	0	1,656	1,656
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					0	0	0
- Type A	0	unit	355,000,000	279,000,000	0	0	0
- Type B	0	unit	587,000,000	462,000,000	0	0	0
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					528	902	1,430
- Low Water Channel	0	sq m	27,000	47,000	0	0	0
- High Water Channel	22,000	sq m	24,000	41,000	528	902	1,430
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					0	0	0
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	0	sq m	1,000,000	1,000,000	0	0	0
h. Miscellaneous (20% of a to g)	1	ls.	0	0	7,006	5,893	12,899
II. Compensation Cost					0	699	699
1. Land Acquisition	73	ha	0	3,000,000	0	219	219
2. Compensation					0	480	480
a. Permanent House	30	unit	0	12,000,000	0	360	360
b. Semi-Permanent	30	unit	0	4,000,000	0	120	120
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	4,292	4,292
IV. Engineering Cost (10% of Item I)					4,624	3,890	8,513
V. Physical Contingency (10% of Items I, II & IV)					5,086	4,348	9,434
VI. Total (Items I to V)					55,946	52,124	108,070
VII. Value Added Tax (10% of Item VI)					0	10,807	10,807
VIII. Grand Total					55,946	62,931	118,877

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.8 (1/2) FINANCIAL COST OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT
- KAMPAR KIRI NO. 1 DAM CONSTRUCTION WORKS -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					313,881	152,498	466,379
1. Preparatory Works (10% of Items 2 & 3)					15,124	11,925	27,049
2. Access Road					3,354	4,356	7,710
a. New Road	12,000	m	160,000	240,000	1,920	2,880	4,800
b. Road Widening	10,000	m	8,400	12,600	84	126	210
c. Bridge	180	m	7,500,000	7,500,000	1,350	1,350	2,700
3. Main Civil Works					147,891	114,893	262,784
a. Diversion Tunnel					30,315	20,242	50,557
- Open Excavation	116,000	cu m	8,600	6,400	998	742	1,740
- Tunnel Excavation	82,900	cu m	180,000	120,000	14,922	9,948	24,870
- Concrete Lining (Reinforced)	17,800	cu m	360,000	240,000	6,408	4,272	10,680
- Grouting	400	ton	2,480,000	1,520,000	992	608	1,600
- Others (30%)	1	l.s.	0	0	6,996	4,671	11,667
b. Dam					73,022	48,968	121,990
- Open Excavation	500,000	cu m	8,600	6,400	4,300	3,200	7,500
- Embankment	4,600,000	cu m	13,200	8,800	60,720	40,480	101,200
- Grouting	550	ton	2,480,000	1,520,000	1,364	836	2,200
- Others (10%)	1	l.s.	0	0	6,638	4,452	11,090
c. Spillway					32,812	33,423	66,235
- Open Excavation	1,250,000	cu m	8,600	6,400	10,750	8,000	18,750
- Excavation, Dam Embankment	0	cu m	0	0	0	0	0
- Concrete, Spillway (Reinforced)	115,000	cu m	126,000	154,000	14,490	17,710	32,200
- Others (30%)	1	l.s.	0	0	7,572	7,713	15,285
d. River Outlet					3,070	3,319	6,389
- Open Excavation	9,700	cu m	8,600	6,400	83	62	146
- Shaft Excavation	1,800	cu m	114,000	86,000	205	155	360
- Concrete, Valve House (Reinforced)	8,700	cu m	148,500	181,500	1,292	1,579	2,871
- Concrete, Shaft Lining (Reinforced)	320	cu m	157,500	192,500	50	62	112
- Mass Concrete, Plug	11,600	cu m	100,000	100,000	1,160	1,160	2,320
- Others (10%)	1	l.s.	0	0	279	302	581
e. Penstock					699	653	1,352
- Random Backfill	13,800	cu m	4,000	1,000	55	14	69
- Concrete, Backfill	5,800	cu m	100,000	100,000	580	580	1,160
- Others (10%)	1	l.s.	0	0	64	59	123
f. Powerhouse and Tailrace					7,869	8,180	16,049
- Open Excavation	76,000	cu m	8,600	6,400	654	486	1,140
- Concrete, Powerhouse (Reinforced)	37,500	cu m	144,000	156,000	5,400	5,850	11,250
- Finishing Work	4,000	cu m	275,000	275,000	1,100	1,100	2,200
- Others (10%)	1	l.s.	0	0	715	744	1,459

Table 5.12.8 (2/2) FINANCIAL COST OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT
- KAMPAR KIRI NO.1 DAM CONSTRUCTION WORKS -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
g. Switchyard					103	109	212
- Open Excavation	1,200	cu m	8,600	6,400	10	8	18
- Concrete, Switchyard (Reinforced)	700	cu m	120,000	130,000	84	91	175
- Others (10%)	1	l.s.	0	0	9	10	19
4. Hydro-Mechanical Works					37,472	4,164	41,635
a. Diversion Tunnel Gates (Slide)	40	ton	9,900,000	1,100,000	396	44	440
b. Spillway Gates (Radial)	1,060	ton	13,500,000	1,500,000	14,310	1,590	15,900
c. River Outlet Intake Gate (slide)	140	ton	13,500,000	1,500,000	1,890	210	2,100
d. River Outlet Main Valve	1	l.s.	0	0	1,512	168	1,680
e. River Outlet Guard Valve	1	l.s.	0	0	504	56	560
f. Power Tailrace Gate	160	ton	9,900,000	1,100,000	1,584	176	1,760
g. River Outlet Steel Pipe	30	ton	9,900,000	1,100,000	297	33	330
h. Power Intake Screen	15	ton	9,900,000	1,100,000	149	17	165
i. Power Steel Penstock	1,700	ton	9,900,000	1,100,000	16,830	1,870	18,700
5. Turbines, Generators & GIS	1	l.s.	0	0	94,500	10,500	105,000
6. Transmission Line	1	l.s.	0	0	15,540	6,660	22,200
II. Compensation Cost	1	l.s.	0	0	0	6,000	6,000
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	23,619	23,619
IV. Engineering Cost (10% of Item I)					31,388	15,250	46,638
V. Physical Contigency (10% of Items I, II & IV)					34,527	17,375	51,902
VI. Total (Items I to V)					379,796	214,741	594,537
VII. Value Added Tax (10% of Item VI)					0	59,454	59,454
VIII. Grand Total					379,796	274,195	653,991

Note : *1 Figures may not add up to totals due to rounding
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.9 (1/2) FINANCIAL COST OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT
- KAMPAR KIRI NO.2 DAM CONSTRUCTION WORKS -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					131,048	83,877	214,925
1. Preparatory Works (10% of Items 2 & 3)					7,237	6,938	14,174
2. Access Road					1,430	1,769	3,199
a. New Road	4,000	m	160,000	240,000	640	960	1,600
b. Road Widening	5,500	m	7,200	10,800	40	59	99
c. Bridge	100	m	7,500,000	7,500,000	750	750	1,500
3. Main Civil Works					70,936	67,609	138,544
a. Diversion Tunnel					7,971	5,327	13,297
- Open Excavation	17,900	cu m	8,600	6,400	154	115	269
- Tunnel Excavation	27,200	cu m	180,000	120,000	4,896	3,264	8,160
- Concrete Lining (Reinforced)	6,100	cu m	360,000	240,000	2,196	1,464	3,660
- Others (10%)	1	l.s.	0	0	725	484	1,209
b. Cofferdam					1,410	1,328	2,737
- Open Excavation	15,400	cu m	8,600	6,400	132	99	231
- Embankment (Initial Coffer)	8,100	cu m	15,000	10,000	122	81	203
- Mass Concrete (Second Coffer)	13,700	cu m	75,000	75,000	1,028	1,028	2,055
- Others (10%)	1	l.s.	0	0	128	121	249
c. Main Dam and Spillway					57,209	56,630	113,839
- Open Excavation	290,000	cu m	8,600	6,400	2,494	1,856	4,350
- Mass Concrete, Dam	590,000	cu m	75,000	75,000	44,250	44,250	88,500
- Concrete, Spillway (Reinforced)	28,000	cu m	126,000	154,000	3,528	4,312	7,840
- Grouting	700	ton	2,480,000	1,520,000	1,736	1,064	2,800
- Others (10%)	1	l.s.	0	0	5,201	5,148	10,349
d. Penstock					0	0	0
- Random Backfill	0	cu m	4,000	1,000	0	0	0
- Concrete, Backfill	0	cu m	100,000	100,000	0	0	0
- Others (10%)	0	l.s.	0	0	0	0	0
e. Powerhouse and Tailrace					4,101	4,074	8,176
- Open Excavation	98,500	cu m	8,600	6,400	847	630	1,478
- Concrete, Powerhouse (Reinforced)	16,000	cu m	144,000	156,000	2,304	2,496	4,800
- Finishing Work	2,100	sq m	275,000	275,000	578	578	1,155
- Others (10%)	1	l.s.	0	0	373	370	743
f. Switchyard					245	250	495
- Open Excavation	5,000	cu m	8,600	6,400	43	32	75
- Concrete, Switchyard (Reinforced)	1,500	cu m	120,000	130,000	180	195	375
- Others (10%)	1	l.s.	0	0	22	23	45

Table 5.12.9 (2/2) FINANCIAL COST OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT
- KAMPAR KIRI NO.2 DAM CONSTRUCTION WORKS -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
4. Hydro-Mechanical Works					4,506	501	5,007
a. Diversion Tunnel Gates (Slide)	20	ton	9,900,000	1,100,000	198	22	220
b. Spillway Gates (Radial)	0	ton	13,500,000	1,500,000	0	0	0
c. River Outlet Intake Screen	2	ton	9,900,000	1,100,000	20	2	22
d. River Outlet Gate (Roller)	2	ton	13,500,000	1,500,000	27	3	30
e. River Outlet Main Valve	1	l.s.	0	0	657	73	730
f. River Outlet Steel Pipe	20	ton	9,900,000	1,100,000	198	22	220
g. Power Intake Screen	10	ton	9,900,000	1,100,000	99	11	110
h. Power Intake Gate (Roller)	25	ton	13,500,000	1,500,000	338	38	375
i. Power Tailrace Gate (Roller)	40	ton	9,900,000	1,100,000	396	44	440
j. Power Steel Penstock	260	ton	9,900,000	1,100,000	2,574	286	2,860
5. Turbines, Generators & GIS	1	l.s.	0	0	41,130	4,570	45,700
6. Transmission Line	1	l.s.	0	0	5,810	2,490	8,300
II. Compensation Cost	1	l.s.	0	0	0	3,000	3,000
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	10,896	10,896
IV. Engineering Cost (10% of Item I)					13,105	8,388	21,492
V. Physical Contigency (10% of Items I, II & IV)					14,415	9,526	23,942
VI. Total (Items I to V)					158,568	115,687	274,255
VII. Value Added Tax (10% of Item VI)					0	27,426	27,426
VIII. Grand Total					158,568	143,113	301,681

Note : *1 Figures may not add up to totals due to rounding
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.10 FINANCIAL COST OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT
- KAMPAR KIRI RIVER IMPROVEMENT WORKS -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					41,416	18,889	60,305
1. Preparatory Works (10% of Item 2)					3,765	1,717	5,482
2. Main Civil Works					37,651	17,172	54,823
a. Dredging/Excavation	4,680,000	cu m	5,200	1,300	24,336	6,084	30,420
b. Earth Dike					2,949	7,801	10,750
- Stripping/Clearing	606,000	sq m	0	1,200	0	727	727
- Embankment	1,099,000	cu m	2,600	1,000	2,857	1,099	3,956
- Sodding	457,000	sq m	200	1,800	91	823	914
- Filter	104,000	cu m	0	44,000	0	4,576	4,576
- Gravel Metaling	16,000	cu m	0	36,000	0	576	576
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					3,845	0	3,845
- Type A	5	unit	355,000,000	279,000,000	1,775	1,395	3,170
- Type B	2	unit	587,000,000	462,000,000	1,174	924	2,098
- Type C	1	unit	896,000,000	704,000,000	896	704	1,600
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					246	425	671
- Low Water Channel	6,300	sq m	27,000	47,000	170	296	466
- High Water Channel	3,150	sq m	24,000	41,000	76	129	205
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					0	0	0
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	0	sq m	1,000,000	1,000,000	0	0	0
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	6,275	2,862	9,137
II. Compensation Cost					0	261	261
1. Land Acquisition	87	ha	0	3,000,000	0	261	261
2. Compensation					0	0	0
a. Permanent House	0	unit	0	12,000,000	0	0	0
b. Semi-Permanent	0	unit	0	4,000,000	0	0	0
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	3,028	3,028
IV. Engineering Cost (10% of Item I)					4,142	1,889	6,030
V. Physical Contingency (10% of Items I, II & IV)					4,556	2,104	6,660
VI. Total (Items I to V)					50,113	26,171	76,284
VII. Value Added Tax (10% of Item VI)					0	7,628	7,628
VIII. Grand Total					50,113	33,800	83,913

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.11 FINANCIAL COST OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT
- KAMPAR RIVER IMPROVEMENT WORKS -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					355,060	199,066	554,127
1. Preparatory Works (10% of Item 2)					32,278	18,097	50,375
2. Main Civil Works					322,782	180,969	503,752
a. Dredging/Excavation	31,150,000	cu m	5,200	1,300	161,980	40,495	202,475
b. Earth Dike					59,577	67,507	127,084
- Stripping/Clearing	6,750,000	sq m	0	1,200	0	8,100	8,100
- Embankment	22,480,000	cu m	2,600	1,000	58,448	22,480	80,928
- Sodding	5,646,000	sq m	200	1,800	1,129	10,163	11,292
- Filter	542,000	cu m	0	44,000	0	23,848	23,848
- Gravel Metaling	81,000	cu m	0	36,000	0	2,916	2,916
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					38,326	30,111	68,437
- Type A	2	unit	355,000,000	279,000,000	710	558	1,268
- Type B	1	unit	587,000,000	462,000,000	587	462	1,049
- Type C	5	unit	896,000,000	704,000,000	4,480	3,520	8,000
- Type D	9	unit	1,109,000,000	871,000,000	9,981	7,839	17,820
- Type E	4	unit	1,848,000,000	1,452,000,000	7,392	5,808	13,200
- Type F	1	unit	2,128,000,000	1,672,000,000	2,128	1,672	3,800
- Type G	4	unit	2,520,000,000	1,980,000,000	10,080	7,920	18,000
- Type H	1	unit	2,968,000,000	2,332,000,000	2,968	2,332	5,300
e. Revetment					4,902	8,495	13,397
- Low Water Channel	138,000	sq m	27,000	47,000	3,726	6,486	10,212
- High Water Channel	49,000	sq m	24,000	41,000	1,176	2,009	3,185
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					4,200	4,200	8,400
- Foorbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	4,200	sq m	1,000,000	1,000,000	4,200	4,200	8,400
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	53,797	30,162	83,959
II. Compensation Cost					0	3,310	3,310
1. Land Acquisition	810	ha	0	3,000,000	0	2,430	2,430
2. Compensation					0	880	880
a. Permanent House	60	unit	0	12,000,000	0	720	720
b. Semi-Permanent	40	unit	0	4,000,000	0	160	160
III. Administration Cost (5% of Items I to II, allotted to L.C. only)					0	27,872	27,872
IV. Engineering Cost (10% of Total of Items 1 & 2)					35,506	19,907	55,413 0
V. Physical Contingency (10% of Items I, II & IV)					39,057	22,228	0 61,285
VI. Total (Items I to V)					429,623	272,383	0 702,006
VII. Value Added Tax (10% of Item VI)					0	70,201	0 70,201
VIII. Grand Total					429,623	342,584	0 772,207

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.12 (1/2) FINANCIAL COST OF KUANTAN RIVER MULTIPURPOSE DEVELOPMENT PROJECT
- KUANTAN DAM CONSTRUCTION WORKS -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					212,377	112,984	325,360
1. Preparatory Works (10% of Items 2 & 3)					9,454	8,970	18,425
2.. Access Road					5,600	8,400	14,000
a. Road	35,000	m	160,000	240,000	5,600	8,400	14,000
b. Bridge	0	m	7,500,000	7,500,000	0	0	0
3. Main Civil Works					88,942	81,304	170,246
a. Diversion Tunnel					26,571	17,758	44,329
- Open Excavation	60,600	cu m	8,600	6,400	521	388	909
- Tunnel Excavation	107,300	cu m	180,000	120,000	19,314	12,876	32,190
- Concrete Lining (Reinforced)	12,000	cu m	360,000	240,000	4,320	2,880	7,200
- Others (10%)	1	l.s.	0	0	2,416	1,614	4,030
b. Cofferdam					3,212	2,932	6,143
- Embankment (Initial Coffer)	51,300	cu m	15,000	10,000	770	513	1,283
- Open Excavation	9,600	cu m	8,600	6,400	83	61	144
- Mass Concrete (Second Coffer)	28,500	cu m	75,000	75,000	2,138	2,138	4,275
- Others (10%)	1	l.s.	0	0	222	220	442
c. Main Dam and Spillway					47,449	48,174	95,623
- Open Excavation	450,000	cu m	8,600	6,400	3,870	2,880	6,750
- Mass Concrete, Dam	382,000	cu m	75,000	75,000	28,650	28,650	57,300
- Concrete, Spillway (Reinforced)	75,000	cu m	126,000	154,000	9,450	11,550	21,000
- Grouting	470	ton	2,480,000	1,520,000	1,166	714	1,880
- Others (10%)	1	l.s.	0	0	4,314	4,379	8,693
d. Penstock					0	0	0
- Random Backfill	0	cu m	4,000	1,000	0	0	0
- Concrete, Backfill	0	cu m	100,000	100,000	0	0	0
- Others (10%)	0	l.s.	0	0	0	0	0
e. Powerhouse and Tailrace					11,471	12,190	23,661
- Open Excavation	50,000	cu m	8,600	6,400	430	320	750
- Concrete, Powerhouse (Reinforced)	63,700	cu m	144,000	156,000	9,173	9,937	19,110
- Finishing Work	3,000	sq m	275,000	275,000	825	825	1,650
- Others (10%)	1	l.s.	0	0	1,043	1,108	2,151
f. Switchyard					240	250	490
- Open Excavation	3,000	cu m	8,600	6,400	26	19	45
- Concrete, Switchyard (Reinforced)	1,600	cu m	120,000	130,000	192	208	400
- Others (10%)	1	l.s.	0	0	22	23	45

Table 5.12.12 (2/2) FINANCIAL COST OF KUANTAN RIVER MULTIPURPOSE DEVELOPMENT PROJECT
- KUANTAN DAM CONSTRUCTION WORKS -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
4. Hydro-Mechanical Works					34,191	3,799	37,990
a. Diversion Tunnel Gates (Slide)	220	ton	9,900,000	1,100,000	2,178	242	2,420
b. Spillway Gates (Radial)	1,280	ton	13,500,000	1,500,000	17,280	1,920	19,200
c. River Outlet Intake Screen	10	ton	9,900,000	1,100,000	99	11	110
d. River Outlet Gate (Roller)	20	ton	13,500,000	1,500,000	270	30	300
e. River Outlet Main Valve	1	l.s.	0	0	1,980	220	2,200
f. River Outlet Steel Pipe	30	ton	9,900,000	1,100,000	297	33	330
g. Power Intake Screen	50	ton	9,900,000	1,100,000	495	55	550
h. Power Intake Gate (Roller)	250	ton	13,500,000	1,500,000	3,375	375	3,750
i. Power Tailrace Gate (Roller)	220	ton	9,900,000	1,100,000	2,178	242	2,420
j. Power Steel Penstock	610	ton	9,900,000	1,100,000	6,039	671	6,710
5. Turbines, Generators & GIS	1	l.s.	0	0	67,050	7,450	74,500
6. Transmission Line	1	l.s.	0	0	7,140	3,060	10,200
II. Compensation Cost	1	l.s.	0	0	0	12,900	12,900
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	16,913	16,913
IV. Engineering Cost (10% of Item I)					21,238	11,298	32,536
V. Physical Contigency (10% of Items I, II & IV)					23,361	13,718	37,080
VI. Total (Items I to V)					256,976	167,813	424,789
VII. Value Added Tax (10% of Item VI)					0	42,479	42,479
VIII. Grand Total					256,976	210,292	467,268

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.13 (1/4) FINANCIAL COST OF KUANTAN RIVER MULTIPURPOSE DEVELOPMENT PROJECT
- LUBUKJAMBI INTAKE WEIR / IRRIGATION SYSTEM CONSTRUCTION WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					83,133	47,273	130,406
1. Preparatory Works (10% of Item 2)					7,558	4,298	11,855
2. Irrigation Facilities					75,575	42,976	118,551
a. Head Works					41,464	20,632	62,096
- Excavation	814,000	cu m	8,000	2,000	6,512	1,628	8,140
- Backfill	18,000	cu m	7,200	1,800	130	32	162
- Embankment	800	cu m	9,600	2,400	8	2	10
- Weir					26,320	15,417	41,737
Concrete	13,200	cu m	285,000	285,000	3,762	3,762	7,524
Apron	10,130	sq m	80,000	120,000	810	1,216	2,026
Riverbed Protection	6,190	sq m	0	120,000	0	743	743
Gate	553	sq m	35,000,000	15,000,000	19,355	8,295	27,650
Foundation Works	1	l.s.	0	0	2,393	1,402	3,794
Temporary Coffer	0	l.s.	0	0	0	0	0
- Intake					3,835	1,802	5,636
Concrete	1,200	cu m	210,000	210,000	252	252	504
Gate	84	sq m	38,500,000	16,500,000	3,234	1,386	4,620
Foundation Works	1	l.s.	0	0	349	164	512
- Flushing Gate					2,603	1,224	3,827
Concrete	820	cu m	210,000	210,000	172	172	344
Gate	57	sq m	38,500,000	16,500,000	2,195	941	3,135
Foundation Works	1	l.s.	0	0	237	111	348
- Steel Stop Log	85	ton	910,000	390,000	77	33	111
- Control Bridge	1,142	sq m	1,700,000	300,000	1,941	343	2,284
- Control House	315	sq m	120,000	480,000	38	151	189
b. Head Reach & Main Canal					17,897	17,533	35,431
- Left Bank (L=76 km)					17,897	17,533	35,431
Exacavation	1,254,000	cu m	4,800	1,200	6,019	1,505	7,524
Embankment	35,000	cu m	3,600	900	126	32	158
Concrete Lining	60,800	cu m	137,700	137,700	8,372	8,372	16,744
Footing	76,000	cu m	0	60,200	0	4,575	4,575
Expansion Joint	87,000	m	36,800	1,200	3,202	104	3,306
Weep Hole	1,500	unit	800	17,600	1	26	28
Gravel Metaling	45,600	cu m	0	60,200	0	2,745	2,745
Regulation Ponds	1	l.s.	0	0	177	174	351
- Right Bank (L=0 km)					0	0	0
Exacavation	0	cu m	4,800	1,200	0	0	0
Embankment	0	cu m	3,600	900	0	0	0
Concrete Lining	0	cu m	137,700	137,700	0	0	0
Footing	0	cu m	0	60,200	0	0	0
Expansion Joint	0	m	36,800	1,200	0	0	0
Weep Hole	0	unit	800	17,600	0	0	0
Gravel Metaling	0	cu m	0	60,200	0	0	0
Regulation Ponds	0	l.s.	0	0	0	0	0
c. Left Bank Irrigation System					16,214	4,811	21,025
- Existing/Rainfed	376	ha	546,000	162,000	205	61	266
- Existing/Undeveloped	2,096	ha	2,184,000	648,000	4,578	1,358	5,936
- New/Undeveloped	5,234	ha	2,184,000	648,000	11,431	3,392	14,823
d. Right Bank Irrigation System	0	ha	0	0	0	0	0

Table 5.12.13 (2/4) FINANCIAL COST OF KUANTAN RIVER MULTIPURPOSE DEVELOPMENT PROJECT
- LUBUKJAMBI INTAKE WEIR / IRRIGATION SYSTEM CONSTRUCTION WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
II. Compensation Cost					0	4,380	4,380
1. Land Acquisition					0	780	780
a. Left Bank (L=76 km)					0	780	780
- Right of Way	260.0	ha	0	3,000,000	0	780	780
b. Right Bank (L=0 km)					0	0	0
- Right of Way	0	ha	0	3,000,000	0	0	0
2. Compensation					0	3,600	3,600
a. Left Bank (L=76 km)					0	3,600	3,600
- Permanent House	250	unit	0	12,000,000	0	3,000	3,000
- Semi-Permanent	150	unit	0	4,000,000	0	600	600
b. Right Bank (L=0 km)					0	0	0
- Permanent House	0	unit	0	12,000,000	0	0	0
- Semi-Permanent	0	unit	0	4,000,000	0	0	0
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	6,739	6,739
IV. Engineering Cost (10% of Item I)					8,313	4,727	13,041
V. Physical Contigency (10% of Items I, II & IV)					9,145	5,638	14,783
VI. Total (Items I to V)					100,591	68,758	169,349
VII. Value Added Tax (10% of Item VI)					0	16,935	16,935
VIII. Grand Total					100,591	85,693	186,284

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.13 (3/4) FINANCIAL COST OF KUANTAN RIVER MULTIPURPOSE DEVELOPMENT PROJECT
- LUBUKJAMBI INTAKE WEIR / IRRIGATION SYSTEM CONSTRUCTION WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					120,775	66,505	187,280
1. Preparatory Works (10% of Item 2)					10,980	6,046	17,025
2. Irrigation Facilities					109,795	60,459	170,254
a. Head Works					0	0	0
- Excavation	0	cu m	8,000	2,000	0	0	0
- Backfill	0	cu m	7,200	1,800	0	0	0
- Embankment	0	cu m	9,600	2,400	0	0	0
- Weir					0	0	0
Concrete	0	cu m	285,000	285,000	0	0	0
Apron	0	sq m	80,000	120,000	0	0	0
Riverbed Protection	0	sq m	0	120,000	0	0	0
Gate	0	sq m	35,000,000	15,000,000	0	0	0
Foundation Works	0	l.s.	0	0	0	0	0
Temporary Coffer	0	l.s.	0	0	0	0	0
- Intake					0	0	0
Concrete	0	cu m	210,000	210,000	0	0	0
Gate	0	sq m	38,500,000	16,500,000	0	0	0
Foundation Works	0	l.s.	0	0	0	0	0
- Flushing Gate					0	0	0
Concrete	0	cu m	210,000	210,000	0	0	0
Gate	0	sq m	38,500,000	16,500,000	0	0	0
Foundation Works	0	l.s.	0	0	0	0	0
- Steel Stop Log	0	ton	910,000	390,000	0	0	0
- Control Bridge	0	sq m	1,700,000	300,000	0	0	0
- Control House	0	sq m	120,000	480,000	0	0	0
b. Head Reach & Main Canal					67,842	48,011	115,854
- Left Bank (L=119 km)					29,412	18,490	47,902
Exacavation	2,300,000	cu m	4,800	1,200	11,040	2,760	13,800
Embankment	691,000	cu m	3,600	900	2,488	622	3,110
Concrete Lining	59,500	cu m	137,700	137,700	8,193	8,193	16,386
Footing	81,000	cu m	0	60,200	0	4,876	4,876
Expansion Joint	201,000	m	36,800	1,200	7,397	241	7,638
Weep Hole	3;500	unit	800	17,600	3	62	64
Gravel Metaling	25,800	cu m	0	60,200	0	1,553	1,553
Regulation Ponds	1	l.s.	0	0	291	183	474
- Right Bank (L=123 km)					38,431	29,521	67,952
Exacavation	2,380,000	cu m	4,800	1,200	11,424	2,856	14,280
Embankment	585,000	cu m	3,600	900	2,106	527	2,633
Concrete Lining	98,400	cu m	137,700	137,700	13,550	13,550	27,099
Footing	123,000	cu m	0	60,200	0	7,405	7,405
Expansion Joint	298,000	m	36,800	1,200	10,966	358	11,324
Weep Hole	5,200	unit	800	17,600	4	92	96
Gravel Metaling	73,800	cu m	0	60,200	0	4,443	4,443
Regulation Ponds	1	l.s.	0	0	381	292	673
c. Left Bank Irrigation System					16,688	4,951	21,639
- Existing/Rainfed	0	ha	546,000	162,000	0	0	0
- Existing/Undeveloped	0	ha	2,184,000	648,000	0	0	0
- New/Undeveloped	7,641	ha	2,184,000	648,000	16,688	4,951	21,639
d. Right Bank Irrigation System					25,265	7,496	32,761
- Existing/Rainfed	65	ha	546,000	162,000	35	11	46
- Existing/Undeveloped	650	ha	2,184,000	648,000	1,420	421	1,841
- New/Undeveloped	10,902	ha	2,184,000	648,000	23,810	7,064	30,874

Table 5.12.13 (4/4) FINANCIAL COST OF KUANTAN RIVER MULTIPURPOSE DEVELOPMENT PROJECT
- LUBUKJAMBI INTAKE WEIR / IRRIGATION SYSTEM CONSTRUCTION WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
II. Compensation Cost					0	10,171	10,171
1. Land Acquisition					0	1,851	1,851
a. Left Bank (L=119 km)					0	561	561
- Right of Way	187.0	ha	0	3,000,000	0	561	561
b. Right Bank (L=123 km)					0	1,290	1,290
- Right of Way	430	ha	0	3,000,000	0	1,290	1,290
2. Compensation					0	8,320	8,320
a. Left Bank (L=119 km)					0	2,280	2,280
- Permanent House	170	unit	0	12,000,000	0	2,040	2,040
- Semi-Permanent	60	unit	0	4,000,000	0	240	240
b. Right Bank (L=123km)					0	6,040	6,040
- Permanent House	430	unit	0	12,000,000	0	5,160	5,160
- Semi-Permanent	220	unit	0	4,000,000	0	880	880
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	9,873	9,873
IV. Engineering Cost (10% of Item I)					12,077	6,650	18,728
V. Physical Contigency (10% of Items I, II & IV)					13,285	8,333	21,618
VI. Total (Items I to V)					146,138	101,531	247,669
VII. Value Added Tax (10% of Item VI)					0	24,767	24,767
VIII. Grand Total					146,138	126,298	272,436

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.14 FINANCIAL COST OF KUANTAN-INDRAGIRI RIVER IMPROVEMENT PROJECT
- LUBUKJAMBI-PERANAP AREA RIVER IMPROVEMENT WORKS -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					227,316	177,078	404,395
1. Preparatory Works (10% of Item 2)					20,665	16,098	36,763
2. Main Civil Works					206,651	160,980	367,632
a. Dredging/Excavation	15,250,000	cu m	5,200	1,300	79,300	19,825	99,125
b. Earth Dike					22,023	43,476	65,500
- Stripping/Clearing	3,704,000	sq m	0	1,200	0	4,445	4,445
- Embankment	8,253,000	cu m	2,600	1,000	21,458	8,253	29,711
- Sodding	2,828,000	sq m	200	1,800	566	5,090	5,656
- Filter	520,000	cu m	0	44,000	0	22,880	22,880
- Gravel Metaling	78,000	cu m	0	36,000	0	2,808	2,808
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					43,688	34,325	78,013
- Type A	2	unit	355,000,000	279,000,000	710	558	1,268
- Type B	5	unit	587,000,000	462,000,000	2,935	2,310	5,245
- Type C	6	unit	896,000,000	704,000,000	5,376	4,224	9,600
- Type D	15	unit	1,109,000,000	871,000,000	16,635	13,065	29,700
- Type E	7	unit	1,848,000,000	1,452,000,000	12,936	10,164	23,100
- Type F	1	unit	2,128,000,000	1,672,000,000	2,128	1,672	3,800
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	1	unit	2,968,000,000	2,332,000,000	2,968	2,332	5,300
e. Revetment					13,098	22,724	35,822
- Low Water Channel	398,000	sq m	27,000	47,000	10,746	18,706	29,452
- High Water Channel	98,000	sq m	24,000	41,000	2,352	4,018	6,370
f. Groin	300	set	33,000,000	32,000,000	9,900	9,600	19,500
g. Bridge					4,200	4,200	8,400
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	4,200	sq m	1,000,000	1,000,000	4,200	4,200	8,400
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	34,442	26,830	61,272
II. Compensation Cost					0	4,300	4,300
1. Land Acquisition	500	ha	0	3,000,000	0	1,500	1,500
2. Compensation					0	2,800	2,800
a. Permanent House	200	unit	0	12,000,000	0	2,400	2,400
b. Semi-Permanent	100	unit	0	4,000,000	0	400	400
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	20,435	20,435
IV. Engineering Cost (10% of Item I)					22,732	17,708	40,439
V. Physical Contingency (10% of Items I, II & IV)					25,005	19,909	44,913
VI. Total (Items I to V)					275,053	239,429	514,482
VII. Value Added Tax (10% of Item VI)					0	51,448	51,448
VIII. Grand Total					275,053	290,878	565,931

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.15 FINANCIAL COST OF KUANTAN-INDRAGIRI RIVER IMPROVEMENT PROJECT
- PERANAP-JAPURA AREA RIVER IMPROVEMENT WORKS -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					280,103	179,742	459,845
1. Preparatory Works (10% of Item 2)					25,464	16,340	41,804
2. Main Civil Works					254,639	163,402	418,041
a. Dredging/Excavation	11,730,000	cu m	5,200	1,300	60,996	15,249	76,245
b. Earth Dike					89,868	61,146	151,014
- Stripping/Clearing	5,152,000	sq m	0	1,200	0	6,182	6,182
- Embankment	17,800,000	cu m	5,000	1,500	89,000	26,700	115,700
- Sodding	4,342,000	sq m	200	1,800	868	7,816	8,684
- Filter	414,000	cu m	0	44,000	0	18,216	18,216
- Gravel Metaling	62,000	cu m	0	36,000	0	2,232	2,232
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					40,299	31,666	71,965
- Type A	10	unit	355,000,000	279,000,000	3,550	2,790	6,340
- Type B	5	unit	587,000,000	462,000,000	2,935	2,310	5,245
- Type C	8	unit	896,000,000	704,000,000	7,168	5,632	12,800
- Type D	6	unit	1,109,000,000	871,000,000	6,654	5,226	11,880
- Type E	6	unit	1,848,000,000	1,452,000,000	11,088	8,712	19,800
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	3	unit	2,968,000,000	2,332,000,000	8,904	6,996	15,900
e. Revetment					9,906	17,187	27,093
- Low Water Channel	302,000	sq m	27,000	47,000	8,154	14,194	22,348
- High Water Channel	73,000	sq m	24,000	41,000	1,752	2,993	4,745
f. Groin	210	set	33,000,000	32,000,000	6,930	6,720	13,650
g. Bridge					4,200	4,200	8,400
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	4,200	sq m	1,000,000	1,000,000	4,200	4,200	8,400
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	42,440	27,234	69,673
II. Compensation Cost					0	4,660	4,660
1. Land Acquisition	620	ha	0	3,000,000	0	1,860	1,860
2. Compensation					0	2,800	2,800
a. Permanent House	200	unit	0	12,000,000	0	2,400	2,400
b. Semi-Permanent	100	unit	0	4,000,000	0	400	400
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	23,225	23,225
IV. Engineering Cost (10% of Item I)					28,010	17,974	45,984
V. Physical Contingency (10% of Items I, II & IV)					30,811	20,238	51,049
VI. Total (Items I to V)					338,925	245,839	584,764
VII. Value Added Tax (10% of Item VI)					0	58,476	58,476
VIII. Grand Total					338,925	304,315	643,240

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.16 (1/2) FINANCIAL COST OF KUANTAN-INDRAGIRI RIVER IMPROVEMENT PROJECT
- RENGAT AREA FLOOD PROTECTION WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					17,937	10,405	28,342
1. Preparatory Works (10% of Item 2)					1,631	946	2,577
2. Main Civil Works					16,307	9,459	25,765
a. Dredging/Excavation	0	cu m	5,200	1,300	0	0	0
b. Earth Dike					3,542	2,133	5,675
- Stripping/Clearing	271,000	sq m	0	1,200	0	325	325
- Embankment	472,000	cu m	7,400	2,200	3,493	1,038	4,531
- Sodding	245,600	sq m	200	1,800	49	442	491
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	9,100	cu m	0	36,000	0	328	328
c. Concrete Wall Dike	1,400	m	160,000	170,000	224	238	462
d. Control Gate					1,535	1,205	2,740
- 2 spans x 2.5W x 2.0H	5	unit	307,000,000	241,000,000	1,535	1,205	2,740
e. Sluice					3,800	2,900	6,700
- Type A	0	unit	355,000,000	279,000,000	0	0	0
- Type B	0	unit	587,000,000	462,000,000	0	0	0
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
- 5 spans X 7.0W X 5.2H	1	unit	3,800,000,000	2,900,000,000	3,800	2,900	6,700
f. Drainage Pumping Station					4,070	908	4,978
- Excavation	3,200	cu m	4,200	1,000	13	3	17
- Embankment	3,400	cu m	2,300	600	8	2	10
- Reinforced Concrete	690	cu m	307,000	300,000	212	207	419
- Control House	300	sq m	90,000	370,000	27	111	138
- Foundation Treatment	1	l.s.	0	0	210	185	395
- Mechanical Works	1	l.s.	0	0	3,600	400	4,000
g. Revetment					119	207	326
- Low Water Channel	4,400	sq m	27,000	47,000	119	207	326
- High Water Channel	0	sq m	24,000	41,000	0	0	0
h. Groin	8	set	33,000,000	32,000,000	264	256	520
i. Bridge					35	35	70
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	35	sq m	1,000,000	1,000,000	35	35	70
j. Miscellaneous (20% of a to i)	1	l.s.	0	0	2,718	1,576	4,294
II. Compensation Cost					0	280	280
1. Land Acquisition	40	ha	0	3,000,000	0	120	120
2. Compensation					0	160	160
a. Permanent House	10	unit	0	12,000,000	0	120	120
b. Semi-Permanent	10	unit	0	4,000,000	0	40	40
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	1,431	1,431
IV. Engineering Cost (10% of Item I)					1,794	1,040	2,834
V. Physical Contingency (10% of Items I, II & IV)					1,973	1,173	3,146
VI. Total (Items I to V)					21,704	14,329	36,033
VII. Value Added Tax (10% of Item VI)					0	3,603	3,603
VIII. Grand Total					21,704	17,932	39,636

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.16 (2/2) FINANCIAL COST OF KUANTAN-INDRAGIRI RIVER IMPROVEMENT PROJECT
- RENGAT AREA FLOOD PROTECTION WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mil. Rp.)	Amount L.C. (Mil. Rp.)	Amount Total (Mil. Rp.)
I. Construction Base Cost					156,484	77,687	234,171
1. Preparatory Works (10% of Item 2)					14,226	7,062	21,288
2. Main Civil Works					142,258	70,625	212,882
a. Dredging/Excavation	17,600,000	cu m	5,200	1,300	91,520	22,880	114,400
b. Earth Dike					14,978	24,104	39,082
- Stripping/Clearing	2,204,000	sq m	0	1,200	0	2,645	2,645
- Embankment	5,622,000	cu m	2,600	1,000	14,617	5,622	20,239
- Sodding	1,805,000	sq m	200	1,800	361	3,249	3,610
- Filter	255,000	cu m	0	44,000	0	11,220	11,220
- Gravel Metaling	38,000	cu m	0	36,000	0	1,368	1,368
c. Concrete Wall Dike	0	m	160,000	170,000	0	0	0
d. Control Gate					0	0	0
- 2 spans x 2.5W x 2.0H	0	unit	307,000,000	241,000,000	0	0	0
e. Sluice					8,195	6,441	14,636
- Type A	5	unit	355,000,000	279,000,000	1,775	1,395	3,170
- Type B	2	unit	587,000,000	462,000,000	710	558	1,268
- Type C	2	unit	896,000,000	704,000,000	1,174	924	2,098
- Type D	3	unit	1,109,000,000	871,000,000	2,688	2,112	4,800
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	1	unit	2,128,000,000	1,672,000,000	1,848	1,452	3,300
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
- 5 spans X 7.0W X 5.2H	0	unit	3,800,000,000	2,900,000,000	0	0	0
f. Drainage Pumping Station					0	0	0
- Excavation	0	cu m	4,200	1,000	0	0	0
- Embankment	0	cu m	2,300	600	0	0	0
- Reinforced Concrete	0	cu m	307,000	300,000	0	0	0
- Control House	0	sq m	90,000	370,000	0	0	0
- Foundation Treatment	0	l.s.	0	0	0	0	0
- Mechanical Works	0	l.s.	0	0	0	0	0
g. Revetment					2,205	3,829	6,034
- Low Water Channel	71,000	sq m	27,000	47,000	1,917	3,337	5,254
- High Water Channel	12,000	sq m	24,000	41,000	288	492	780
h. Groin	50	set	33,000,000	32,000,000	1,650	1,600	3,250
i. Bridge					0	0	0
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	0	sq m	1,000,000	1,000,000	0	0	0
j. Miscellaneous (20% of a to i)	1	l.s.	0	0	23,710	11,771	35,480
II. Compensation Cost					0	1,815	1,815
1. Land Acquisition	285	ha	0	3,000,000	0	855	855
2. Compensation					0	960	960
a. Permanent House	70	unit	0	12,000,000	0	840	840
b. Semi-Permanent	30	unit	0	4,000,000	0	120	120
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	11,799	11,799
IV. Engineering Cost (10% of Item I)					15,648	7,769	23,417
V. Physical Contingency (10% of Items I, II & IV)					17,213	8,727	25,940
VI. Total (Items I to V)					189,345	107,797	297,142
VII. Value Added Tax (10% of Item VI)					0	29,714	29,714
VIII. Grand Total					189,345	137,511	326,856

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.17 (1/2) FINANCIAL COST OF UPPER INDRAGIRI RIVER IMPROVEMENT PROJECT
- PAYAKUMBUH AREA RIVER IMPROVEMENT WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					108,541	55,098	163,639
1. Preparatory Works (10% of Item 2)					9,867	5,009	14,876
2. Main Civil Works					98,674	50,089	148,763
a. Dredging/Excavation	11,253,000	cu m	5,200	1,300	58,516	14,629	73,145
b. Earth Dike					5,977	7,122	13,100
- Stripping/Clearing	1,378,000	sq m	0	1,200	0	1,654	1,654
- Embankment	2,225,000	cu m	2,600	1,000	5,785	2,225	8,010
- Sodding	962,000	sq m	200	1,800	192	1,732	1,924
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	42,000	cu m	0	36,000	0	1,512	1,512
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					8,072	6,346	14,418
- Type A	13	unit	355,000,000	279,000,000	4,615	3,627	8,242
- Type B	4	unit	587,000,000	462,000,000	2,348	1,848	4,196
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	1	unit	1,109,000,000	871,000,000	1,109	871	1,980
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					5,451	9,432	14,883
- Low Water Channel	137,000	sq m	27,000	47,000	3,699	6,439	10,138
- High Water Channel	73,000	sq m	24,000	41,000	1,752	2,993	4,745
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					4,212	4,212	8,424
- Footbridge	760	sq m	200,000	200,000	152	152	304
- Road Bridge	4,060	sq m	1,000,000	1,000,000	4,060	4,060	8,120
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	16,446	8,348	24,794
II. Compensation Cost					0	3,250	3,250
1. Land Acquisition	390	ha	0	3,000,000	0	1,170	1,170
2. Compensation					0	2,080	2,080
a. Permanent House	150	unit	0	12,000,000	0	1,800	1,800
b. Semi-Permanent	70	unit	0	4,000,000	0	280	280
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	8,344	8,344
IV. Engineering Cost (10% of Item I)					10,854	5,510	16,364
V. Physical Contingency (10% of Items I, II & IV)					11,940	6,386	18,325
VI. Total (Items I to V)					131,335	78,588	209,923
VII. Value Added Tax (10% of Item VI)					0	20,992	20,992
VIII. Grand Total					131,335	99,581	230,915

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.17 (2/2) FINANCIAL COST OF UPPER INDRAGIRI RIVER IMPROVEMENT PROJECT
- PAYAKUMBUH AREA RIVER IMPROVEMENT WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					52,726	37,101	89,827
1. Preparatory Works (10% of Item 2)					4,793	3,373	8,166
2. Main Civil Works					47,933	33,728	81,661
a. Dredging/Excavation	4,145,000	cu m	5,200	1,300	21,554	5,389	26,943
b. Earth Dike					2,740	4,391	7,132
- Stripping/Clearing	358,000	sq m	0	1,200	0	430	430
- Embankment	990,000	cu m	2,600	1,000	2,574	990	3,564
- Sodding	831,000	sq m	200	1,800	166	1,496	1,662
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	41,000	cu m	0	36,000	0	1,476	1,476
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					6,021	4,734	10,755
- Type A	12	unit	355,000,000	279,000,000	4,260	3,348	7,608
- Type B	3	unit	587,000,000	462,000,000	1,761	1,386	3,147
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					5,427	9,391	14,818
- Low Water Channel	137,000	sq m	27,000	47,000	3,699	6,439	10,138
- High Water Channel	72,000	sq m	24,000	41,000	1,728	2,952	4,680
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					4,202	4,202	8,404
- Footbridge	760	sq m	200,000	200,000	152	152	304
- Road Bridge	4,050	sq m	1,000,000	1,000,000	4,050	4,050	8,100
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	7,989	5,621	13,610
II. Compensation Cost					0	2,230	2,230
1. Land Acquisition	50	ha	0	3,000,000	0	150	150
2. Compensation					0	2,080	2,080
a. Permanent House	150	unit	0	12,000,000	0	1,800	1,800
b. Semi-Permanent	70	unit	0	4,000,000	0	280	280
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	4,603	4,603
IV. Engineering Cost (10% of Item I)					5,273	3,710	8,983
V. Physical Contingency (10% of Items I, II & IV)					5,800	4,304	10,104
VI. Total (Items I to V)					63,799	51,948	115,747
VII. Value Added Tax (10% of Item VI)					0	11,575	11,575
VIII. Grand Total					63,799	63,523	127,322

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.18 (1/2) FINANCIAL COST OF UPPER INDRAGIRI RIVER IMPROVEMENT PROJECT
- SOLOK AREA RIVER IMPROVEMENT WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					43,387	23,802	67,189
1. Preparatory Works (10% of Item 2)					3,944	2,164	6,108
2. Main Civil Works					39,443	21,638	61,081
a. Dredging/Excavation	4,701,000	cu m	5,200	1,300	24,445	6,111	30,557
b. Earth Dike					529	963	1,492
- Stripping/Clearing	216,000	sq m	0	1,200	0	259	259
- Embankment	194,000	cu m	2,600	1,000	504	194	698
- Sodding	123,000	sq m	200	1,800	25	221	246
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	8,000	cu m	0	36,000	0	288	288
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					587	462	1,049
- Type A	0	unit	355,000,000	279,000,000	0	0	0
- Type B	1	unit	587,000,000	462,000,000	587	462	1,049
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					4,392	7,580	11,972
- Low Water Channel	88,000	sq m	27,000	47,000	2,376	4,136	6,512
- High Water Channel	84,000	sq m	24,000	41,000	2,016	3,444	5,460
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					2,916	2,916	5,832
- Footbridge	130	sq m	200,000	200,000	26	26	52
- Road Bridge	2,890	sq m	1,000,000	1,000,000	2,890	2,890	5,780
h. Miscellaneous (20% of a to g)	1	Ls.	0	0	6,574	3,606	10,180
II. Compensation Cost					0	620	620
1. Land Acquisition	60	ha	0	3,000,000	0	180	180
2. Compensation					0	440	440
a. Permanent House	30	unit	0	12,000,000	0	360	360
b. Semi-Permanent	20	unit	0	4,000,000	0	80	80
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	3,390	3,390
IV. Engineering Cost (10% of Item I)					4,339	2,380	6,719
V. Physical Contingency (10% of Items I, II & IV)					4,773	2,680	7,453
VI. Total (Items I to V)					52,499	32,873	85,372
VII. Value Added Tax (10% of Item VI)					0	8,537	8,537
VIII. Grand Total					52,499	41,410	93,909

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.18 (2/2) FINANCIAL COST OF UPPER INDRAGIRI RIVER IMPROVEMENT PROJECT
- SOLOK AREA RIVER IMPROVEMENT WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					13,878	16,784	30,662
1. Preparatory Works (10% of Item 2)					1,262	1,526	2,787
2. Main Civil Works					12,617	15,258	27,875
a. Dredging/Excavation	0	cu m	5,200	1,300	0	0	0
b. Earth Dike					2,621	1,759	4,380
- Stripping/Clearing	208,000	sq m	0	1,200	0	250	250
- Embankment	349,000	cu m	7,400	2,200	2,583	768	3,350
- Sodding	192,000	sq m	200	1,800	38	346	384
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	11,000	cu m	0	36,000	0	396	396
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					587	462	1,049
- Type A	0	unit	355,000,000	279,000,000	0	0	0
- Type B	1	unit	587,000,000	462,000,000	587	462	1,049
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					4,392	7,580	11,972
- Low Water Channel	88,000	sq m	27,000	47,000	2,376	4,136	6,512
- High Water Channel	84,000	sq m	24,000	41,000	2,016	3,444	5,460
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					2,914	2,914	5,828
- Footbridge	120	sq m	200,000	200,000	24	24	48
- Road Bridge	2,890	sq m	1,000,000	1,000,000	2,890	2,890	5,780
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	2,103	2,543	4,646
II. Compensation Cost					0	620	620
1. Land Acquisition	60	ha	0	3,000,000	0	180	180
2. Compensation					0	440	440
a. Permanent House	30	unit	0	12,000,000	0	360	360
b. Semi-Permanent	20	unit	0	4,000,000	0	80	80
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	1,564	1,564
IV. Engineering Cost (10% of Item I)					1,388	1,678	3,066
V. Physical Contingency (10% of Items I, II & IV)					1,527	1,908	3,435
VI. Total (Items I to V)					16,793	22,555	39,347
VII. Value Added Tax (10% of Item VI)					0	3,935	3,935
VIII. Grand Total					16,793	26,489	43,282

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.19 (1/2) FINANCIAL COST OF UPPER INDRAGIRI RIVER IMPROVEMENT PROJECT
- SIJUNJUNG/MUARA AREA RIVER IMPROVEMENT WORKS (INITIAL PHASE) -

Work Item	Quantity	Unit	Unit Cost F.C. (Rp.)	Unit Cost L.C. (Rp.)	Amount F.C. (Mill. Rp.)	Amount L.C. (Mill. Rp.)	Amount Total (Mill. Rp.)
I. Construction Base Cost					59,568	30,204	89,772
1. Preparatory Works (10% of Item 2)					5,415	2,746	8,161
2. Main Civil Works					54,153	27,459	81,611
a. Dredging/Excavation	6,470,000	cu m	5,200	1,300	33,644	8,411	42,055
b. Earth Dike					3,046	3,627	6,672
- Stripping/Clearing	672,000	sq m	0	1,200	0	806	806
- Embankment	1,130,000	cu m	2,600	1,000	2,938	1,130	4,068
- Sodding	539,000	sq m	200	1,800	108	970	1,078
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	20,000	cu m	0	36,000	0	720	720
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					2,840	2,232	5,072
- Type A	8	unit	355,000,000	279,000,000	2,840	2,232	5,072
- Type B	0	unit	587,000,000	462,000,000	0	0	0
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					4,118	7,133	11,250
- Low Water Channel	112,500	sq m	27,000	47,000	3,038	5,288	8,325
- High Water Channel	45,000	sq m	24,000	41,000	1,080	1,845	2,925
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					1,480	1,480	2,960
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	1,480	sq m	1,000,000	1,000,000	1,480	1,480	2,960
h. Miscellaneous (20% of a to g)	1	ls.	0	0	9,025	4,576	13,602
II. Compensation Cost					0	1,770	1,770
1. Land Acquisition	230	ha	0	3,000,000	0	690	690
2. Compensation					0	1,080	1,080
a. Permanent House	80	unit	0	12,000,000	0	960	960
b. Semi-Permanent	30	unit	0	4,000,000	0	120	120
III. Administration Cost (5% of Items I & II, allotted to L.C. only)					0	4,577	4,577
IV. Engineering Cost (10% of Item I)					5,957	3,020	8,977
V. Physical Contingency (10% of Items I, II & IV)					6,552	3,499	10,052
VI. Total (Items I to V)					72,077	43,071	115,149
VII. Value Added Tax (10% of Item VI)					0	11,515	11,515
VIII. Grand Total					72,077	54,586	126,664

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.19 (2/2) FINANCIAL COST OF UPPER INDRAGIRI RIVER IMPROVEMENT PROJECT
- SIJUNJUNG/MUARA AREA RIVER IMPROVEMENT WORKS (FINAL PHASE) -

Work Item	Quantity	Unit	Unit Cost		Amount		
			F.C. (Rp.)	L.C. (Rp.)	F.C. (Mill. Rp.)	L.C. (Mill. Rp.)	Total (Mill. Rp.)
I. Construction Base Cost					19,438	12,314	31,751
1. Preparatory Works (10% of Item 2)					1,767	1,119	2,886
2. Main Civil Works					17,670	11,194	28,865
a. Dredging/Excavation	1,980,000	cu m	5,200	1,300	10,296	2,574	12,870
b. Earth Dike					1,638	2,838	4,476
- Stripping/Clearing	186,000	sq m	0	1,200	0	223	223
- Embankment	593,000	cu m	2,600	1,000	1,542	593	2,135
- Sodding	483,000	sq m	200	1,800	97	869	966
- Filter	0	cu m	0	44,000	0	0	0
- Gravel Metaling	32,000	cu m	0	36,000	0	1,152	1,152
c. Concrete Dike	0	m	160,000	170,000	0	0	0
d. Sluice					710	558	1,268
- Type A	2	unit	355,000,000	279,000,000	710	558	1,268
- Type B	0	unit	587,000,000	462,000,000	0	0	0
- Type C	0	unit	896,000,000	704,000,000	0	0	0
- Type D	0	unit	1,109,000,000	871,000,000	0	0	0
- Type E	0	unit	1,848,000,000	1,452,000,000	0	0	0
- Type F	0	unit	2,128,000,000	1,672,000,000	0	0	0
- Type G	0	unit	2,520,000,000	1,980,000,000	0	0	0
- Type H	0	unit	2,968,000,000	2,332,000,000	0	0	0
e. Revetment					1,761	3,039	4,800
- Low Water Channel	35,000	sq m	27,000	47,000	945	1,645	2,590
- High Water Channel	34,000	sq m	24,000	41,000	816	1,394	2,210
f. Groin	0	set	33,000,000	32,000,000	0	0	0
g. Bridge					320	320	640
- Footbridge	0	sq m	200,000	200,000	0	0	0
- Road Bridge	320	sq m	1,000,000	1,000,000	320	320	640
h. Miscellaneous (20% of a to g)	1	l.s.	0	0	2,945	1,866	4,811
II. Compensation Cost					0	900	900
1. Land Acquisition	20	ha	0	3,000,000	0	60	60
2. Compensation					0	840	840
a. Permanent House	60	unit	0	12,000,000	0	720	720
b. Semi-Permanent	30	unit	0	4,000,000	0	120	120
III. Administration Cost (5% of Items I & II, alloited to L.C. only)					0	1,633	1,633
IV. Engineering Cost (10% of Item I)					1,944	1,231	3,175
V. Physical Contingency (10% of Items I, II & IV)					2,138	1,445	3,583
VI. Total (Items I to V)					23,519	17,522	41,042
VII. Value Added Tax (10% of Item VI)					0	4,104	4,104
VIII. Grand Total					23,519	21,626	45,146

Note : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Costs do not include Price Contingency
*4 Figures may not add up to totals due to rounding

Table 5.12.20 (1/2) ANNUAL DISBURSEMENT SCHEDULE OF KAMPAR KANAN WATER SUPPLY PROJECT (FINANCIAL)
(KUOK INTAKE WEIR / RANTAUBERANGIN IRRIGATION - INITIAL)

Unit: Million Rp.

Description	Amount			1996		1997		1998		1999		2000		2001		2002		2003		2004	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	172,250	150,686	322,935	0	0	0	0	0	0	0	0	10,589	7,352	25,859	19,138	30,801	24,187	29,630	24,486	16,444	14,675
1. Preparatory Works	11,665	6,263	17,928	0	0	0	0	0	0	0	0	4,053	2,178	4,053	2,178	0	0	0	0	0	0
2. Head Works	32,105	16,368	48,473	0	0	0	0	0	0	0	0	4,816	2,455	9,632	4,910	9,632	4,910	8,026	4,092	0	0
3. Head Reach & Main canal	49,711	35,924	85,635	0	0	0	0	0	0	0	0	0	0	4,111	3,120	8,222	6,240	8,222	6,240	6,852	5,200
4. Left Bank Irrigation System	29,345	8,707	38,052	0	0	0	0	0	0	0	0	0	0	2,407	714	4,815	1,429	4,815	1,429	4,012	1,191
5. Right bank Irrigation System	5,486	1,628	7,114	0	0	0	0	0	0	0	0	0	0	823	244	1,646	488	1,646	488	1,372	407
Sub-Total	128,312	68,890	197,202	0	0	0	0	0	0	0	0	8,868	4,633	21,025	11,167	24,314	13,067	22,709	12,249	12,236	6,798
7. Price Contingency (3%F.C. & 8%L.C.)	43,938	81,796	125,733	0	0	0	0	0	0	0	0	1,721	2,719	4,833	7,971	6,486	11,119	6,921	12,237	4,208	7,878
II. Compensation Cost	0	13,278	13,278	0	0	0	0	0	629	0	3,055	0	3,299	0	0	0	0	0	0	0	0
1. Compensation	0	7,120	7,120	0	0	0	0	0	462	0	2,079	0	2,079	0	0	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	6,158	6,158	0	0	0	0	0	167	0	976	0	1,220	0	0	0	0	0	0	0	0
III. Administration Cost	0	20,275	20,275	0	826	0	892	0	964	0	1,561	0	1,686	0	1,214	0	1,311	0	1,416	0	1,529
1. Administration	0	10,216	10,216	0	708	0	708	0	708	0	1,063	0	1,063	0	708	0	708	0	708	0	708
2. Price Contingency (8%L.C.)	0	10,059	10,059	0	118	0	184	0	255	0	499	0	624	0	506	0	603	0	708	0	821
IV. Engineering Cost	16,129	12,889	29,017	1,702	1,006	1,461	905	1,505	978	1,240	845	639	456	1,096	821	1,129	887	1,163	958	479	414
1. Detailed Design	7,699	4,133	11,832	1,605	862	1,337	719	1,337	719	1,070	575	0	0	0	0	0	0	0	0	0	0
2. Construction Supervision	5,132	2,756	7,888	0	0	0	0	0	0	0	0	535	287	892	479	892	479	892	479	357	192
3. Price Contingency (3%F.C. & 8%L.C.)	3,298	6,000	9,297	98	144	124	187	168	259	170	270	104	169	205	342	238	408	272	479	123	222
V. Physical Contingency (10% of Items I, II& IV)	18,838	17,685	36,523	170	101	146	91	151	161	124	390	1,123	1,111	2,696	1,996	3,193	2,507	3,079	2,544	1,692	1,509
VI. Total (Items I, II, III, IV & V)	207,216	214,812	422,028	1,873	1,933	1,607	1,888	1,656	2,731	1,364	5,851	12,351	13,905	29,651	23,169	35,123	28,892	33,873	29,404	18,615	18,127
VII. Value Added Tax (10% of Item VI)	0	42,203	42,203	0	381	0	350	0	439	0	721	0	2,626	0	5,282	0	6,402	0	6,328	0	3,674
VIII. Grand Total	207,216	257,015	464,231	1,873	2,313	1,607	2,238	1,656	3,169	1,364	6,572	12,351	16,530	29,651	28,451	35,123	35,294	33,873	35,732	18,615	21,802

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Replacement Cost (Rubber Gate) is allocated at 2024 and not included in the Total Amount of the Project Cost
*4 Figures may not add up to totals due to rounding

Table 5.12.20 (2/2) ANNUAL DISBURSEMENT SCHEDULE OF KAMPAR KANAN WATER SUPPLY PROJECT (FINANCIAL)
- RANTAUBERANGIN IRRIGATION SYSTEM CONSTRUCTION WORKS (FINAL PHASE) -

Unit: Million Rp.

Description	2006		2007		2008		2009		2028	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	0	0	20,911	20,744	26,923	28,005	11,092	12,098	45,533	97,794
1. Preparatory Works	0	0	3,560	1,907	0	0	0	0	1,515	649
2. Head Works	0	0	0	0	0	0	0	0	35,152	8,494
3. Head Reach & Main canal	0	0	6,691	4,537	11,152	7,562	4,461	3,025	0	0
4. Left Bank Irrigation System	0	0	3,989	1,184	6,648	1,973	2,659	789	0	0
5. Right bank Irrigation System	0	0	0	0	0	0	0	0	0	0
Sub-Total	0	0	14,240	7,628	17,800	9,535	7,120	3,814	36,667	7,143
7. Price Contingency (3%F.C. & 8%L.C.)	0	0	6,672	13,117	9,124	18,470	3,973	8,284	28,866	90,651
II. Compensation Cost	0	6,295	0	0	0	0	0	0	0	0
1. Compensation	0	2,500	0	0	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	3,795	0	0	0	0	0	0	0	0
III. Administration Cost	0	1,577	0	1,704	0	4,600	0	994	0	16,299
1. Administration	0	626	0	626	0	1,566	0	313	0	1,191
2. Price Contingency (8%L.C.)	0	951	0	1,077	0	3,034	0	680	0	15,108
IV. Engineering Cost	3,350	3,170	690	685	1,185	1,232	488	532	1,821	3,912
1. Detailed Design	2,350	1,259	0	0	0	0	0	0	0	0
2. Construction Supervision	0	0	470	252	783	420	313	168	667	286
3. Price Contingency (3%F.C. & 8%L.C.)	1,000	1,911	220	433	401	813	175	365	1,155	3,626
V. Physical Contingency (10% of Items I, II& IV)	335	947	2,160	2,143	2,811	2,924	1,158	1,263	4,735	10,173
VI. Total (Items I, II, III, IV & V)	3,685	11,989	23,762	25,276	30,919	36,760	12,739	14,887	52,090	128,175
VII. Value Added Tax (10% of Item VI)	0	1,567	0	4,904	0	6,768	0	2,763	0	18,026
VIII. Grand Total	3,685	13,557	23,762	30,179	30,919	43,528	12,739	17,650	52,090	146,201

Notes : *1 Price Level in July 1994

*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.

*3 Replacement Cost (Rubber Gate) is allocated at 2028 and not included in the Total Amount of the Project Cost

*4 Figures may not add up to totals due to rounding

Table 5.12.21 (1/3) ANNUAL DISBURSEMENT SCHEDULE OF KAMPAR KANAN RIVER IMPROVEMENT PROJECT (FINANCIAL)
(1999 - 2004)

Unit : Million Rp.

Description	Amount			1999		2000		2001		2002		2003		2004	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	571,477	882,290	1,453,767	0	0	0	0	0	0	48,316	47,910	62,207	64,679	25,629	27,941
1. Preparatory Works	33,414	22,854	56,268	0	0	0	0	0	0	9,535	6,471	0	0	0	0
2. Main Civil Works	334,149	228,536	562,685	0	0	0	0	0	0	28,606	19,413	47,677	32,356	19,071	12,942
Sub-Total	367,563	251,390	618,953	0	0	0	0	0	0	38,141	25,884	47,677	32,356	19,071	12,942
7. Price Contingency (3%F.C. & 8%L.C.)	203,914	630,900	834,814	0	0	0	0	0	0	10,175	22,026	14,531	32,323	6,559	14,999
II. Compensation Cost	0	22,345	22,345	0	0	0	2,056	0	2,220	0	0	0	0	0	0
1. Compensation	0	8,490	8,490	0	0	0	1,296	0	1,296	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	13,855	13,855	0	0	0	760	0	925	0	0	0	0	0	0
III. Administration Cost	0	97,549	97,549	0	1,969	0	3,544	0	4,593	0	1,653	0	1,786	0	1,929
1. Administration	0	31,373	31,373	0	1,340	0	2,233	0	2,680	0	893	0	893	0	893
2. Price Contingency (8%L.C.)	0	66,176	66,176	0	629	0	1,311	0	1,913	0	760	0	892	0	1,035
IV. Engineering Cost	54,416	78,335	132,751	5,107	4,393	2,254	2,033	0	0	1,594	1,581	2,737	2,846	1,128	1,229
1. Detailed Design	22,054	15,084	37,138	4,405	2,990	1,888	1,281	0	0	0	0	0	0	0	0
2. Construction Supervision	14,703	10,056	24,759	0	0	0	0	0	0	1,259	854	2,098	1,424	839	569
3. Price Contingency (3%F.C. & 8%L.C.)	17,659	53,195	70,854	702	1,403	366	752	0	0	336	727	639	1,422	289	660
V. Physical Contingency (10% of Items I, II& IV)	62,589	98,297	160,886	511	439	225	409	0	222	4,991	4,949	6,494	6,752	2,676	2,917
VI. Total (Items I, II, III, IV & V)	688,482	1,178,816	1,867,298	5,618	6,801	2,480	8,042	0	7,035	54,901	56,094	71,439	76,063	29,433	34,016
VII. Value Added Tax (10% of Item VI)	0	186,730	186,730	0	1,242	0	1,052	0	704	0	11,099	0	14,750	0	6,345
VIII. Grand Total	688,482	1,365,546	2,054,028	5,618	8,043	2,480	9,094	0	7,739	54,901	67,193	71,439	90,813	29,433	40,361

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding

Table 5.12.21 (2/3) ANNUAL DISBURSEMENT SCHEDULE OF KAMPAR KANAN RIVER IMPROVEMENT PROJECT (FINANCIAL)
(2005 - 2009)

Unit : Million Rp.

Description	2005		2006		2007		2008		2009	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	0	0	0	0	71,746	78,040	98,531	112,378	101,487	121,368
1. Preparatory Works	0	0	0	0	16,285	9,565	0	0	0	0
2. Main Civil Works	0	0	0	0	32,570	19,130	65,141	38,260	65,141	38,260
Sub-Total	0	0	0	0	48,855	28,695	65,141	38,260	65,141	38,260
7. Price Contingency (3%F.C. & 8%L.C.)	0	0	0	0	22,890	49,345	33,391	74,118	36,346	83,108
II. Compensation Cost	0	0	0	8,058	0	0	0	0	0	0
1. Compensation	0	0	0	3,200	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	0	0	4,858	0	0	0	0	0	0
III. Administration Cost	0	5,029	0	9,052	0	11,731	0	8,446	0	4,561
1. Administration	0	2,157	0	3,595	0	4,313	0	2,876	0	1,438
2. Price Contingency (8%L.C.)	0	2,872	0	5,457	0	7,417	0	5,571	0	3,123
IV. Engineering Cost	10,415	10,304	4,597	4,769	2,105	2,289	4,335	4,945	4,466	5,340
1. Detailed Design	7,524	4,419	3,225	1,894	0	0	0	0	0	0
2. Construction Supervision	0	0	0	0	1,433	842	2,866	1,684	2,866	1,684
3. Price Contingency (3%F.C. & 8%L.C.)	2,891	5,885	1,373	2,875	671	1,443	1,469	3,261	1,599	3,657
V. Physical Contingency (10% of Items I, II& IV)	1,041	1,030	460	1,283	7,385	8,033	10,287	11,732	10,595	12,671
VI. Total (Items I, II, III, IV & V)	11,456	16,363	5,057	23,162	81,235	100,093	113,153	137,502	116,548	143,941
VII. Value Added Tax (10% of Item VI)	0	2,782	0	2,822	0	18,133	0	25,065	0	26,049
VIII. Grand Total	11,456	19,145	5,057	25,984	81,235	118,226	113,153	162,567	116,548	169,990

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding

Table 5.12.21 (3/3) ANNUAL DISBURSEMENT SCHEDULE OF KAMPAR KANAN RIVER IMPROVEMENT PROJECT (FINANCIAL)
(2012 - 2019)

Unit : Million Rp.

Description	2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	LC	FC	LC	FC	L.C.	F.C.	L.C.
I. Construction Base Cost	0	0	0	0	36,748	91,772	31,542	82,593	0	0	0	0	51,266	134,531	44,004	121,078
1. Preparatory Works	0	0	0	0	3,391	3,282	0	0	0	0	0	0	4,203	3,536	0	0
2. Main Civil Works	0	0	0	0	16,956	16,408	16,956	16,408	0	0	0	0	21,017	17,680	21,017	17,680
Sub-Total	0	0	0	0	20,347	19,690	16,956	16,408	0	0	0	0	25,220	21,216	21,017	17,680
7. Price Contingency (3%F.C. & 8%L.C.)	0	0	0	0	16,402	72,082	14,587	66,185	0	0	0	0	26,047	113,316	22,987	103,398
II. Compensation Cost	0	0	0	8,631	0	0	0	0	0	0	0	1,380	0	0	0	0
1. Compensation	0	0	0	2,000	0	0	0	0	0	0	0	699	0	0	0	0
2. Price Contingency (8%L.C.)	0	0	0	6,631	0	0	0	0	0	0	0	681	0	0	0	0
III. Administration Cost	0	3,766	0	4,068	0	4,393	0	4,744	0	5,833	0	6,300	0	6,804	0	7,348
1. Administration	0	943	0	943	0	943	0	943	0	1,073	0	1,073	0	1,073	0	1,073
2. Price Contingency (8%L.C.)	0	2,824	0	3,125	0	3,450	0	3,802	0	4,760	0	5,227	0	5,731	0	6,275
IV. Engineering Cost	3,810	8,655	0	0	1,347	3,365	1,388	3,634	5,316	12,689	0	0	1,880	4,933	1,936	5,328
1. Detailed Design	2,238	2,166	0	0	0	0	0	0	2,774	2,334	0	0	0	0	0	0
2. Construction Supervision	0	0	0	0	746	722	746	722	0	0	0	0	925	778	925	778
3. Price Contingency (3%F.C. & 8%L.C.)	1,572	6,489	0	0	601	2,643	642	2,912	2,542	10,355	0	0	955	4,155	1,012	4,550
V. Physical Contingency (10% of Items I, II& IV)	381	866	0	863	3,810	9,514	3,293	8,623	532	1,269	0	138	5,315	13,946	4,594	12,641
VI. Total (Items I, II, III, IV & V)	4,191	13,287	0	13,562	41,905	109,044	36,223	99,594	5,848	19,791	0	7,818	58,461	160,215	50,534	146,395
VII. Value Added Tax (10% of Item VI)	0	1,748	0	1,356	0	15,095	0	13,582	0	2,564	0	782	0	21,868	0	19,693
VIII. Grand Total	4,191	15,035	0	14,918	41,905	124,139	36,223	113,176	5,848	22,355	0	8,599	58,461	182,083	50,534	166,088

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding

Table 5.12.22 (1/2) ANNUAL DISBURSEMENT SCHEDULE OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT (FINANCIAL)
(2004 - 2009)

Unit : Million Rp.

Description	Amount			2004		2005		2006		2007		2008		2009	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	1,494,010	2,104,520	3,598,529	0	0	0	0	14,607	23,790	82,748	113,457	156,474	181,258	224,099	125,686
1. Preparatory Works	58,404	38,677	97,081	0	0	0	0	7,562	5,963	7,562	5,963	0	0	0	0
2. Access Road	4,784	6,125	10,909	0	0	0	0	2,683	3,485	671	871	0	0	0	0
3. Main Civil Works	579,260	380,643	959,903	0	0	0	0	0	0	44,367	34,468	73,946	57,447	29,578	22,979
4. Hydro-Mechanical Works	41,978	4,665	46,643	0	0	0	0	0	0	3,747	416	7,494	833	26,230	2,915
5. Turbines, Generators & GIS	135,630	15,070	150,700	0	0	0	0	0	0	0	0	18,900	2,100	75,600	8,400
6. Transmission Line	21,350	9,150	30,500	0	0	0	0	0	0	0	0	3,108	1,332	12,432	5,328
Sub-Total	841,406	454,330	1,295,736	0	0	0	0	10,245	9,447	56,347	41,718	103,448	61,711	143,841	39,621
7. Price Contingency (3%F.C. & 8%L.C.)	652,604	1,650,190	2,302,793	0	0	0	0	4,362	14,343	26,401	71,739	53,026	119,547	80,258	86,064
II. Compensation Cost	0	42,718	42,718	0	0	0	13,990	0	0	0	0	0	0	0	0
1. Compensation	0	12,571	12,571	0	0	0	6,000	0	0	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	30,147	30,147	0	0	0	7,990	0	0	0	0	0	0	0	0
III. Administration Cost	0	269,278	269,278	0	7,649	0	13,768	0	17,843	0	6,423	0	6,937	0	7,492
1. Administration	0	65,415	65,415	0	3,543	0	5,905	0	7,086	0	2,362	0	2,362	0	2,362
2. Price Contingency (8%L.C.)	0	203,863	203,863	0	4,106	0	7,863	0	10,757	0	4,062	0	4,575	0	5,130
IV. Engineering Cost	140,570	183,362	323,933	17,717	13,828	7,821	6,400	1,790	1,536	7,375	6,636	5,697	5,375	3,912	3,870
1. Detailed Design	50,485	27,260	77,745	13,183	6,405	5,650	2,745	0	0	0	0	0	0	0	0
2. Construction Supervision	33,656	18,174	51,830	0	0	0	0	1,256	610	5,022	2,440	3,767	1,830	2,511	1,220
3. Price Contingency (3%F.C. & 8%L.C.)	56,429	137,928	194,358	4,534	7,423	2,171	3,655	535	926	2,353	4,196	1,931	3,545	1,401	2,650
V. Physical Contingency (10% of Items I, II& IV)	163,458	233,060	396,518	1,772	1,383	782	2,039	1,640	2,533	9,012	12,009	16,217	18,663	22,801	12,956
VI. Total (Items I, II, III, IV & V)	1,798,038	2,832,938	4,630,976	19,488	22,859	8,603	36,197	18,037	45,702	99,135	138,526	178,389	212,234	250,812	150,004
VII. Value Added Tax (10% of Item VI)	0	463,098	463,098	0	4,235	0	4,480	0	6,374	0	23,766	0	39,062	0	40,082
VIII. Grand Total	1,798,038	3,296,036	5,094,074	19,488	27,094	8,603	40,677	18,037	52,075	99,135	162,292	178,389	251,296	250,812	190,085

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding

Table 5.12.22 (2/2) ANNUAL DISBURSEMENT SCHEDULE OF KAMPAR AND KAMPAR KIRI RIVER DEVELOPMENT PROJECT (FINANCIAL)
(2010 - 2019)

Unit : Million Rp.

Description	2010		2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	0	0	0	0	30,542	43,534	74,662	137,597	103,043	188,621	102,118	98,263	154,621	245,962	286,667	478,149	196,845	344,267	67,583	123,936
1. Preparatory Works	0	0	0	0	5,501	4,328	5,501	4,328	0	0	0	0	16,139	9,049	16,139	9,049	0	0	0	0
2. Access Road	0	0	0	0	1,144	1,415	286	354	0	0	0	0	0	0	0	0	0	0	0	0
3. Main Civil Works	0	0	0	0	11,295	5,152	36,341	27,152	46,763	38,956	14,187	13,522	64,556	36,194	129,113	72,388	96,835	54,291	32,278	18,097
4. Hydro-Mechanical Works	0	0	0	0	0	0	451	50	901	100	3,154	351	0	0	0	0	0	0	0	0
5. Turbines, Generators & GIS	0	0	0	0	0	0	0	0	8,226	914	32,904	3,656	0	0	0	0	0	0	0	0
6. Transmission Line	0	0	0	0	0	0	0	0	1,162	498	4,648	1,992	0	0	0	0	0	0	0	0
Sub-Total	0	0	0	0	17,940	10,894	42,579	31,883	57,053	40,468	54,893	19,521	80,695	45,242	145,252	81,436	96,835	54,291	32,278	18,097
7. Price Contingency (3%F.C. & 8%L.C.)	0	0	0	0	12,602	32,640	32,083	105,714	45,991	148,153	47,224	78,742	73,925	200,719	141,415	396,713	100,010	289,976	35,305	105,839
II. Compensation Cost	0	0	0	12,066	0	0	0	0	0	0	0	16,662	0	0	0	0	0	0	0	0
1. Compensation	0	0	0	3,261	0	0	0	0	0	0	0	3,310	0	0	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	0	0	8,805	0	0	0	0	0	0	0	13,352	0	0	0	0	0	0	0	0
III. Administration Cost	0	7,155	0	12,880	0	16,692	0	7,316	0	25,976	0	40,561	0	45,458	0	16,365	0	17,674	0	19,088
1. Administration	0	2,089	0	3,481	0	4,177	0	1,695	0	5,573	0	8,058	0	8,362	0	2,787	0	2,787	0	2,787
2. Price Contingency (8%L.C.)	0	5,067	0	9,399	0	12,515	0	5,621	0	20,403	0	32,503	0	37,097	0	13,578	0	14,887	0	16,301
IV. Engineering Cost	12,023	15,176	4,720	6,425	1,739	2,247	4,839	7,096	34,519	50,285	9,877	15,403	2,721	4,329	11,212	18,701	8,661	15,148	5,947	10,907
1. Detailed Design	7,492	4,430	2,856	1,737	0	0	0	0	17,043	9,555	4,261	2,389	0	0	0	0	0	0	0	0
2. Construction Supervision	0	0	0	0	1,021	562	2,760	1,644	2,070	1,233	1,048	671	1,420	796	5,681	3,185	4,261	2,389	2,840	1,593
3. Price Contingency (3%F.C. & 8%L.C.)	4,531	10,746	1,864	4,689	717	1,684	2,079	5,452	15,407	39,497	4,567	12,343	1,301	3,533	5,531	15,516	4,400	12,759	3,107	9,314
V. Physical Contingency (10% of Items I, II& IV)	1,202	1,518	472	1,849	3,228	4,578	7,950	14,469	13,756	23,891	11,199	13,033	15,734	25,029	29,788	49,685	20,551	35,942	7,353	13,484
VI. Total (Items I, II, III, IV & V)	13,225	23,849	5,192	33,220	35,509	67,051	87,451	166,479	151,319	288,773	123,194	183,921	173,076	320,778	327,667	562,900	226,057	413,031	80,884	167,415
VII. Value Added Tax (10% of Item VI)	0	3,707	0	3,841	0	10,256	0	25,393	0	44,009	0	30,712	0	49,385	0	89,057	0	63,909	0	24,830
VIII. Grand Total	13,225	27,556	5,192	37,061	35,509	77,307	87,451	191,872	151,319	332,782	123,194	214,633	173,076	370,163	327,667	651,957	226,057	476,940	80,884	192,245

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding

Table 5.12.23 (1/3) ANNUAL DISBURSEMENT SCHEDULE OF INDRAGIRI RIVER DEVELOPMENT PROJECT (FINANCIAL)
(1996 - 2004)

Unit : Million Rp.

Description	Amount			1996		1997		1998		1999		2000		2001		2002		2003		2004	
	F.C.	L.C.	Total	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	1,732,530	2,332,631	4,065,161	0	0	0	0	7,342	5,148	9,452	6,949	39,413	33,742	91,602	66,736	133,459	102,463	75,781	63,747	37,428	31,734
1. Preparatory Works	89,978	59,760	149,738	0	0	0	0	1,631	946	0	0	9,454	8,970	2,267	1,289	5,291	3,009	0	0	0	0
2. Main Civil Works	1,008,148	611,914	1,620,062	0	0	0	0	4,892	2,838	8,154	4,730	23,554	12,293	72,213	37,650	100,063	52,349	58,080	31,889	27,850	14,699
Sub-Total	1,098,126	671,674	1,769,800	0	0	0	0	6,523	3,784	8,154	4,730	33,008	21,263	74,481	38,940	105,354	55,358	58,080	31,889	27,850	14,699
7. Price Contingency (3%F.C. & 8%L.C.)	634,404	1,660,957	2,295,361	0	0	0	0	819	1,364	1,299	2,220	6,405	12,479	17,121	27,796	28,105	47,106	17,701	31,858	9,578	17,035
II. Compensation Cost	0	92,250	92,250	0	0	0	353	0	17,550	0	1,609	0	3,475	0	1,877	0	0	0	0	0	0
1. Compensation	0	38,506	38,506	0	0	0	280	0	12,900	0	1,095	0	2,190	0	1,095	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	53,744	53,744	0	0	0	73	0	4,650	0	514	0	1,285	0	782	0	0	0	0	0	0
III. Administration Cost	0	284,242	284,242	0	2,140	0	2,852	0	6,103	0	3,686	0	6,119	0	5,208	0	4,378	0	4,728	0	5,106
1. Administration	0	90,415	90,415	0	1,834	0	2,264	0	4,486	0	2,508	0	3,856	0	3,039	0	2,365	0	2,365	0	2,365
2. Price Contingency (8%L.C.)	0	193,827	193,827	0	305	0	588	0	1,617	0	1,177	0	2,263	0	2,169	0	2,013	0	2,363	0	2,741
IV. Engineering Cost	163,185	202,473	365,658	7,901	4,681	6,962	4,270	3,049	2,099	2,151	1,556	2,377	1,749	3,748	2,810	5,358	4,221	3,278	2,793	1,589	1,384
1. Detailed Design	65,887	40,300	106,187	7,448	4,013	6,371	3,389	2,494	1,418	1,496	851	998	567	0	0	0	0	0	0	0	0
2. Construction Supervision	43,925	26,866	70,791	0	0	0	0	215	125	359	208	993	535	3,047	1,639	4,229	2,280	2,512	1,397	1,182	641
3. Price Contingency (3%F.C. & 8%L.C.)	53,373	135,307	188,680	454	668	591	880	340	556	295	497	386	647	701	1,170	1,128	1,940	766	1,396	407	743
V. Physical Contingency (10% of Items I, II& IV)	189,571	262,735	452,307	790	468	696	462	1,039	2,480	1,160	1,011	4,179	3,897	9,535	7,142	13,882	10,668	7,906	6,654	3,902	3,312
VI. Total (Items I, II, III, IV & V)	2,085,286	3,174,332	5,259,618	8,692	7,289	7,658	7,936	11,430	33,380	12,763	14,811	45,969	48,982	104,884	83,773	152,698	121,730	86,965	77,922	42,918	41,536
VII. Value Added Tax (10% of Item VI)	0	525,962	525,962	0	1,598	0	1,559	0	4,481	0	2,757	0	9,495	0	18,866	0	27,443	0	16,489	0	8,445
VIII. Grand Total	2,085,286	3,700,294	5,785,580	8,692	8,887	7,658	9,496	11,430	37,861	12,763	17,568	45,969	58,477	104,884	102,638	152,698	149,173	86,965	94,411	42,918	49,981

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding

Table 5.12.23 (2/3) ANNUAL DISBURSEMENT SCHEDULE OF INDRAGIRI RIVER DEVELOPMENT PROJECT (FINANCIAL)
(2005 - 2010)

Unit : Million Rp.

Description	2005		2006		2007		2008		2009		2010	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	0	0	0	0	149,579	177,756	192,582	239,972	79,344	103,668	35,239	41,426
1. Preparatory Works	0	0	0	0	25,464	16,340	0	0	0	0	10,980	6,046
2. Main Civil Works	0	0	0	0	76,392	49,021	127,320	81,701	50,928	32,680	10,980	6,046
Sub-Total	0	0	0	0	101,856	65,361	127,320	81,701	50,928	32,680	21,960	12,092
7. Price Contingency (3%F.C. & 8%L.C.)	0	0	0	0	47,723	112,396	65,263	158,271	28,416	70,987	13,279	29,334
II. Compensation Cost	0	0	0	11,735	0	0	0	29,874	0	0	0	0
1. Compensation	0	0	0	4,660	0	0	0	10,171	0	0	0	0
2. Price Contingency (8%L.C.)	0	0	0	7,075	0	0	0	19,703	0	0	0	0
III. Administration Cost	0	5,415	0	25,880	0	21,634	0	12,621	0	10,499	0	10,383
1. Administration	0	2,323	0	10,277	0	7,955	0	4,297	0	3,310	0	3,031
2. Price Contingency (8%L.C.)	0	3,093	0	15,603	0	13,679	0	8,324	0	7,189	0	7,353
IV. Engineering Cost	23,263	25,145	5,166	5,024	10,257	11,292	8,474	10,559	3,491	4,561	22,662	37,311
1. Detailed Design	16,806	10,784	3,623	1,995	3,623	1,995	0	0	0	0	13,639	10,625
2. Construction Supervision	0	0	0	0	3,361	2,157	5,602	3,595	2,241	1,438	483	266
3. Price Contingency (3%F.C. & 8%L.C.)	6,457	14,361	1,543	3,029	3,272	7,140	2,872	6,964	1,250	3,123	8,540	26,420
V. Physical Contingency (10% of Items I, II& IV)	2,326	2,515	517	1,676	15,984	18,905	20,106	28,040	8,283	10,823	5,790	7,874
VI. Total (Items I, II, III, IV & V)	25,590	33,075	5,682	44,314	175,819	229,587	221,161	321,066	91,118	129,551	63,691	96,995
VII. Value Added Tax (10% of Item VI)	0	5,866	0	5,000	0	40,541	0	54,223	0	22,067	0	16,069
VIII. Grand Total	25,590	38,942	5,682	49,314	175,819	270,127	221,161	375,289	91,118	151,618	63,691	113,063

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. ; 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding

Table 5.12.23 (3/3) ANNUAL DISBURSEMENT SCHEDULE OF INDRAGIRI RIVER DEVELOPMENT PROJECT (FINANCIAL)
(2011 - 2019)

Unit : Million Rp.

Description	2011		2012		2013		2014		2015		2016		2017		2018		2019	
	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.	F.C.	L.C.
I. Construction Base Cost	54,442	67,110	215,491	353,950	200,435	373,463	94,477	178,244	0	0	0	0	112,304	165,866	144,591	223,923	59,571	96,735
1. Preparatory Works	0	0	20,665	16,098	0	0	0	0	0	0	0	0	14,226	7,062	0	0	0	0
2. Main Civil Works	32,939	18,138	105,913	72,478	114,305	86,536	52,310	38,242	0	0	0	0	42,677	21,188	71,129	35,313	28,452	14,125
Sub-Total	32,939	18,138	126,578	88,576	114,305	86,536	52,310	38,242	0	0	0	0	56,903	28,250	71,129	35,313	28,452	14,125
7. Price Contingency (3%F.C. & 8%L.C.)	21,504	48,972	88,913	265,374	86,130	286,927	42,167	140,002	0	0	0	0	55,400	137,616	73,462	188,610	31,120	82,610
II. Compensation Cost	0	15,910	0	0	0	0	0	0	0	0	0	9,867	0	0	0	0	0	0
1. Compensation	0	4,300	0	0	0	0	0	0	0	0	0	1,815	0	0	0	0	0	0
2. Price Contingency (8%L.C.)	0	11,610	0	0	0	0	0	0	0	0	0	8,052	0	0	0	0	0	0
III. Administration Cost	0	33,897	0	28,443	0	13,080	0	14,126	0	5,939	0	25,658	0	20,783	0	7,482	0	8,081
1. Administration	0	9,161	0	7,118	0	3,031	0	3,031	0	1,180	0	4,720	0	3,540	0	1,180	0	1,180
2. Price Contingency (8%L.C.)	0	24,736	0	21,325	0	10,049	0	11,096	0	4,760	0	20,939	0	17,244	0	6,302	0	6,901
IV. Engineering Cost	2,395	2,953	7,934	12,743	8,819	16,432	4,157	7,843	17,466	23,465	0	0	3,706	5,474	6,362	9,853	2,621	4,256
1. Detailed Design	0	0	0	0	0	0	0	0	9,389	4,661	0	0	0	0	0	0	0	0
2. Construction Supervision	1,449	798	4,660	3,189	5,029	3,808	2,302	1,683	0	0	0	0	1,878	932	3,130	1,554	1,252	622
3. Price Contingency (3%F.C. & 8%L.C.)	946	2,155	3,273	9,554	3,790	12,625	1,855	6,160	8,077	18,803	0	0	1,828	4,542	3,232	8,299	1,369	3,635
V. Physical Contingency (10% of Items I, II& IV)	5,684	8,597	22,342	36,669	20,925	38,990	9,863	18,609	1,747	2,346	0	987	11,601	17,134	15,095	23,378	6,219	10,099
VI. Total (Items I, II, III, IV & V)	62,521	128,467	245,767	431,805	230,179	441,965	108,498	218,822	19,213	31,751	0	36,512	127,611	209,257	166,048	264,635	68,412	119,171
VII. Value Added Tax (10% of Item VI)	0	19,099	0	67,757	0	67,214	0	32,732	0	5,096	0	3,651	0	33,687	0	43,068	0	18,758
VIII. Grand Total	62,521	147,566	245,767	499,562	230,179	509,180	108,498	251,554	19,213	36,847	0	40,164	127,611	242,944	166,048	307,704	68,412	137,929

Notes : *1 Price Level in July 1994
*2 Conversion Rate - 1.00 US$ = 2,175 Rp. : 1 Yen = 21.90 Rp.
*3 Figures may not add up to totals due to rounding