TABLES

Table 1 CITY/TOWN DEFINED IN THE STUDY

Sabah			Sarawak		
City/Town	City No.	Basin No.	City/Town	City No.	Basin No.
Tawau	201	207	Limbang	212	229
Semporna	202	208	Marudi	213	230
Lahad Datu	203	209	Miri	214	231
Sandakan	204	212	Bintulu	215	236
Ranau	205	213	Sibu	216	241
Kudat	206	217	Sarikei	217	241
Kota Belud	207	218	Serian	218	245
Kota Kinabalu	208	220	Kuching	219	246
Papar	209	221			
Keningau	210	224			
Labuan	211	225			

Remarks; (1) "City/Town" is defined as the town of which population in 2000 is estimated to be 10,000 and more.

(2) "Basin No." shows the Basin in which the city/town is located.

Table 2 PWD WATER SUPPLY IN SABAH IN 1980

Water Works	Type of Supply /1	Design Capacity (m^3/d)	Estimated Served Population	Water Delivered (m^3/d)	Daily Per Capita Supply (lpcd)	No. of Connection
Kota Kinabalu	R.A.B.D.	45,500	118,991	42,725	359	19,049
Sandakan	R.H.A.B.D.	20,475	64,709	20,475	316	10,641
Tawau	R.A.B.D.	13,650	35,245	13,332	378	6,640
Labuan	H.A.B.D.	9,100	14,928	5,005	335	2,379
Papar	R.A.B.D.	2,275	14,616	1,638	112	2,436
Lahad Datu	R.A.B.D.	4,550	11,076	2,503	226	1,651
Keningau	R.A.B.D.	1,365	8,618	1,775	206	1,082
Semporna	W.R.A.B.D.	3,413	5,350	1,684	315	775
Ranau	R.A.B.D.	683	5,213	1,047	201	728
Kota Belud	W.D.	2,730	7,245	1,729	239	1,505
Kudat	I.A.C.D.	3,276	7,526	2,594	345	1,416
Urban Total		107,017	293,517	94,507	322	48,302
Tamparuli	R.A.B.D.	3,185	7,954	3,640	458	1,337
Beaufort	R.S.A.B.D.	1,638	11,316	2,230	197	1,589
Tenom	R.S.A.B.D.	1,638	5,507	956	174	704
Sipitang/Mesapol	R.A.B.D.	455	2,990	455	152	481
Westom/Lingungan	R.A.B.D.	728	1,326	228	172	175
Tuaran	R.A.C.D.	2,275	6,082	1,047	172	941
Kuala Penyu	H.A.D.	455	1,000	137	137	200
Kunak	S.C.D.	455	1,787	319	179	320
Membakut	R.A.C.D.	2,275	4,725	319	68	748
Tambunan	R.A.C.D.	546	4,029	319	79	665
Nabawan	R.B.D.	546	722	137	190	263
Bingkor	R.A.B.D.	1,138	2,188	728	333	420
Kota Marudu	R.A.B.D.	1,138	1,512	546	361	301
Beluran	R.A.B.D.	1,138	480	46	96	80
Rural Total		17,610	51,618	11,107	215	8,224
Total		124,627	345,135	105,614	306	56,526

Remarks; /1 : Type of Supply
A - Coagulation & Sedimentation
B - Rapid Gravity Filters
C - Pressure Filters
D - Chlorination
S - Spring
W - Well
I - Impounded Reservoir
R - River
H - Boreholes

Source; PWD Headquarters, Kota Kinabalu, Sabah State

Table 3 PWD WATER SUPPLY IN SABAH FROM 1970 TO 1980

Year	No. of Water Works	Served Population	Design Capacity (m^3/d)	Daily Supply (m^3/d)	Daily Per Capita Supply (lpcd)	No. of Connection
1970	16	148,400	29,200	31,100	210	20,606
1971	16	163 380	29,200	37,000	226	23,153
1972	18	184,680	55,200	44,300	240	26,552
1973	20	203,360	56 600	53,200	262	30,120
1974	21	218,600	64,700	59,700	273	32,988
1975	23	255,460	71,600	64,400	252	35,638
1976	25	274,560	75,600	68,800	251	41,439
1977	25	293,410	98,800	74,300	253	45,120
1978	25	308,800	117,000	78,400	254	48,230
1979	25	326,650	119,300	95,600	293	53,758
1980	25	345,140	124,600	105,600	306	56,526

Source; PWD Headquarters, Kota Kinabalu, Sabah State

Table 4 RURAL ENVIRONMENTAL SANITATION PROGRAM IN SABAH

Activity		1970	2nd Malaysia Plan 1971	1972	1973	1974	1975	3rd Malaysia Plan 1976	1977	1978	1979	1980	Grand Total
1. Wells	a	-	-	-	1	12	50	42	80	75	133	141	534
	b	-	-	-	200	2,638	3,120	8,383	6,398	11,187	17,618	15,089	64,633
2. Rain Water Collection	a	-	-	-	-	-	-	-	-	-	137	14	151
	b	-	-	-	-	-	-	-	-	-	1,790	100	1,890
3. Gravity Feed	a	-	-	7	12	13	15	21	47	66	69	71	321
	b	-	-	1,171	3,837	3,655	4,488	5,690	8,724	14,989	15,209	15,892	73,655
4. Hydraulic Ram	a	-	-	-	-	-	-	-	-	-	-	-	-
	b	-	-	-	-	-	-	-	-	-	-	-	-
5. Infiltration Gallery	a	-	-	-	-	-	-	-	-	1	-	-	1
	b								-	300	-	-	300
6. Latrines	a	-	-	149	299	304	433	798	1,438	2,286	3,060	4,062	12,829
	b	-	-	745	1,495	1,520	2,165	3,990	7,190	11,430	15,300	20,310	64,145
7. Total Water	a	-	-	7	13	25	65	63	127	142	339	226	1,007
	b	-	-	1,171	4,037	6,293	7,608	14,073	15,122	26,476	34,617	31,081	140,478

Remarks; a: Number constructed
b: Population served

Source; Ref. SD 4

Table 5 RURAL ENVIRONMENTAL SANITATION PROGRAM IN SARAWAK

Activity		2nd Malaysia Plan 1970	1971	1972	1973	1974	1975	3rd Malaysia Plan 1976	1977	1978	1979	1980	Grand Total
1. Wells	a	-	63	60	36	22	42	30	20	35	4	7	319
	b	-	1,966	13,677	6,272	2,451	6,828	2,684	1,836	5,993	448	1,543	43,698
2. Rain Water Collection	a	-	1	-	1	1	17	556	879	1,113	632	771	3,971
	b	-	260	-	25	10	237	2,752	3,140	11,794	2,931	2,802	23,951
3. Gravity Feed	a	-	34	61	45	78	148	115	120	209	207	211	1,228
	b	-	11,053	15,784	12,879	19,732	34,444	32,359	28,592	54,989	63,438	37,717	310,987
4. Hydraulic Ram	a	-	2	5	4	5	5	6	1	-	1	1	30
	b	-	497	1,234	1,857	998	1,053	1,846	50	-	194	307	8,036
5. Pump (mechanical)	a	-	3	1	-	1	1	3	1	3	10	1	24
	b	-	848	900	-	2,000	1,354	786	154	625	1,405	35	8,107
6. Latrines	a	-	1,011	2,617	2,273	3,335	4,086	5,888	7,357	15,081	14,367	11,373	67,388
	b	-	5,055	13,085	11,365	16,675	20,430	29,440	36,785	75,405	71,835	56,865	336,940
7. Total Water	a	-	39	67	49	84	154	124	122	212	218	213	1,282
	b	-	12,398	17,918	14,736	22,730	36,851	34,991	28,796	55,614	65,037	38,059	327,130

Remarks; a: Number constructed
b: Population served

Source; Ref. SD 4

Table 6 RURAL WATER SUPPLY UNDER THE RESP[/1] IN THE STATES OF SABAH AND SARAWAK

1. Sabah

As of End of Year	No. of Water Works	Population Served
1970	Nil	Nil
1975	99 Wells 51 Gravity Feed	25,620
1980	513 Wells 320 Gravity Feed	146,500

Fourth Malaysia Plan (1981 - 1985):

Residency	No. to be Built Wells	No. to be Built G.F./2	Population to be served	Capital Cost
Tawau	150	-	32,500	Break-up of Federal and State Allocation not known.
Sandakan	100	50	24,800	
West Coast	200	125	71,500	
Interior	100	75	25,100	
Labuan	50	-	3,200	Estimated total allocation is M$1.5 x 10^6
Total	600	200	157,100	

Source; Medical Services (Medical Department), Sabah

2. Sarawak

As of End of Year	No. of Waterworks	Served Population (at time of Construction)
1970	179	28,354
1975	763	132,792
1980	1,826	295,047

Fourth Malaysia Plan (1981 - 1985):

Division	No. of Waterworks	Population to be served	Capital Cost (M10^6) Federal Grant	State Fund	Total
1st					
2nd					
3rd	Breakdown not available	Breakdown not available	Breakdown not available		
4th					
5th					
6th					
7th					
Total	1,250 kpgs. approx.	200,000 approx.			M$10 x 10^6 approx.

Source; Medical Services (Medical Department), Sarawak

Remarks; /1: Rural Environmental Sanitation Program
/2: Gravity Feed

Table 7 WATER DEMAND PROJECTION OF PROCESSING WATER IN PALM OIL MILLS IN SABAH (1/4)

Name of Mill	Merotai	Bal	Apas Balang	Mostyn Keiak	Sabah Agr'l Dev't
Owner	SLDB	Private	SLDB	Private	Private
District No.	202	202	202	202	203
Basin No.	206	207	207	208	208
Processing Schedule (FFB 10^3 ton/y)					
1980	-	144	258	36	48
1985	-	144	288	58	48
1990	-	144	288	58	48
1995	72	144	288	58	48
2000	144	144	288	58	48
Water Demand (10^6 m^3/y)					
1980	-	0.12	0.21	0.03	0.04
1985	-	0.12	0.23	0.05	0.04
1990	-	0.12	0.23	0.05	0.04
1995	0.06	0.12	0.23	0.05	0.04
2000	0.12	0.12	0.23	0.05	0.04

Note; Water Demand = Processing Schedule x 0.8 m^3/FFB ton

Table 8 WATER DEMAND PROJECTION OF PROCESSING WATER IN PALM OIL MILLS IN SABAH (2/4)

Name of Mill	Giram	Silabukan	Silabukan	Tomanggong	Suan Lamba
Owner	Private	SLDB	SLDB	Private	SLDB
District No.	203	204	204	205	206
Basin No.	208	209	209	210	212
Processing Schedule (FFB 10^3 ton/y)					
1980	20	59	-	78	61
1985	58	88	-	127	70
1990	58	115	-	144	115
1995	58	115	167	144	115
2000	58	115	288	144	115
Water Demand (10^6 m^3/y)					
1980	0.02	0.05	-	0.06	0.05
1985	0.05	0.07	-	0.10	0.06
1990	0.05	0.09	-	0.12	0.09
1995	0.05	0.09	0.13	0.12	0.09
2000	0.05	0.09	0.23	0.12	0.09

Note; Water Demand = Processing Schedule x 0.8 m^3/FFB ton

Table 9 WATER DEMAND PROJECTION OF PROCESSING WATER IN PALM OIL MILLS IN SABAH (3/4)

Name of Mill	Sungai Manila	Sungai Majang	Sap:	Sabah	Pamol
Owner	SLDB	Private	SLDB	Private	Private
District No.	206	206	207	207	207
Basin No.	212	212	213	213	213
Processing Schedule (FFB 10^3 ton/y)					
1980	115	-	-	86	144
1985	115	86	-	86	144
1990	115	86	40	86	144
1995	115	86	113	86	144
2000	115	86	200	86	144
Water Demand (10^6 m^3/y)					
1980	0.09	-	-	0.07	0.12
1985	0.09	0.07	-	0.07	0.12
1990	0.09	0.07	0.03	0.07	0.12
1995	0.09	0.07	0.09	0.07	0.12
2000	0.09	0.07	0.16	0.07	0.12

Note; Water Demand = Processing Schedule x 0.8 m^3/FFB ton

Table 10 WATER DEMAND PROJCECTION OF PROCESSING WATER IN PALM OIL MILLS IN SABAH (4/4)

Name of Mill	Langkon	Beaufort
Owner	SLDB	SLDB
District No.	210	220
Basin No.	217	223
Processing Schedule (FFB 10^3 ton/y)		
1980	-	76
1985	72	115
1990	109	115
1995	120	115
2000	120	115
Water Demand (10^6 m^3/y)		
1980	-	0.06
1985	0.06	0.09
1990	0.09	0.09
1995	0.10	0.09
2000	0.10	0.09

Note; Water Demand = Processing Schedule x 0.8 m^3/FFB ton

Table 11 WATER DEMAND PROJECTION OF PROCESSING WATER IN RUBBER FACTORIES IN SABAH

Name of Mill	Ball Estate	Patatan Crumb	Papar SMR	Tenom SMR	Kudat SMR
Owner	Private	RFB	RFB	JV of RFB & Private Sector	RFB
District No.	202	214	213	221	209
Basin No.	207	220	219	224	217
Processing Schedule (DRC ton/y)					
1980	3,050	5,200	-	750	-
1985	3,300	-	5,000	3,000	-
1990	3,300	-	10,000	7,500	-
1995	7,500	-	10,000	10,000	2,500
2000	7,500	-	10,000	15,000	7,500
Water Demand (10^6 m^3/y)					
1980	0.14	0.23	-	0.03	-
1985	0.15	-	0.23	0.14	-
1990	0.15	-	0.45	0.34	-
1995	0.34	-	0.45	0.45	0.11
2000	0.34	-	0.45	0.68	0.34

Note; Water Demand = Processing Schedule x 18 m^3/DRC ton x 2.5/1

/1: To cover private small holders around the factories.

Table 12 RECURRENT REVENUE AND EXPENDITURE OF PWD WATER SUPPLY IN SABAH

Unit: M$10^3

Operation and Maintenance	1978	1980	(Estimate) 1981
(1) Revenue			
1. Sales of Water	6,142	8,500	10,000
2. Installation & Connection	75	85	90
3. Other Receipts	213	100	110
Total	6,430	8,685	10,200
(2) Expenditure			
1. Personnel Costs	3,488	5,806	7,222
2. Electricity & Fuel	2,722	3,536	3,972
3. Chemicals	800	1,144	1,439
4. Hire of Plant & Vehicles	481	954	1,000
5. Spares & Repairs	441	660	860
6. Transfer to Renewal Fund	614	850	1,000
7. Others	608	1,296	1,323
Total	9,154	14,246	16,816
(1) - (2)	-2,724	-5,561	-6,616

Renewal	1978	1980	(Estimate) 1981
(1) Revenue			
1. Receipts from Water Sales	614	850	1,000
(2) Expenditure			
1. Pumps & Meters	106	200	250
2. Pipelines	69	100	100
3. Water Tanks	64	100	100
4. Meter	51	100	100
5. Others	62	490	600
Total	352	990	1,150
(1) - (2)	262	-140	-150

Source; PWD Headquarters Kota Kinabalu, Sabah

Table 13 RECURRENT REVENUE AND EXPENDITURE OF PWD WATER SUPPLY IN SABAH, BREAKDOWN OF PWD DIVISIONAL OFFICES

Unit: M$10^3

Divisional Office	1975 Revenue (Billing) /3	1975 Expenditure Per-sonnel	1975 Expenditure Other O & M	1975 Expenditure Total	1980 Revenue (Billing) /3	1980 Expenditure Per-sonnel	1980 Expenditure Other O & M	1980 Expenditure Total
West Coast (S) K.K. /1	2,915	724	1,878	2,602	3,858	1,497	2,719	4,216
Sandakan	1,415	471	836	1,307	1,957	752	1,711	2,463
Tawau	1,333	376	645	1,021	1,688	668	1,262	1,930
Labuan	353	134	224	358	645	238	427	665
Interior	156	243	187	430	317	518	303	821
Beaufort	159	172	75	247	291	279	296	575
West Coast (N) K.B. /2	138	239	207	446	448	573	508	1,081
Kudat	109	134	78	212	240	320	344	664
Total	6,578	2,493	4,130	6,623	9,444	4,845	7,570	12,415

Remarks; /1: West Coast South Division, Kota Kinabalu
/2: West Coast North Division, Kota Belud
/3: Not the received amount but the billing amount

Source; PWD Headquarters, Kota Kinabalu, Sabah State

Table 14 PUBLIC WATER SUPPLY IN SARAWAK IN 1980

Water Works	Type of Supply /1	Design Capacity (m^3/d)	Water Delivered from Works (m^3/d)	Daily Water Consumption (m^3/d)	Served Population	Daily Per Capita Consumption (l pcd)
Serian	G.C.	1,183	1,042	1,015 /3	3,401	298
Miri	R.P.T.C.F.	9,100	8,504	9,291 /3	37,000	251
Bintulu	R.P.T.C.F.	4,550	3,322	2,530	10,000	253
Marudi	R.P.T.C.F.	1,310	1,183	924	4,800	192
Limbang	R.P.G.T.F.	1,424	1,808	1,627	13,000	125
Sarikei	R.P.T.F.	4,550	2,366	2,343	18,000	130
PWD Sub Total		22,117	18,225	17,730	86,201	206
Kuching Water Board	R.P.T.F.	54,330	50,780	41,820	190,370	220
Sibu Water Board	R.P.T.F.	27,300	19,500	16,170	93,000	174
Water Board Sub Total		81,630	70,280	57,990	283,370	205
Urban Total		103,747	88,505	75,720	369,571	205
Tapah/Beratok	R.P.T.	2,184	1,465)	1,452	6,507	137
Siburan	R.P.C.	946	410)		5,281	156
Triboh	G.C.	273	99	25	562	44
Simunjan	G.T.	983	760	528	3,865	137
Sematan	R.P.T.	655	146	137	878	155
Tabakang	R.P.T.	655	396	350	1,369	256
Siniawan	R.P.T.	655	68	55	355	154
Sri Aman	R.P.T.F.	4,550	4,095	3,003	14,500	207
Melugu	R.P.T.F.	655	319	305	2,141	142
Skrang	R.T.P.	655	105	100	1,315	76
Betong	R.P.T.F.	983	605	546	4,418	124
Saratok	R.P.T.	1,092	755	719	7,015	102
Engkilili	R.P.T.	655	396	355	2,024	175
Lubok Antu	R.P.T.	655	123	114	883	129
Roban	R.P.T.	655	178	164	1,660	99
Mukah	R.P.T.F.	3,413	1,092	978	12,000	82
Kanowit	R.P.T.F.	546	410	373	3,000	124
Sibintek	R.P.T.	655	237	216	1,500	158
Dalat	R.P.T.	1,092	259	246	3,200	77
Balingian	R.P.T.	983	64	55	530	103
Long Lama	R.P.T.C.	655	387	255	900	283
Bario /2	R.G.	n.a.	n.a.	n.a.	n.a.	n.a.
Bekenu /2	R.P.T.C.	1,310	369	191	950	201
Bukit Peninjau	R.P.T.C.	n.a.	n.a.	n.a.	n.a.	n.a.
Lawas	R.P.G.T.F.	983	737	623	5,000	125
Panduruan	R.P.T.	228	n.a.	77	980	79
Bintang	R.P.T.F.	983	692	687	8,000	86
Meradong	R.P.T.F.	655	228	37	270	154
Julau	R.P.T.F.	655	473	441	1,850	239
Belawai/Jerijeh	P.T.F.	328	n.a.	n.a.	742	n.a.
Lundu	G.C.	n.a.	1,060	819	5,561	147
Santubong	G.C.	n.a.	n.a.	223	816	273
Kapit	R.P.T.F.	1,310	746	737	4,650	159
Song	R.P.T.	655	309	300	2,650	113
Institutions		5,242	n.a.	2,071	n.a.	n.a.
Rural Total		35,944	16,983	16,182	105,372	154
Total		139,691	105,488	91,902	474,943	194

Remarks; /1: Type of Supply: R - River, I - Impounded, U - Underground water, P - Pumped, G - Gravity, C - Chlorinated, T - Fully Treated, F - Fluoridated

/2: Also supplies to Bukit Peninjau LDS

/3: Shell water supply of 2,000 m^3/d included.

Source; PWD Headquarters, Kuching, Sarawak

Table 15 PWD WATER SUPPLY IN SARAWAK IN 1970, 1975 AND 1980

Year	No. of Water Works	Designed Capacity (m^3/d)	Water Delivered From Works (m^3/d)	Consumption (m^3/d)	No. of Metered Connections
1970	19	36,450	28,050	26,220	18,400
1975	25	42,670	31,690	28,860	20,415
1980	40	58,100	35,210	33,950	22,725

Source; PWD Headquarters Kuching, Sarawak State

Table 16 BREAKDOWN OF WATER CONSUMPTION BY WATER USE IN KUCHING WATER BOARD

Unit: m^3/d

	1970	1975	1980	Proportion (%)
Water Sales				
Domestic	10,610	16,380	23,750	(47)
Commercial/Industrial	9,240	13,420	17,430	(34)
Others	770	410	640	(1)
Total Water Sales	(20,620)	(30,210)	(41,820)	(82)
UAF	1,810	6,330	8,960	(18)
Total Water Delivered	23,430	36,540	50,780	(100)

Table 17 PUBLIC WATER SUPPLY OF KUCHING WATER BOARD IN SARAWAK

Year	Design Capacity (m^3/d)	Daily Water Supply (m^3/d)	Daily Water Consumption (m^3/d)	Estimated Served Popu-lation	Daily Per Capita Consump-tion (lpcd)	Unaccounted-For-Ratio (%)
1970	23,210	22,430	20,610	115,000	179	8
1975	38,580	36,540	30,210	178,000	170	17
1980	54,330	50,780	41,810	190,370	220	18
Average Annual Growth Rate (%)						
1970-1980	8.9	8.5	7.3	5.2	2.1	

Table 18 PUBLIC WATER SUPPLY OF SIBU WATER BOARD IN SARAWAK

Year	Design Capacity (m^3/d)	Daily Water Supply (m^3/d)	Daily Water Consumption (m^3/d)	Estimated Served Pupu-lation	Daily Per Capita Consump-tion (lpcd)	Unaccounted-For-Ratio (%)
1970	15,930	7,480	5,930	44,000	135	21
1975	15,930	11,760	10,320	66,800	154	12
1980	27,300	19,500	12,630	93,000	136	17
Average Annual Growth Rate (%)						
1970-1980	5.5	10.0	7.9	7.8	0.1	

Table 19 BREAKDOWN OF WATER CONSUMPTION BY WATER USE IN SIBU WATER BOARD

Unit: m^3/d

	1970	1975	1980	Proportion (%)
Water Sales				
Domestic	3,740	6,400	10,050	(52)
Commercial/Industrial	600	640	1,540	(8)
Commercial	1,520	3,240	4,460	(23)
Others	70	40	120	(1)
Total Water Sales	(5,930)	(10,320)	(16,170)	(83)
UAF	1,550	1,440	3,330	(17)
Total Water Delivered	7,480	11,760	19,500	(100)

Table 20 WATER DEMAND PROJECTION OF PROCESSING WATER IN PALM OIL MILLS IN SARAWAK (1/2)

Name of Mill	Danau	Sarawak	Niah	Suai	Tatau
Owner	Small Holder	Estate	SLDB	SLDB	ESTATE
District No.	225	227	227	227	228
Basin No.	229	232	233	234	237
Process Schedule (FFB 10^3 ton/y)					
1980	9	79	108	-	-
1985	2	96	266	-	-
1990	2	96	288	132	38
1995	-	96	288	144	92
2000	-	96	288	144	96
Water Demand (10^6 m^3/y)					
1980	0	0.06	0.09	-	-
1985	0	0.08	0.21	-	-
1990	0	0.08	0.23	0.11	0.03
1995	-	0.08	0.23	0.12	0.07
2000	-	0.08	0.23	0.12	0.08

Note; Water Demand = Processing Schedule x 0.8 m^3/FFB ton

Table 21 WATER DEMAND PROJECTION OF PROCESSING WATER IN PALM OIL MILLS IN SARAWAK (2/2)

Name of Mill	Makah	Julau	Lemanak	Serian	Bau/Lundu
Owner	SLDB	SALCRA	SALCRA	SALCRA	SALCRA
District No.	229	239	242	245	247
Basin No.	239	241	244	245	246
Processing Schedule (FFB 10^3/ton/y)					
1980	1	-	-	-	-
1985	85	-	28	-	-
1990	140	-	92	-	11
1995	192	126	96	49	88
2000	192	192	96	142	96
Water Demand (10^6 m^3/y)					
1980	0	-	-	-	-
1985	0.07	-	0.02	-	-
1990	0.11	-	0.07	-	0
1995	0.15	0.10	0.08	0.04	0.07
2000	0.15	0.15	0.08	0.11	0.08

Note; Water Demand = Processing Schedule x 0.8 m^3/FFB ton

Table 22 WATER DEMAND PROJECTION OF PROCESSING WATER IN RUBBER FACTORIES IN SARAWAK

Name of Factory	Lubai Tengah	Lambir	Meradong	Skrang	Lim Liang Kee
Owner	SLDB	SLDB	SLDB	SLDB	Private
District No.	225	227	238	243	246
Basin No.	229	231	241	244	246
Processing Schedule (DRC ton/y)					
1980	220	450	650	950	510
1985	320	450	700	950	510
1990	320	450	700	950	510
1995	340	450	700	950	510
2000	930	450	700	950	519
Water Demand (10^6 m^3/y)					
1980	0.02	0.04	0.06	0.09	0.05
1985	0.03	0.04	0.06	0.09	0.05
1990	0.03	0.04	0.06	0.09	0.05
1995	0.03	0.04	0.06	0.09	0.05
2000	0.08	0.04	0.06	0.09	0.05

Note; Water Demand = Production x 18 m^3/DRC ton x 5/1

/1: To cover the private small holders around the factories.

Table 23 WATER RATES FOR DOMESTIC USE IN SARAWAK EFFECTIVE IN 1980

Water Board/Work	Water Rate (M$/m^3)	Effective from
(1) Water Boards		
1. Kuching	0.40	1 Apr. 1977
2. Sibu	0.40	1 Apr. 1977
(2) Water Works		
1. Siburan/1	0.22	1 Jan. 1970
2. Tapah/Beratok	0.33	1 Mar. 1975
3. Serian	0.38	1 Nov. 1962
4. Lundu/1	0.23	1 May 1959
5. Simunjan	0.33	1 May 1974
6. Sematan	0.33	1 Apr. 1975
7. Triboh L.D.S.	0.33	1 Nov. 1970
8. Tebakang	0.33	1 Oct. 1976
9. Simanggang	0.33	1 May 1959
10. Betong	0.33	1 Aug. 1969
11. Saratok	0.33	1 June 1973
12. Melugu L.D.S.	0.33	1 Nov. 1970
13. Skrang L.D.S.	0.33	1 Nov. 1970
14. Lubok Antu	0.33	1 Sep. 1975
15. Engkilili	0.33	1 May 1976
16. Roban	0.33	1 Feb. 1979
17. Kanowit	0.37	1 Sep. 1969
18. Mukah	0.33	1 Feb. 1979
19. Sibintek L.D.S.	0.33	1 Nov. 1970
20. Balingian	0.33	1 Feb. 1979
21. Dalat	0.33	1 July 1979
22. Miri	0.27	1 Jan. 1960
23. Bintulu	0.33	1 Mar. 1976
24. Marudi	0.37	1 May 1961
25. Long Lama	0.33	1 June 1975
26. Bekenu	0.33	1 Mar. 1977
27. Limbang	0.33	1 June 1962
28. Lawas	0.34	1 Jan. 1963
29. Sarikei	0.33	1 Jan. 1960
30. Binatang	0.33	1 July 1960
31. Maradong L.D.S.	0.33	1 Nov. 1970
32. Julau	0.33	1 June 1976
33. Kapit	0.38	1 July 1960
34. Song	0.33	1 Feb. 1979

Remarks; /1: Chlorinated treatment only

Note; (1): All other water boards or water works than remarked /1 employ full treatment.

(2): Calculated assuming that one household consumes water of 20 m^3/month.

Source; PWD Headquarters Sarawak, Kuching

Table 24 RECURRENT REVENUE AND EXPENDITURE OF PWD WATER SUPPLY SECTION AND KUCHING AND SIBU WATER BOARDS

Unit: M$10^3

	Year	Revenue	Expenditure	Balance
PWD Water Supply Section	1977	2,576	2,609	-33
	1978	2,797	3,063	-266
	1979	3,249	3,882	-633
	1980	3,443	5,642	-2,199
Kuching Water Board	1970	3,051	2,155	896
	1975	4,615	3,458	1,157
	1980	10,132	9,642	490
Sibu Water Board	1975	1,528	1,168	360
	1980	4,114	3,725	389

Source; PWD Headquarters, Kuching, Sarawak
Kuching Water Board
Sibu Water Board

Table 25 4MP WATER SUPPLY EXTENSION PROJECTS IN SABAH

Water Supply Project	Continuation/ New	Capacity Added (m^3/d (mgd))	Com- mission	Demand to be met up to	Capital Cost (M$ million)	Fund Source
1. Kota Kinabalu Phase II	Continuation from TMP	-	1982	1981-1983	6.0	State
2. Kota Kinabalu Stage I	- do -	54,000 (12.0)	1983	1984-1993	77.0	ADB
3. Sandakan Stage I - Interim	- do -	18,000 (4.0)	1983	1981-1984	15.0	State
4. Labuan	- do -	18,000 (4.0)	1983	1990	27.5	State
5. Tawau Stage I	- do -	20,000 (4.5)	1983	1993	10.0	State & ADB
6. Lahad Datu	- do -	9,000 (2.0)	1983	1993	14.0	State
7. Rural Water Supplies	- do -	-/1	1983	-	27.6	State & Federal
8. Truck Main Reinforcement	- do -	-	1981	-	0.5	State
9. Sandakan Stage I	New to 4MP	36,000 (8.0)	-/1	1985-1995	80.0	Not decided
10. Rural Water Supplies	- do -	-	1985	-	81.5	State & Federal
11. Truck Main Reinforcement	- do -	-/2	1985	-	15.0	State
Total		155,000 (34.5)			354.1	

Remarks; /1: Feasibility study being undertaken and the project is not anticipated to be completed in 4MP period.
/2: Trunk main reinforcement in Kota Kinabalu, Sandakan, Tawau, Labuan and Lahad Datu.

Note; Figures in the above table are still under review and not authorized yet.

Source; PWD Headquarters Kota Kinabalu, Sabah State

Table 26 4MP WATER SUPPLY EXTENSION PROJECTS IN SARAWAK

A. PWD

Unit: M$10^3

Water Supply Project	Capacity Added (m^3/d (mgd))	Capital Cost & Finance F.L./1	F.G./2	S.F./3	Total
1. Bintulu	38,600 (8.5)	100,000	100	-	100,100
2. Miri	18,200 (4)	7,000	750	-	7,750
3. Sri Aman	9,100 (2)	-	500	5,000	5,500
4. Sarikei	4,550 (1)	3,000	350	2,170	5,520
5. Binatang	3,550 (0.78)	-	250	4,400	4,650
6. Limbang	3,140 (0.69)	-	400	6,000	6,400
7. Saratok	1,180 (0.26)	-	250	1,500	1,750
8. Marudi	960 (0.21)	-	66	2,347	2,413
9. Bekenu	960 (0.21)	-	400	1,981	2,381
10. Kapit	960 (0.21)	-	500	2,860	3,360
11. Kanowit	550 (0.12)	-	250	100	350
(Sub-Total)		(110,000)	(3,816)	(26,358)	(140,174)
12. Others					100,264
Total	81,750 (17.98)	120,000	29,000	91,438	240,438

B. Kuching Water Board

Water Supply Project	Capacity Added (m^3/d (mgd))	Capital Cost & Finance F.L./1	F.G./2	C.C./5	O.F./4	Total
1. Batu Kitang Phase II	27,300 (6)					7,000
2. Rural Area Extension		(Breakdown not available)				10,500
3. Service Reservoir						2,780
(Sub-Total)	(27,300)(6)					(20,280)
4. Others						12,800
Total	27,300 (6)	10,000	7,000	8,500	7,580	33,080

C. Sibu Water Board

Water Supply Project	Capacity Added (m^3/d (mgd))	Capital Cost & Finance F.L./1	F.G./2	O.F./4	Total
1. Sibu Expansion Phase II	18,200 (4)	-	-	3,145	3,145
2. Rural Area Extension		1,000	2,000	-	3,000
3. Water Main Extension		-	-	2,000	3,000
(Sub-Total)	(18,200)(4)	(1,000)	(2,000)	(5,145)	(8,145)
4. Others		-	-	1,255	1,255
Total	18,200 (4)	1,000	2,000	6,400	9,400

Remarks; /1: Federal Loan
/2: Federal Grant
/3: State Fund
/4: Own Fund
/5: Consumer's Contribution

Table 27 PROJECTION OF DISTRICT POPULATION BY CITY/TOWN AND RURAL AREA IN SABAH FOR CASE 1

District		City/Rural	Historical 1980	Projected 1985	1990	2000	Average Annual Growth Rate (%)
201. Pensiangan		Rural	9	10	11	12	1.4
202. Tawau	201.	Tawau	50	62	82	150	5.6
		Rural	82	101	122	140	2.7
		Total	132	163	204	290	4.0
203. Semporna	202.	Semporna	6	7	9	15	4.7
		Rural	56	70	85	101	3.0
		Total	62	77	94	116	3.2
204. Lahad Datu	203.	Lahad Datu	18	26	38	84	8.0
		Rural	41	47	53	59	1.8
		Total	59	73	91	143	4.5
205. Kinabatangan		Rural	29	35	41	47	2.4
206. Sandakan	204.	Sandakan	81	99	127	222	5.2
		Rural	49	54	58	62	1.2
		Total	130	153	185	284	4.0
207. Labuk/Sugut		Rural	36	38	39	41	0.7
208. Pitas		Rural	19	20	22	23	1.0
209. Kudat	206.	Kudat	12	16	21	43	6.6
		Rural	34	35	37	38	0.6
		Total	46	51	58	81	2.9
210. Kota Marudu		Rural	31	33	36	38	1.0
211. Kota Belud	207.	Kota Belud	5	7	9	18	6.6
		Rural	46	49	52	54	0.8
		Total	51	56	61	72	1.7
212. Ranau	205.	Ranau	5	7	9	19	6.9
		Rural	29	31	33	34	0.8
		Total	34	38	42	53	2.2
213. Tuaran		Rural	55	58	61	63	0.7
214. Kota Kinabalu	208.	Kota Kinabalu	71	97	134	271	6.9
		Rural	53	68	85	103	3.4
		Total	124	165	219	374	5.7
215. Penampang		Rural	43	48	53	58	1.5
216. Papar	209.	Papar	6	8	12	25	7.4
		Rural	40	42	43	44	0.5
		Total	46	50	55	69	2.0
217. Tambunan		Rural	16	18	18	19	0.9
218. Keningau	210.	Keningau	5	6	8	16	6.0
		Rural	43	49	56	62	1.8
		Total	48	55	64	78	2.5
219. Kuala Penyu		Rural	14	15	15	16	0.7
220. Beaufort		Rural	41	43	44	46	0.6
221. Tenom		Rural	30	32	33	34	0.6
222. Sipitang		Rural	14	14	15	16	0.7
223. Labuan	211.	Labuan	19	29	41	93	8.3
		Rural	10	11	11	12	0.9
		Total	29	40	52	105	6.6
		Urban Total	278	364	490	956	6.4
		Rural Total	820	921	1,023	1,122	1.6
		State Total	1,098	1,285	1,513	2,078	3.2

Table 28 PROJECTION OF DISTRICT POPULATION BY CITY/TOWN AND RURAL AREA IN SABAH FOR CASE 2

Unit: 10^3

District	City/Rural	Historical 1980	Projected 1985	1990	2000	Average Annual Growth Rate (%)
201. Pensiangan	Rural	9	10	11	14	2.2
202. Tawau	201. Tawau	50	61	77	124	4.6
	Rural	82	100	127	180	3.9
	Total	132	161	204	304	4.2
203. Semporna	202. Semporna	6	7	9	13	3.9
	Rural	56	71	89	129	4.3
	Total	62	78	98	142	4.2
204. Lahad Datu	203. Lahad Datu	18	25	36	69	6.9
	Rural	41	47	54	68	2.6
	Total	59	72	90	137	4.3
205. Kinabatangan	Rural	29	35	43	58	3.5
206. Sandakan	204. Sandakan	81	98	120	184	4.2
	Rural	49	54	59	67	1.6
	Total	130	152	179	251	3.3
207. Labuk/Sugut	Rural	36	38	40	42	0.8
208. Pitas	Rural	19	20	22	25	1.4
209. Kudat	206. Kudat	12	15	20	35	5.5
	Rural	34	36	37	39	0.7
	Total	46	51	57	74	2.4
210. Kota Marudu	Rural	31	34	36	40	1.3
211. Kota Belud	207. Kota Belud	5	7	9	15	5.6
	Rural	46	49	52	56	1.0
	Total	51	56	61	71	1.7
212. Ranau	205. Ranau	5	7	9	16	6.0
	Rural	29	31	33	37	1.2
	Total	34	38	42	53	2.2
213. Tuaran	Rural	55	58	61	66	0.9
214. Kota Kinabalu	208. Kota Kinabalu	71	96	127	225	5.9
	Rural	53	69	90	134	4.7
	Total	124	165	217	359	5.5
215. Penampang	Rural	43	49	55	66	2.2
216. Papar	209. Papar	6	8	11	21	6.5
	Rural	40	42	43	45	0.6
	Total	46	50	54	66	1.8
217. Tambunan	Rural	16	18	19	20	1.1
218. Keningau	210. Keningau	5	6	8	14	5.3
	Rural	43	50	58	73	2.7
	Total	48	56	66	87	3.0
219. Kuala Penyu	Rural	14	15	15	16	0.7
220. Beaufort	Rural	41	43	45	47	0.7
221. Tenom	Rural	30	32	33	35	0.8
222. Sipitang	Rural	14	14	15	16	0.7
223. Labuan	211. Labuan	19	29	39	77	7.2
	Rural	10	11	11	12	0.9
	Total	29	40	50	89	5.8
	Urban Total	278	359	465	793	5.4
	Rural Total	820	926	1,048	1,285	2.3
	State Total	1,098	1,285	1,513	2,078	3.2

Table 29 PROJECTION OF DISTRICT POPULATION BY CITY/TOWN AND RURAL AREA IN SARAWAK FOR CASE 1

Unit: 10^3

District	City/Rural	Historical 1980	Projected 1985	1990	2000	Average Annual Growth Rate (%)
224. Lawas	Rural	20	22	24	26	1.3
225. Limbang	212. Limbang	8	11	15	28	6.5
	Rural	18	20	22	24	1.4
	Total	26	31	37	52	3.5
226. Baram	213. Marudi	7	8	11	20	5.4
	Rural	47	56	65	72	2.2
	Total	54	64	76	92	2.7
227. Miri	214. Miri	55	70	94	177	6.0
	Rural	46	65	86	105	4.2
	Total	101	125	180	282	5.3
228. Bintulu	215. Bintulu	17	26	34	51	5.6
	Rural	42	47	52	57	1.5
	Total	59	73	86	108	3.1
229. Mukah	Rural	36	41	46	49	1.6
230. Oya/Dalat	Rural	23	26	28	31	1.5
231. Sibu	216. Sibu	88	117	164	331	6.8
	Rural	49	49	49	48	-0.1
	Total	137	166	213	379	5.2
232. Kanowit	Rural	29	32	35	37	1.2
233. Belaga	Rural	12	14	16	17	1.8
234. Kapit	Rural	39	46	53	59	2.1
235. Song	Rural	17	20	23	26	2.1
236. Matu/Daro	Rural	17	19	20	22	1.3
237. Binatang	Rural	30	33	36	38	1.2
238. Sarikei	217. Sarikei	13	19	28	62	8.1
	Rural	31	32	33	34	0.5
	Total	44	51	61	96	4.0
239. Julau	Rural	28	31	34	36	1.3
240. Kalaka	Rural	36	39	43	45	1.1
241. Saribas	Rural	42	46	49	52	1.1
242. Lubok Antu	Rural	21	23	25	26	1.1
243. Simanggang	Rural	63	68	72	75	0.9
244. Simunjan	Rural	38	42	46	49	1.3
245. Serian	218. Serian	4	6	8	17	7.5
	Rural	64	72	79	86	1.5
	Total	68	78	87	103	2.1
246. Kuching	219. Kuching	175	218	281	497	5.4
	Rural	143	158	173	215	2.3
	Total	318	376	454	712	4.2
247. Bau	Rural	33	35	37	38	0.7
248. Lundu	Rural	23	26	29	32	1.7
	Urban Total	367	475	635	1,183	6.0
	Rural Total	947	1,062	1,175	1,299	1.6
	State Total	1,314	1,537	1,810	2,482	3.2

Table 30 PROJECTION OF DISTRICT POPULATION BY CITY/TOWN AND RURAL AREA IN SARAWAK FOR CASE 2

Unit: 10^3

District	City/Rural	Historical 1980	Projected 1985	1990	2000	Average Annual Growth Rate (%)
224. Lawas	Rural	20	23	25	28	1.7
225. Limbang	212. Limbang	8	11	14	23	5.4
	Rural	18	20	22	27	2.0
	Total	26	31	36	50	3.3
226. Baram	213. Marudi	7	8	19	17	4.5
	Rural	47	56	66	88	3.2
	Total	54	64	76	105	3.4
227. Miri	214. Miri	55	69	89	147	5.0
	Rural	46	65	89	146	5.9
	Total	101	134	178	293	5.5
228. Bintulu	215. Bintulu	17	25	33	43	4.7
	Rural	42	48	53	64	2.1
	Total	59	73	86	107	3.0
229. Mukah	Rural	36	41	46	56	2.2
230. Oya/Dalat	Rural	23	26	29	35	2.1
231. Sibu	216. Sibu	88	116	156	275	5.9
	Rural	49	49	49	48	-0.1
	Total	137	165	205	323	4.4
232. Kanowit	Rural	29	32	35	40	1.6
233. Belaga	Rural	12	14	16	20	2.6
234. Kapit	Rural	39	46	54	71	3.0
235. Song	Rural	17	20	24	31	3.0
236. Matu/Daro	Rural	17	19	21	24	1.7
237. Binatang	Rural	30	33	36	41	1.6
238. Sarikei	217. Sarikei	13	18	26	52	7.2
	Rural	31	32	33	34	0.5
	Total	44	50	59	86	3.4
239. Julau	Rural	28	31	34	39	1.7
240. Kalaka	Rural	36	40	43	49	1.6
241. Saribas	Rural	42	46	50	57	1.5
242. Lubok Antu	Rural	21	23	25	28	1.4
243. Simanggang	Rural	63	68	73	80	1.2
244. Simunjan	Rural	38	42	46	54	1.8
245. Sarian	218. Serian	4	6	8	14	6.5
	Rural	64	72	80	97	2.1
	Total	68	78	88	111	2.5
246. Kuching	219. Kuching	175	215	266	412	4.4
	Rural	143	162	412	266	3.4
	Total	318	377	677	459	4.0
247. Bau	Rural	33	35	37	40	1.0
248. Landu	Rural	23	26	29	37	2.4
	Urban Total	367	468	602	983	5.0
	Rural Total	947	1,069	1,208	1,499	2.4
	State Total	1,314	1,537	1,810	2,482	3.3

Table 31 PROJECTION OF SUBURBAN RURAL POPULATION
(CASE 1)

Unit: 10^3

District	Rural	Historical 1980	Projected 1985	1990	1995	2000
(1) Sabah State						
211. Kota Belud	Rural Total	46	49	52	53	54
	Suburban Rural	2	2	2	2	2
	Isolated Rural	44	47	50	51	52
214. Kota Kinabalu	Rural Total	53	68	85	98	103
	Suburban Rural	48	62	77	89	93
	Isolated Rural	5	6	8	9	10
216. Papar	Rural Total	40	42	43	44	44
	Suburban Rural	9	9	10	10	10
	Isolated Rural	31	33	33	34	34
218. Keningau	Rural Total	43	49	56	60	62
	Suburban Rural	4	5	5	6	6
	Isolated Rural	39	44	51	54	56
(2) Sarawak State						
225. Limbang	Rural Total	18	20	22	23	24
	Suburban Rural	5	6	6	6	7
	Isolated Rural	13	14	16	17	17
231. Sibu	Rural Total	49	49	49	49	48
	Suburban Rural	5	5	5	5	5
	Isolated Rural	44	44	44	44	43
238. Sarikei	Rural Total	31	32	33	33	34
	Suburban Rural	5	5	5	5	5
	Isolated Rural	26	27	28	28	29
246. Kuching	Rural Total	136	162	191	207	216
	Suburban Rural	15	18	21	23	24
	Isolated Rural	121	144	170	184	192

Table 32 PROJECTION OF SUBURBAN RURAL POPULATION
(CASE 2)

Unit: 10^3

District	Rural	Historical 1980	Projected 1985	1990	1995	2000
(1) Sabah State						
211. Kota Belud	Rural Total	46	49	52	55	56
	Suburban Rural	2	2	2	2	2
	Remote Rural	44	47	50	53	54
214. Kota Kinabalu	Rural Total	53	69	90	111	134
	Suburban Rural	48	62	82	101	121
	Remote Rural	5	7	8	10	13
216. Papar	Rural Total	40	42	43	44	45
	Suburban Rural	9	9	10	10	10
	Remote Rural	31	33	33	34	35
218. Keningau	Rural Total	43	50	58	65	73
	Suburban Rural	4	5	5	6	7
	Remote Rural	39	45	53	59	66
(2) Sarawak State						
225. Limbang	Rural Total	18	20	22	25	27
	Suburban Rural	5	6	6	7	8
	Remote Rural	13	14	16	18	19
231. Sibu	Rural Total	88	116	156	206	275
	Suburban Rural	5	7	9	12	16
	Remote Rural	83	109	147	194	259
238. Sarikei	Rural Total	31	32	33	34	34
	Suburban Rural	5	5	5	5	5
	Remote Rural	26	27	28	29	29
246. Kuching	Rural Total	136	163	195	230	266
	Suburban Rural	15	18	22	25	29
	Remote Rural	121	145	173	205	237

Table 33 ESTIMATED DISTRIBUTION OF SERVED POPULATION IN SABAH IN 1980

Unit: 10^3

1. PWD

(1) Urban

	Total Population	Served Population Urban	S.R./1	Total	S.F./3 (%)
1. Sandakan	80.8	64.7	-	64.7	80
2. Labuan	18.8	14.9	-	14.9	79
3. Semporna	6.1	5.4	-	5.4	89
4. Kota Belud	5.2	5.2	2.0	7.2	100
5. Kota Kinabalu	70.8	70.8	48.2	119.0	100
6. Tawau	49.5	35.2	-	35.2	71
7. Papar	5.8	5.8	8.8	14.6	100
8. Lahad Datu	18.1	11.1	-	11.1	61
9. Keningau	4.7	4.7	3.9	8.6	100
10. Ranau	5.1	5.1	0.1	5.2	100
11. Kudat	12.0	7.5	-	7.5	63
Total	276.9	230.4	63.0	293.4	83

(2) Rural

Served Population I.R./2	Total
51.6	51.6

(3) PWD Total

Served Population Urban	S.R.	I.R.	Total
230.4	63.0	51.6	345.0

2. Medical Services

Served Population I.R.	Total
146.5	146.5

3. State Total

Total Population Urban	Rural	Served Population Urban	S.R.	I.R.	Total
277	822	230.4	63.0	198.1	491.5
	S.F. =	83%	100%	26%	45%

Remarks; /1: Suburban rural
/2: Isolated rural
/3: Service factor = (Served population in urban)/(Total population)

Table 34 ESTIMATED DISTRIBUTION OF SERVED POPULATION IN SARAWAK IN 1980

Unit: 10^3

1. PWD and Water Boards

(1) Urban	Total Population	Served Population Urban	S.R./1	Served Population Total	S.F./3 (%)
1. Sarian	4.1	3.4	-	3.4	83
2. Miri	54.6	37.0	-	37.0	68
3. Bintulu	17.0	10.0	-	10.0	59
4. Marudi	6.5	4.8	-	4.8	74
5. Limbang	8.3	8.3	4.7	13.0	100
6. Sarikei	13.0	13.0	5.0	18.0	100
7. Kuching	175.0	175.0	15.4	190.4	100
8. Sibu	88.2	88.2	4.8	93.0	100
Total	366.7	339.7	29.9	369.6	93

(2) Rural

Served Population I.R./2	Served Population Total
107.9	107.9

(3) PWD & W.B. Total

Served Population Urban	S.R.	I.R.	Total
339.7	29.9	107.9	477.5

2. Medical Services

Served Population I.R.	Served Population Total
295.0	295.0

3. State Total

Total Population Urban	Rural	Served Population Urban	S.R.	I.R.	Total
367	940	339.7	29.9	402.9	772.5
	S.F. =	93%	100%	44%	59%

Remarks; /1: Suburban rural
/2: Isolated rural
/3: Service factor = (Served population in urban)/(Total population)

Table 35 ESTIMATED AND PROJECTED SERVICE FACTOR

Unit: %

	Estimated	Projected for Case 1			Projected for Case 2		
	1980	1985	1990	2000	1985	1990	2000
I. Urban							
(1) Sabah							
1. Sandakan	80	85	90	100	85	90	95
2. Labuan	79	85	90	100	85	90	95
3. Semporna	89	90	95	100	90	95	100
4. Tawau	71	80	85	100	75	85	90
5. Lahad Datu	61	70	80	100	70	75	90
6. Kudat	63	70	80	100	70	80	95
7. Kota Belud	100	100	100	100	100	100	100
8. Kota Kinabalu	100	100	100	100	100	100	100
9. Papar	100	100	100	100	100	100	100
10. Keningan	100	100	100	100	100	100	100
11. Ranau	100	100	100	100	100	100	100
(2) Sarawak							
1. Serian	83	85	90	100	85	90	95
2. Miri	68	75	85	100	75	80	95
3. Bintulu	59	70	80	100	65	75	90
4. Marudi	74	80	85	100	80	85	95
5. Limbang	100	100	100	100	100	100	100
6. Sarikei	100	100	100	100	100	100	100
7. Kuching	100	100	100	100	100	100	100
8. Sibu	100	100	100	100	100	100	100
II. Rural							
Sabah	26	40	60	90	40	50	75
Sarawak	44	55	65	90	55	60	80
Suburban Rural	100	100	100	100	100	100	100

Table 36 ESTIMATED AND PROJECTED PER CAPITA DAILY USE OF DOMESTIC WATER

Unit: lpcd

	Estimated	Projected for Case 1		Projected for Case 2	
	1980	1990	2000	1990	2000
1. Urban Area					
A. Sabah					
1. Kota Kinabalu	190	200	230	195	220
2. Sandakan	139	200	230	195	220
3. Tawau	188	190	230	190	220
4. Labuan	183	190	220	185	210
5. Papar	67	190	220	185	210
6. Lahad Datu	135	190	220	185	210
7. Keningau	124	140	220	130	210
8. Semporna	136	140	220	140	210
9. Ranau	123	140	220	130	210
10. Kota Belud	106	140	220	130	210
11. Kudat	134	190	220	185	210
B. Sarawak					
1. Serian	153	160	220	160	210
2. Miri	158	190	230	185	220
3. Bintulu	163	190	220	185	210
4. Marudi	121	190	220	185	210
5. Limbang	98	190	220	185	210
6. Sarikei	92	190	220	185	210
7. Kuching	197	200	230	200	220
8. Sibu	153	200	230	195	220
2. Rural Area					
PWD Rural	75	125	175	115	155
MHS Rural	40	55	70	55	65
3. Non-Pipe-Served Area	40	40	40	40	40

Remarks; PCDU in suburban rural area was assumed to be the same as that of the city/town from which the suburban rural area is served its water.

Table 37 ESTIMATED SHARE OF RURAL POPULATION SERVED BY SURFACE WATER AND GROUNDWATER IN SABAH

Unit: %

	PWD Rural			MS/6 Rural			Non-pipe Supply			Rural Total/7		
	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000
(1) Share of Population to Total Rural Population	7/1	16/2	24/3	19/1	44	66	74/1	40/4	10/4	100	100	100
(2) Share of Population Served by:												
Surface Water	97/1	97	97	60/1	60	60	60/5	60	60	-	-	-
Groundwater	3/1	3	3	40/1	40	40	40/5	40	40	-	-	-
Total	100	100	100	100	100	100	100	100	100	-	-	-
(3) = (1) x (2)												
Surface Water	6.8	15.5	23.3	11.4	26.4	39.6	44.4	24.0	6.0	62.6	65.9	68.9
Groundwater	0.2	0.5	0.7	7.6	17.6	26.4	29.6	16.0	4.0	37.4	34.1	31.1
Total	7.0	16.0	24.0	19.0	44.0	66.0	74.0	40.0	10.0	100.0	100.0	100.0

	Piped Supply			Non-piped Supply			Rural Total		
	1980	1990	2000	1980	1990	2000	1980	1990	2000
(4) Share of Piped & Non-piped Supplies	26/1	60/4	90/4	74/1	40/4	10/1	100	100	100
(5) Share of Population Served by:									
Surface Water	70.0	69.8	69.9	60	60	60	-	-	-
Groundwater	30.0	30.2	30.1	40	40	40	-	-	-
Total	100.0	100.0	100.0	100	100	100	-	-	-

Remarks; /1: Estimates based on 1980 historical data provided by PWD
/2: (1 - 0.4) x 0.07/(0.07 + 0.19)
/3: (1 - 0.1) x 0.07/(0.07 + 0.19)
/4: Estimates based on the planned Service Factor of 60% and 90% in 1990 and 2000 provided by Medical Service of Sabah
/5: Estimates from the analogy in MOH rural area
/6: Medical Services Sabah
/7: Excluding suburban rural area

Table 38 ESTIMATED SHARE OF RURAL POPULATION SERVED BY SURFACE WATER AND GROUNDWATER IN SARAWAK

Unit: %

	PWD Rural			MS/6 Rural			Non-pipe Supply			Rural Total /7		
	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000
(1) Share of Population to Total Rural Population	12/1	16/2	25/3	32/1	44	65	56/1	40/4	10/4	100	100	100
(2) Share of Population Served by:												
Surface Water	97/1	97	97	60/1	60	60	60/5	60	60	-	-	-
Groundwater	3/1	3	3	40/1	40	40	40/5	40	40	-	-	-
Total	100	100	100	100	100	100	100	100	100	-	-	-
(3) = (1) x (2)												
Surface Water	11.6	15.5	24.3	19.2	26.4	39.0	33.6	24.0	6.0	64.4	65.9	69.3
Groundwater	0.4	0.5	0.7	12.8	17.6	26.0	22.4	16.0	4.0	35.6	34.1	30.7
Total	12.0	16.0	25.0	32.0	44.0	65.0	56.0	40.0	10.0	100.0	100.0	100.0

	Piped Supply			Non-piped Supply			Rural Total		
	1980	1990	2000	1980	1990	2000	1980	1990	2000
(4) Share of Piped & Non-piped Supplies	44/1	60/4	90/4	56/1	40/4	10/4	100	100	100
(5) Share of Population Served by:									
Surface Water	70.0	69.8	70.3	60	60	60	-	-	-
Groundwater	30.0	30.2	29.7	40	40	40	-	-	-
Total	100.0	100.0	100.0	100	100	100	-	-	-

Remarks; /1: Estimates based on 1980 historical data provided by PWD
/2: (1 - 0.4) x 0.12/(0.12 + 0.32)
/3: (1 - 0.1) x 0.12/(0.12 + 0.32)
/4: Estimates based on the planned Service Factor of 60% and 90% in 1990 and 2000 provided by Medical Service of Sarawak
/5: Estimates from the analogy in MOH rural area
/6: Medical Services Sarawak
/7: Excluding suburban rural area

Table 39 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (1/26)

Unit: 10^6 m^3/y

BASIN NO. 201

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.2	0.4
(2) S.D.	Isolated Rural	0.2	0.2	0.2	0.6
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.3	0.3	0.4
(2) S.D.		0.3	0.3	0.3	0.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 40 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (2/26)

Unit: 10^6 m^3/y

BASIN NO. 202

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	0.9
(2) S.D.	Isolated Rural	0.2	0.2	0.5	1.1
1.2 Non-pipe		0.2	0.2	0.2	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.4	0.6	0.9
(2) S.D.		0.4	0.4	0.7	1.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 41 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (3/26)

Unit: 10^6 m^3/y

BASIN NO. 203

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	1.1
(2) S.D.	Isolated Rural	0.2	0.3	0.6	1.3
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.4	0.6	1.2
(2) S.D.		0.4	0.5	0.8	1.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 42 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (4/26)

Unit: 10^6 m^3/y

BASIN NO. 204

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.2	0.3	0.6
(2) S.D.	Isolated Rural	0.0	0.2	0.3	0.8
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.3	0.4	0.6
(2) S.D.		0.1	0.3	0.4	0.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 43 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (5/26)

Unit: 10^6 m^3/y

BASIN NO. 205

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.2	0.2	0.4
(2) S.D.	Isolated Rural	0.0	0.2	0.2	0.6
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.3	0.3	0.4
(2) S.D.		0.1	0.3	0.3	0.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 44 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (6/26)

Unit: 10^6 m^3/y

BASIN NO. 206

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.2	0.2	0.4
(2) S.D.	Isolated Rural	0.0	0.2	0.2	0.6
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.3	0.3	0.5
(2) S.D.		0.1	0.3	0.3	0.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 45 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (7/26)

Unit: 10^6 m^3/y

BASIN NO. 207

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Tawau	2.9	3.4	4.8	12.6
	Isolated Rural	0.1	0.2	0.4	0.6
	Sub-total	3.0	3.6	5.2	13.2
(2) S.D.	Tawau	5.1	5.7	6.4	16.6
	Isolated Rural	0.1	0.2	0.4	0.8
	Sub-total	5.2	5.9	6.8	17.4
1.2 Non-pipe		0.4	0.4	0.3	0.0
2. Manufacturing					
(1) C.D.	Tawau	Included in	0.8	1.0	7.0
(2) S.D.	Tawau	the above	1.1	1.3	9.2
3. Oil Palm Processing		0.3	0.4	0.4	0.4
4. Rubber Processing		0.1	0.2	0.2	0.3
5. Total					
(1) C.D.		3.8	5.4	7.1	20.9
(2) S.D.		6.0	8.0	9.0	27.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 46 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (8/26)

Unit: 10^6 m^3/y

BASIN NO. 208

Item	Area	Estimated	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Semporna	0.4	0.3	0.4	1.2
	Isolated Rural	0.4	0.7	1.8	4.3
	Sub-total				
(2) S.D.	Semporna	0.6	0.5	0.6	1.6
	Isolated Rural	0.6	1.1	2.3	5.5
	Sub-total	1.2	1.6	2.9	7.1
1.2 Non-pipe		1.1	1.1	0.8	0.2
2. Manufacturing					
(1) C.D.	Semporna	Included in	0.1	0.1	0.7
(2) S.D.	Semporna	the above	0.1	0.1	0.9
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		2.0	2.3	3.2	6.5
(2) S.D.		2.4	2.9	3.9	8.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 47 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (9/26)

Unit: 10^6 m^3/y

BASIN NO. 209

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Lahad Datu	0.5	1.1	2.1	6.7
	Isolated Rural	0.1	0.2	0.4	0.6
	Sub-total	0.6	1.3	2.5	7.3
(2) S.D.	Lahad Datu	1.0	1.8	2.8	8.9
	Isolated Rural	0.1	0.2	0.4	0.8
	Sub-total	1.1	2.0	3.2	9.7
1.2 Non-pipe		0.3	0.3	0.2	0.0
2. Manufacturing					
(1) C.D.	Lahad Datu	Included in	0.3	0.5	3.9
(2) S.D.	Lahad Datu	the above	0.4	0.7	5.1
3. Oil Palm Processing		0.1	0.1	0.1	0.3
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.0	2.0	3.3	11.5
(2) S.D.		1.5	2.8	4.2	15.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 48 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (10/26)

Unit: 10^6 m^3/y

BASIN NO. 210

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.5	1.1
(2) S.D.	Isolated Rural	0.2	0.4	0.7	1.5
1.2 Non-pipe		0.3	0.3	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.6	0.6	0.8	1.3
(2) S.D.		0.6	0.8	1.0	1.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 49 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (11/26)

Unit: 10^6 m^3/y

BASIN NO. 211

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.8	1.8
(2) S.D.	Isolated Rural	0.3	0.5	1.0	2.3
1.2 Non-pipe		0.5	0.5	0.3	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.7	0.8	1.1	1.9
(2) S.D.		0.8	1.0	1.3	2.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 50 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (12/26)

Unit: 10^6 m^3/y

BASIN NO. 212

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Sandakan	4.5	5.2	8.3	18.6
	Isolated Rural	0.2	0.4	0.9	1.9
	Sub-total	4.7	5.6	9.2	20.5
(2) S.D.	Sandakan	7.9	8.0	11.0	24.5
	Isolated Rural	0.4	0.6	1.1	2.5
	Sub-total	8.3	8.6	12.1	27.0
1.2 Non-pipe		0.9	0.8	0.6	0.1
2. Manufacturing					
(1) C.D.	Sandakan	Included in	1.9	2.8	19.5
(2) S.D.	Sandakan	the above	2.5	3.7	25.7
3. Oil Palm Processing		0.1	0.2	0.3	0.3
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		5.7	8.5	12.9	40.4
(2) S.D.		9.3	12.1	16.7	53.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 51 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (13/26)

Unit: 10^6 m^3/y

BASIN NO. 213

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Ranau	0.2	0.3	0.5	1.5
	Isolated Rural	0.2	0.4	0.9	1.7
	Sub-total	0.4	0.7	1.4	3.2
(2) S.D.	Ranau	0.4	0.4	0.6	2.0
	Isolated Rural	0.4	0.6	1.1	2.2
	Sub-total	0.8	1.0	1.7	4.2
1.2 Non-pipe		0.6	0.5	0.4	0.1
2. Manufacturing					
(1) C.D.	Ranau	Included in	0.1	0.2	1.2
(2) S.D.	Ranau	the above	0.1	0.3	1.6
3. Oil Palm Processing		0.2	0.2	0.2	0.4
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.2	1.5	2.2	4.9
(2) S.D.		1.6	1.8	2.6	6.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 52 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (14/26)

Unit: 10^6 m^3/y

BASIN NO. 214

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.1	0.2	0.4	0.8
(2) S.D.	Isolated Rural	0.1	0.2	0.4	1.0
1.2 Non-pipe		0.3	0.2	0.2	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.4	0.6	0.8
(2) S.D.		0.4	0.4	0.6	1.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 53 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (15/26)

Unit: 10^6 m^3/y

BASIN NO. 215

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.0	0.2	0.4
(2) S.D.	Isolated Rural	0.0	0.0	0.2	0.4
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.1	0.3	0.4
(2) S.D.		0.1	0.1	0.3	0.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 54 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (16/26)

Unit: 10^6 m^3/y

BASIN NO. 216

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	1.1
(2) S.D.	Isolated Rural	0.2	0.4	0.6	1.3
1.2 Non-pipe		0.3	0.3	0.3	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.5	0.5	0.7	1.2
(2) S.D.		0.5	0.7	0.9	1.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 55 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (17/26)

Unit: 10^6 m^3/y

BASIN NO. 217

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kudat	0.6	0.7	1.2	3.5
	Isolated Rural	0.3	0.6	1.1	2.3
	Sub-total	0.9	1.3	2.3	5.8
(2) S.D	Kudat	1.0	1.0	1.5	4.5
	Isolated Rural	0.5	0.8	1.3	2.9
	Sub-total	1.5	1.8	2.8	7.4
1.2 Non-pipe		0.9	0.8	0.6	0.2
2. Manufacturing					
(1) C.D.	Kudat	Included in	0.3	0.4	2.7
(2) S.D.	Kudat	the above	0.4	0.5	3.6
3. Oil Palm Processing		-	0.1	0.1	0.1
4. Rubber Processing		-	-	-	0.3
5. Total					
(1) C.D.		1.8	2.5	3.4	9.1
(2) S.D.		2.4	3.1	4.0	11.6

Remarsk; C.D.: Customer demand, S.D.: Source demand

Table 56 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (18/26)

Unit: 10^6 m^3/y

BASIN NO. 218

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kota Belud	0.4	0.3	0.5	1.4
	Suburban Rural		0.1	0.1	0.1
	Isolated Rural	0.2	0.4	0.9	1.7
	Sub-total	0.6	0.8	1.5	3.2
(2) S.D.	Kota Belud	0.7	0.6	0.6	1.9
	Suburban Rural		0.1	0.1	0.2
	Isolated Rural	0.3	0.6	1.1	2.2
	Sub-total	1.0	1.3	1.8	4.3
1.2 Non-pipe		0.6	0.5	0.4	0.1
2. Manufacturing					
(1) C.D.	Kota Belud	Included in	0.1	0.2	1.2
(2) S.D.	Kota Belud	the above	0.1	0.3	1.6
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.2	1.4	2.1	4.5
(2) S.D.		1.6	1.9	2.5	6.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 57 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (19/26)

Unit: 10^6 m^3/y

BASIN NO. 219

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.9	1.4	2.3	3.6
(2) S.D.	Isolated Rural	1.8	2.7	4.0	4.7
1.2 Non-pipe		0.8	0.6	0.4	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	0.2	0.5	0.5
5. Total					
(1) C.D.		1.7	2.2	3.2	4.2
(2) S.D.		2.6	3.5	4.9	5.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 58 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (20/26)

Unit: 10^6 m^3/y

BASIN NO. 220

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kota Kinabalu	9.4	6.9	9.8	22.8
	Suburban Rural		4.4	5.3	7.5
	Isolated Rural	0.2	0.2	0.6	1.4
	Sub-total	9.6	11.5	15.7	31.7
(2) S.D.	Kota Kinabalu	16.4	11.4	12.9	29.9
	Suburban Rural		5.8	7.0	9.8
	Isolated Rural	0.2	0.4	0.8	1.8
	Sub-total	16.6	17.6	20.7	41.5
1.2 Non-pipe		0.4	0.4	0.2	0.1
2. Manufacturing					
(1) C.D.	Kota Kinabalu	Included in	1.7	2.4	17.2
(2) S.D.	Kota Kinabalu	the above	2.2	3.2	22.6
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		0.2	-	-	-
5. Total					
(1) C.D.		10.2	13.6	18.3	49.0
(2) S.D.		17.2	20.2	24.1	64.2

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 59 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (21/26)

Unit: 10^6 m^3/y

BASIN NO. 221

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Papar	0.4	0.4	0.8	2.0
	Suburban Rural		0.4	0.7	0.8
	Isolated Rural	0.2	0.3	0.6	1.4
	Sub-total	0.6	1.1	2.1	4.2
(2) S.D.	Papar	0.6	0.7	1.1	2.6
	Suburban Rural		0.6	0.9	1.1
	Isolated Rural	0.3	0.5	0.8	1.8
	Sub-total	0.9	1.8	2.8	5.5
1.2 Non-pipe		0.5	0.4	0.3	0.1
2. Manufacturing					
(1) C.D.	Papar	Included in	0.1	0.2	1.6
(2) S.D	Papar	the above	0.1	0.3	2.1
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.1	1.6	2.6	5.9
(2) S.D.		1.4	2.3	3.4	7.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 60 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (22/26)

Unit: 10^6 m^3/y

BASIN NO. 222

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.1	0.2	0.3	0.4
(2) S.D.	Isolated Rural	0.1	0.2	0.3	0.6
1.2 Non-pipe		0.2	0.2	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.4	0.4	0.4
(2) S.D.		0.3	0.4	0.4	0.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 61 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (23/26)

Unit: 10^6 m^3/y

BASIN NO.

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.4	0.7	1.4
(2) S.D.	Isolated Rural	0.3	0.5	0.9	1.9
1.2 Non-pipe		0.2	0.2	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.5	0.7	0.9	1.5
(2) S.D.		0.6	0.8	1.1	2.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 62 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (24/26)

Unit: 10^6 m^3/y

BASIN NO. 224

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Keningau	0.4	0.3	0.4	1.3
	Suburban Rural		0.2	0.3	0.4
	Isolated Rural	1.0	1.8	3.0	6.8
	Sub-total	1.4	2.3	3.7	8.5
(2) S.D.	Keningau	0.7	0.5	0.5	1.7
	Suburban Rural		0.3	0.3	0.5
	Isolated Rural	1.7	2.7	4.0	8.9
	Sub-total	2.4	3.5	4.8	11.1
1.2 Non-pipe		1.5	1.3	0.9	0.2
2. Manufacturing					
(1) C.D.	Keningau	Included in	0.1	0.1	1.1
(2) S.D.	Keningau	the above	0.1	0.1	1.4
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		0.0	0.1	0.3	0.7
5. Total					
(1) C.D.		2.9	3.8	5.0	10.5
(2) S.D.		3.9	5.0	6.1	13.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 63 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (25/26)

BASIN NO. 225

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D	Labuan	1.1	1.7	2.6	7.5
	Isolated Rural	0.0	0.2	0.2	0.4
	Sub-total	1.1	1.9	2.8	7.9
(2) S.D.	Labuan	1.9	2.8	3.4	9.8
	Isolated Rural	0.0	0.2	0.2	0.5
	Sub-total	1.9	3.0	3.6	10.3
1.2 Non-pipe		0.2	0.2	0.2	0.0
2. Manufacturing					
(1) C.D.	Labuan	Included in	5.1	6.7	10.7
(2) S.D.	Labuan	the above	7.6	8.9	14.0
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.3	7.2	9.7	18.6
(2) S.D.		2.1	10.8	12.7	24.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 64 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 1 (26/26)

Unit: 10^6 m^3/y

BASIN NO. 226

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.3	0.4	0.7	1.3
(2) S.D.	Isolated Rural	0.4	0.5	0.8	1.7
1.2 Non-pipe		0.2	0.2	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.5	0.6	0.8	1.3
(2) S.D.		0.6	0.7	0.9	1.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 65 HISTORICAL AND PROJECTED D&I WATER DEMAND IN SABAH FOR CASE 1

SABAH TOTAL
BASIN NO. 201 to 226

Unit: 10^6 m^3/y

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	City/Town	20.8	20.6	31.4	79.1
	Suburban Rural	/1	5.1	6.4	8.8
	Isolated Rural	5.7	9.9	18.8	38.8
	Sub-total	26.5	35.6	56.6	126.7
(2) S.D.	City/Town	36.3	33.4	41.4	104.0
	Suburban Rural	/1	6.8	8.3	11.6
	Isolated Rural	8.6	14.6	24.4	50.3
	Sub-total	44.9	54.8	74.1	165.9
1.2 Non-pipe		11.1	10.1	7.5	1.6
2. Manufacturing					
(1) C.D.		/2	10.6	14.6	66.8
(2) S.D.		/2	14.7	19.4	87.8
3. Oil Palm Processing		1.0	1.3	1.4	1.9
4. Rubber Processing		0.3	0.5	1.0	1.8
5. Total					
(1) C.D.		38.9	58.1	81.1	198.8
(2) S.D.		57.3	81.4	103.4	259.0

Remarks; C.D.: Customer demand, S.D.: Source demand
/1 : Included in the demand of City/Town
/2 : Included in the demand of Domestic

Table 66 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (1/21)

Unit: 10^6 m^3/y

BASIN NO. 227

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	0.7
(2) S.D.	Isolated Rural	0.3	0.4	0.5	0.8
1.2 Non-pipe		0.1	0.1	0.0	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.4	0.4	0.7
(2) S.D.		0.4	0.5	0.5	0.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 67 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (2/21)

Unit: 10^6 m^3/y

BASIN NO. 228

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	0.6
(2) S.D.	Isolated Rural	0.2	0.2	0.4	0.8
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.3	0.5	0.6
(2) S.D.		0.3	0.3	0.5	0.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 68 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (3/21)

Unit: 10^6 m^3/y

BASIN NO. 229

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Limbang	0.5	0.6	1.0	2.2
	Suburban Rural		0.3	0.3	0.4
	Isolated Rural	0.2	0.2	0.4	0.5
	Sub-total	0.7	1.1	1.7	3.1
(2) S.D.	Limbang	0.7	0.9	1.4	3.0
	Suburban Rural		0.4	0.4	0.6
	Isolated Rural	0.2	0.2	0.4	0.7
	Sub-total	0.9	1.5	2.2	4.3
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.	Limbang	Included in	0.0	0.0	0.1
(2) S.D.	Limbang	the above	0.0	0.0	0.1
3. Oil Palm Processing		0.0	0.0	0.0	-
4. Rubber Processing		0.0	0.0	0.0	0.1
5. Total					
(1) C.D.		0.8	1.2	1.8	3.3
(2) S.D.		1.0	1.6	2.3	4.5

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 69 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (4/21)

Unit: 10^6 m^3/y

BASIN NO. 230

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Marudi	0.3	0.4	0.6	1.6
	Isolated Rural	0.3	0.7	1.1	2.6
	Sub-total	0.6	1.1	1.7	4.2
(2) S.D.	Marudi	0.4	0.7	0.9	2.1
	Isolated Rural	0.5	0.9	1.5	3.3
	Sub-total	0.9	1.6	2.4	5.4
1.2 Non-pipe		0.5	0.5	0.4	0.1
2. Manufacturing					
(1) C.D.	Marudi	Included in	0.5	0.5	2.8
(2) S.D.	Marudi	the above	0.7	0.7	3.7
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.1	2.1	2.6	7.1
(2) S.D.		1.4	2.8	3.5	9.2

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 70 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (5/21)

Unit: 10^6 m^3/y

BASIN NO. 231

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Miri	2.7	3.3	5.5	14.9
	Isolated Rural	0.1	0.2	0.4	0.5
	Sub-total	2.8	3.5	5.9	15.4
(2) S.D.	Miri	4.0	4.7	7.3	19.6
	Isolated Rural	0.2	0.4	0.5	0.7
	Sub-total	4.2	5.1	7.8	20.3
1.2 Non-pipe		0.4	0.4	0.4	0.0
2. Manufacturing					
(1) C.D.	Miri	Included in	4.1	4.5	24.2
(2) S.D.	Miri	the above	5.4	5.9	31.8
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		0.0	0.0	0.0	0.0
5. Total					
(1) C.D.		3.2	8.0	10.8	39.6
(2) S.D.		4.6	10.9	14.1	52.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 71 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (6/21)

Unit: 10^6 m^3/y

BASIN NO. 232

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.1	0.2	0.4	0.6
(2) S.D.	Isolated Rural	0.1	0.2	0.4	0.8
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.4	0.6	0.7
(2) S.D.		0.3	0.4	0.6	0.9

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 72 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (7/21)

Unit: 10^6 m^3/y

BASIN NO. 233

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	1.0
(2) S.D.	Isolated Rural	0.2	0.3	0.5	1.2
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.2	0.2	0.2
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.6	0.7	1.3
(2) S.D.		0.4	0.6	0.8	1.5

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 73 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (8/21)

Unit: 10^6 m^3/y

BASIN NO. 234

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	1.1
(2) S.D.	Isolated Rural	0.2	0.3	0.6	1.3
1.2 Non-pipe		0.1	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.5	0.7	1.3
(2) S.D.		0.3	0.5	0.9	1.5

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 74 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (9/21)

Unit: 10^6 m^3/y

BASIN NO. 235

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.2	0.2	0.4
(2) S.D.	Isolated Rural	0.0	0.2	0.2	0.4
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.3	0.3	0.4
(2) S.D.		0.1	0.3	0.3	0.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 75 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (10/21)

Unit: 10^6 m^3/y

BASIN NO. 236

Item	Area	Estimted 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Bintulu	0.8	1.2	1.9	4.1
	Isolated Rural	0.2	0.3	0.4	1.0
	Sub-total	1.0	1.5	2.3	5.1
(2) S.D.	Bintulu	1.3	1.7	2.5	5.4
	Isolated Rural	0.2	0.4	0.6	1.2
	Sub-total	1.5	2.1	3.1	6.6
1.2 Non-pipe		0.3	0.3	0.3	0.1
2. Manufacturing					
(1) C.D.	Bintulu	Included in	5.8	10.2	15.6
(2) S.D.	Bintulu	the above	8.2	13.5	20.5
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.3	7.6	12.8	20.8
(2) S.D.		1.8	10.6	16.9	27.2

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 76 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (11/21)

Unit: 10^6 m^3/y

BASIN NO. 237

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	0.8
(2) S.D.	Isolated Rural	0.2	0.3	0.5	1.0
1.2 Non-pipe		0.2	0.2	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	0.0	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.5	0.5	0.9
(2) S.D.		0.4	0.5	0.6	1.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 77 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (12/21)

Unit: 10^6 m^3/y

BASIN NO. 238

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	0.8
(2) S.D.	Isolated Rural	0.2	0.3	0.5	1.0
1.2 Non-pipe		0.2	0.2	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.5	0.5	0.8
(2) S.D.		0.4	0.5	0.6	1.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 78 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (13/21)

Unit: 10^6 m^3/y

BASIN NO.

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.4	0.7	1.0	1.8
(2) S.D.	Isolated Rural	0.5	0.9	1.4	2.4
1.2 Non-pipe		0.2	0.2	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.0	0.1	0.1	0.2
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.6	1.0	1.2	2.0
(2) S.D.		0.7	1.2	1.6	2.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 79 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (14/21)

Unit: 10^6 m^3/y

BASIN NO.

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	1.1
(2) S.D.	Isolated Rural	0.3	0.4	0.6	1.3
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.5	0.6	1.2
(2) S.D.		0.5	0.6	0.8	1.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 80 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (15/21)

Unit: 10^6 m^3/y

BASIN NO. 241

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	216 Sibu	5.9	7.6	12.0	27.8
	217 Sarikei	0.6	1.0	1.9	5.0
	216 Suburban Rural	Included in	0.3	0.3	0.3
	217 Suburban Rural	the above	0.3	0.3	0.3
	Isolated Rural	2.4	3.2	5.4	9.3
	Sub-total	8.9	12.4	19.9	42.7
(2) S.D.	216 Sibu	7.5	9.9	15.8	36.6
	217 Sarikei	0.9	1.6	2.6	6.6
	216 Suburban Rural	Included in	0.4	0.3	0.4
	217 Suburban Rural	the above	0.3	0.3	0.4
	Isolated Rural	3.5	5.1	6.8	11.9
	Sub-total	11.9	17.3	25.8	55.9
1.2 Non-pipe		2.5	2.2	1.7	0.6
2. Manufacturing					
(1) C.D.	216 Sibu	Included in	0.8	0.8	4.3
	217 Sarikei	the above	0.3	0.3	1.6
	Sub-total		1.1	1.1	5.9
(2) S.D.	216 Sibu	Included in	1.1	1.1	5.7
	217 Sarikei	the above	0.4	0.4	2.1
	Sub-total		1.5	1.5	7.8
3. Oil Palm Processing		-	-	-	0.2
4. Rubber Processing		0.1	0.1	0.1	0.1
5. Total					
(1) C.D.		11.5	15.8	22.8	49.5
(2) S.D.		14.5	21.1	29.1	64.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 81 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (16/21)

Unit: 10^6 m^3/y

BASIN NO. 242

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.4	0.6	0.9	1.9
(2) S.D.	Isolated Rural	0.6	0.8	1.2	2.5
1.2 Non-pipe		0.4	0.3	0.3	0.1
2. Manufacturing					
(1) C.D.		0.1	0.1	0.1	0.3
(2) S.D.		0.1	0.1	0.1	0.4
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.9	1.0	1.3	2.3
(2) S.D.		1.1	1.2	1.6	3.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 82 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (17/21)

Unit: 10^6 m^3/y

BASIN NO. 243

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.3	0.5	0.9	1.7
(2) S.D.	Isolated Rural	0.5	0.7	1.1	2.2
1.2 Non-pipe		0.4	0.4	0.3	0.1
2. Manufacturing					
(1) C.D.		0.1	0.1	0.1	0.4
(2) S.D.		0.1	0.1	0.1	0.5
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.8	1.0	1.3	2.2
(2) S.D.		1.0	1.2	1.5	2.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 83 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (18/21)

Unit: 10^6 m^3/y

BASIN NO. 244

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	1.5	2.2	2.7	4.3
(2) S.D.	Isolated Rural	2.2	3.0	3.5	5.6
1.2 Non-pipe		0.9	0.7	0.7	0.1
2. Manufafturing					
(1) C.D.		0.1	0.2	0.2	0.9
(2) S.D.		0.2	0.2	0.2	1.1
3. Oil Palm Processing		-	0.0	0.1	0.1
4. Rubber Processing		0.1	0.1	0.1	0.1
5. Total					
(1) C.D.		2.6	3.2	3.8	5.5
(2) S.D.		3.4	4.0	4.6	7.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 84 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (19/21)

Unit: 10^6 m^3/y

BASIN NO. 245

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Serian	0.3	0.3	0.4	1.4
	Isolated Rural	0.8	1.4	2.2	4.4
	Sub-total	1.1	1.7	2.6	5.8
(2) S.D.	Serian	0.4	0.4	0.5	1.8
	Isolated Rural	1.2	1.8	2.8	5.7
	Sub-total	1.6	2.2	3.3	7.5
1.2 Non-pipe		1.1	1.0	0.8	0.3
2. Manufacturing					
(1) C.D.	Serian	Included in	0.0	0.1	0.3
(2) S.D.	Serian	the above	0.0	0.1	0.4
3. Oil Palm Processing		-	-	-	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		2.2	2.7	3.5	6.5
(2) S.D.		2.7	3.2	4.2	8.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 85 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (20/21)

Unit: 10^6 m^3/y

BASIN NO. 246

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kuching	15.4	15.8	20.5	41.7
	Suburban Rural		1.3	1.5	1.9
	Isolated Rural	1.2	2.1	3.7	7.6
	Sub-total	16.6	19.2	25.7	51.2
(2) S.D.	Kuching	19.5	20.8	27.0	54.9
	Suburban Rural		1.7	1.9	2.5
	Isolated Rural	1.8	2.9	4.7	9.7
	Sub-total	21.3	25.4	33.6	67.1
1.2 Non-pipe		1.6	1.5	1.3	0.4
2. Manufacturing					
(1) C.D.	Kuching	Included in	1.7	1.8	9.4
(2) S.D.	Kuching	the above	2.2	2.4	12.4
3. Oil Palm Processing		-	-	0.0	0.1
4. Rubber Processing		0.1	0.1	0.1	0.1
5. Total					
(1) C.D.		18.3	22.5	28.9	61.2
(2) S.D.		23.0	29.2	37.4	80.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 86 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 1 (21/21)

Unit: 10^6 m^3/y

BASIN NO. 247

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.4	0.6	0.9	1.3
(2) S.D.	Isolated Rural	0.6	0.8	1.1	1.8
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.6	0.8	1.1	1.4
(2) S.D.		0.8	1.0	1.3	1.9

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 87 HISTORICAL AND PROJECTED D&I WATER DEMAND IN SARAWAK FOR CASE 1

SARAWAK TOTAL
BASIN NO. 227 to 247

Unit: 10^6 m^3/y

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	City/Town	26.5	30.2	43.8	98.7
	Suburban Rural	/1	2.2	2.4	2.9
	Isolated Rural	9.7	15.1	23.4	44.0
	Sub-total	36.2	47.5	69.6	145.6
(2) S.D.	City/Town	34.7	40.7	58.0	130.0
	Suburban Rural	/1	2.8	2.9	3.9
	Isolated Rural	13.7	20.5	29.8	56.3
	Sub-total	48.4	64.0	90.7	190.2
1.2 Non-pipe		9.8	9.1	7.6	2.2
2. Manufacturing					
(1) C.D.		0.3/2	13.6	18.6	59.9
(2) S.D.		0.4/2	18.4	24.5	78.7
3. Oil Palm Processing		0.2	0.4	0.6	1.2
4. Rubber Processing		0.3	0.3	0.3	0.4
5. Total					
(1) C.D.		46.8	70.9	96.7	209.3
(2) S.D.		59.1	92.2	123.7	272.7

Remarks; C.D.: Customer demand, S.D.: Source demand
/1 : Included in the demand of City/Town
/2 : Rural demand only; demand of City/Town is included in that of domestic

Table 88 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (1/26)

Unit: 10^6 m^3/y

BASIN NO. 201

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.2	0.4
(2) S.D.	Isolated Rural	0.2	0.2	0.2	0.5
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.3	0.3	0.5
(2) S.D.		0.3	0.3	0.3	0.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 89 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (2/26)

Unit: 10^6 m^3/y

BASIN NO. 202

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	0.8
(2) S.D.	Isolated Rural	0.2	0.2	0.4	1.0
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.4	0.6	0.9
(2) S.D.		0.4	0.4	0.6	1.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 90 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (3/26)

Unit: 10^6 m^3/y

BASIN NO. 203

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	1.1
(2) S.D.	Isolated Rural	0.2	0.3	0.4	1.3
1.2 Non-pipe		0.2	0.3	0.3	0.2
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.5	0.7	1.3
(2) S.D.		0.4	0.6	0.7	1.5

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 91 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (4/26)

Unit: 10^6 m^3/y

BASIN NO. 204

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.2	0.2	0.5
(2) S.D.	Isolated Rural	0.0	0.2	0.2	0.7
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.3	0.3	0.6
(2) S.D.		0.1	0.3	0.3	0.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 92 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (5/26)

Unit: 10^6 m^3/y

BASIN NO. 205

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.2	0.2	0.4
(2) S.D.	Isolated Rural	0.0	0.2	0.2	0.5
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.3	0.3	0.5
(2) S.D.		0.1	0.3	0.3	0.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 93 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (6/26)

Unit: 10^6 m^3/y

BASIN NO. 206

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.2	0.2	0.4
(2) S.D.	Isolated Rural	0.0	0.2	0.2	0.5
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.3	0.3	0.6
(2) S.D.		0.1	0.3	0.3	0.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 94 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (7/26)

Unit: 10^6 m^3/y

BASIN NO. 207

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Tawau	2.9	3.1	4.4	9.0
	Isolated Rural	0.1	0.2	0.3	0.6
	Sub-total	3.0	3.3	4.7	9.6
(2) S.D.	Tawau	5.1	5.2	5.8	11.8
	Isolated Rural	0.1	0.2	0.3	0.8
	Sub-total	5.2	5.4	6.1	12.6
1.2 Non-pipe		0.5	0.4	0.4	0.3
2. Manufacturing					
(1) C.D.	Tawau	Included in	0.7	0.8	2.0
(2) S.D.	Tawau	the above	0.9	1.1	2.6
3. Oil Palm Processing		0.3	0.4	0.4	0.4
4. Rubber Processing		0.1	0.2	0.2	0.3
5. Total					
(1) C.D.		3.9	5.0	6.5	12.6
(2) S.D.		6.1	7.3	8.2	16.2

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 95 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (8/26)

Unit: 10^6 m^3/y

BASIN NO. 208

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Semporna	0.4	0.3	0.4	1.0
	Isolated Rural	0.4	0.7	1.5	4.1
	Sub-total	0.8	1.0	1.9	5.1
(2) S.D.	Semporna	0.6	0.5	0.5	1.3
	Isolated Rural	0.6	1.1	1.9	5.2
	Sub-total	1.2	1.6	2.4	6.5
1.2 Non-pipe		1.1	1.0	1.1	0.7
2. Manufacturing					
(1) C.D.	Semporna	Included in	0.1	0.1	0.2
(2) S.D.	Semporna	the above	0.1	0.1	0.3
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		2.0	2.2	3.2	6.1
(2) S.D.		2.4	2.8	3.7	7.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 96 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (9/26)

Unit: 10^6 m^3/y

BASIN NO. 209

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Lahad Datu	0.5	1.0	1.8	4.8
	Isolated Rural	0.1	0.2	0.3	0.5
	Sub-total	0.6	1.2	2.1	5.3
(2) S.D.	Lahad Datu	1.0	1.5	2.4	6.3
	Isolated Rural	0.1	0.2	0.3	0.7
	Sub-total	1.1	1.7	2.7	7.0
1.2 Non-pipe		0.3	0.3	0.4	0.2
2. Manufacturing					
(1) C.D.	Lahad Datu	Included in	0.3	0.4	1.1
(2) S.D.	Lahad Datu	the above	0.4	0.5	1.4
3. Oil Palm Processing		0.1	0.1	0.1	0.3
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.0	1.9	3.0	6.9
(2) S.D.		1.5	2.5	3.7	8.9

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 97 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (10/26)

Unit: 10^6 m^3/y

BASIN NO. 210

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	1.1
(2) S.D.	Isolated Rural	0.2	0.4	0.5	1.3
1.2 Non-pipe		0.3	0.3	0.3	0.2
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.6	0.6	0.8	1.4
(2) S.D.		0.6	0.8	0.9	1.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 98 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (11/26)

Unit: 10^6 m^3/y

BASIN NO. 211

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.6	1.7
(2) S.D.	Isolated Rural	0.3	0.5	0.8	2.1
1.2 Non-pipe		0.5	0.5	0.4	0.2
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.7	0.8	1.0	1.9
(2) S.D.		0.8	1.0	1.2	2.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 99 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (12/26)

Unit: 10^6 m^3/y

BASIN NO. 212

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Sandakan	4.5	5.1	7.7	14.0
	Isolated Rural	0.2	0.4	0.7	1.6
	Sub-total	4.7	5.5	8.4	15.6
(2) S.D.	Sandakan	7.9	7.8	10.1	18.5
	Isolated Rural	0.4	0.6	0.9	2.0
	Sub-total	8.3	8.4	11.0	20.5
1.2 Non-pipe		1.2	0.8	0.7	0.5
2. Manufacturing					
(1) C.D.	Sandakan	Included in	1.8	2.2	5.6
(2) S.D.	Sandakan	the above	2.4	2.9	7.4
3. Oil Palm Processing		0.1	0.2	0.3	0.3
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		6.0	8.3	11.6	22.0
(2) S.D.		9.6	11.8	14.9	28.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 100 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (13/26)

Unit: 10^6 m^3/y

BASIN NO. 213

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Ranau	0.2	0.3	0.4	1.2
	Isolated Rural	0.2	0.4	0.6	1.3
	Sub-total	0.4	0.7	1.0	2.5
(2) S.D.	Ranau	0.4	0.5	0.6	1.6
	Isolated Rural	0.4	0.6	0.8	1.7
	Sub-total	0.8	1.1	1.4	3.3
1.2 Non-pipe		0.6	0.5	0.5	0.2
2. Manufacturing					
(1) C.D.	Ranau	Included in	0.1	0.1	0.3
(2) S.D.	Ranau	the above	0.1	0.1	0.4
3. Oil Palm Processing		0.2	0.2	0.2	0.4
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.2	1.5	1.8	3.4
(2) S.D.		1.6	1.9	2.2	4.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 101 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (14/26)

Unit: 10^6 m^3/y

BASIN NO. 214

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.1	0.2	0.3	0.5
(2) S.D.	Isolated Rural	0.1	0.2	0.4	0.7
1.2 Non-pipe		0.3	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.4	0.5	0.6
(2) S.D.		0.4	0.4	0.6	0.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 102 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (15/26)

Unit: 10^6 m^3/y

BASIN NO. 215

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.0	0.1	0.2
(2) S.D.	Isolated Rural	0.0	0.0	0.1	0.2
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.1	0.2	0.2
(2) S.D.		0.1	0.1	0.2	0.2

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 103 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (16/26)

Unit: 10^6 m^3/y

BASIN NO. 216

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	0.9
(2) S.D.	Isolated Rural	0.2	0.4	0.5	1.1
1.2 Non-pipe		0.3	0.3	0.3	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.5	0.5	0.7	1.0
(2) S.D.		0.5	0.7	0.8	1.2

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 104 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (17/26)

Unit: 10^6 m^3/y

BASIN NO. 217

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kudat	0.6	0.6	1.1	2.5
	Isolated Rural	0.3	0.6	0.9	1.8
	Sub-total	0.9	1.2	2.0	4.3
(2) S.D.	Kudat	1.0	0.9	1.4	3.4
	Isolated Rural	0.5	0.8	1.1	2.3
	Sub-total	1.5	1.7	2.5	5.7
1.2 Non-pipe		0.9	0.8	0.6	0.3
2. Manufacturing					
(1) C.D.	Kudat	Included in	0.3	0.3	0.8
(2) S.D.	Kudat	the above	0.4	0.4	1.1
3. Oil Palm Processing		-	0.1	0.1	0.1
4. Rubber Processing		-	-	-	0.3
5. Total					
(1) C.D.		1.8	2.4	3.0	5.8
(2) S.D.		2.4	3.0	3.6	7.5

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 105 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (18/26)

Unit: 10^6 m^3/y

BASIN NO. 218

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kota Belud	0.4	0.3	0.4	1.1
	Suburban Rural		0.1	0.1	0.1
	Isolated Rural	0.2	0.4	0.6	1.3
	Sub-total	0.6	0.8	1.1	2.5
(2) S.D.	Kota Belud	0.7	0.6	0.6	1.5
	Suburban Rural		0.1	0.1	0.1
	Isolated Rural	0.3	0.6	0.8	1.7
	Sub-total	1.0	1.3	1.5	3.3
1.2 Non-pipe		0.6	0.5	0.5	0.2
2. Manufacturing					
(1) C.D.	Kota Belud	Included in	0.1	0.1	0.3
(2) S.D.	Kota Belud	the above	0.1	0.1	0.4
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.2	1.4	1.7	3.0
(2) S.D.		1.6	1.9	2.1	3.9

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 106 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (19/26)

Unit: 10^6 m^3/y

BASIN NO. 219

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.8	1.3	1.7	2.9
(2) S.D.	Isolated Rural	1.8	2.6	3.0	3.8
1.2 Non-pipe		0.8	0.6	0.6	0.3
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	0.2	0.5	0.5
5. Total					
(1) C.D.		1.6	2.1	2.8	3.7
(2) S.D.		2.6	3.4	4.1	4.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 107 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (20/26)

Unit: 10^6 m^3/y

BASIN NO. 220

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kota Kinabalu	9.4	6.8	9.0	18.1
	Suburban Rural		4.4	5.5	9.7
	Isolated Rural	0.2	0.2	0.4	1.1
	Sub-total	9.6	11.4	14.9	28.9
(2) S.D.	Kota Kinabalu	16.4	11.1	11.9	23.8
	Suburban Rural		5.7	7.3	12.8
	Isolated Rural	0.2	0.4	0.6	1.5
	Sub-total	16.6	17.2	19.8	38.1
1.2 Non-pipe		0.4	0.4	0.4	0.3
2. Manufacturing					
(1) C.D.	Kota Kinabalu	Included in	1.6	2.0	4.9
(2) S.D.	Kota Kinabalu	the above	2.1	2.6	6.4
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		0.2	-	-	-
5. Total					
(1) C.D.		10.2	13.4	17.3	34.1
(2) S.D.		17.2	19.7	22.8	44.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 108 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (21/26)

Unit: 10^6 m^3/y

BASIN NO. 221

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Papar	0.4	0.4	0.7	1.6
	Suburban Rural		0.4	0.7	0.8
	Isolated Rural	0.2	0.3	0.5	1.1
	Sub-total	0.6	1.1	1.9	3.5
(2) S.D.	Papar	0.6	0.8	1.0	2.1
	Suburban Rural		0.5	0.9	1.0
	Isolated Rural	0.3	0.5	0.7	1.5
	Sub-total	0.9	1.8	2.6	4.6
1.2 Non-pipe		0.5	0.4	0.3	0.2
2. Manufacturing					
(1) C.D.	Papar	Included in	0.1	0.2	0.5
(2) S.D.	Papar	the above	0.1	0.2	0.7
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.1	1.6	2.4	4.2
(2) S.D.		1.4	2.3	3.1	5.5

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 109 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (22/26)

Unit: 10^6 m^3/y

BASIN NO. 222

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.1	0.1	0.2	0.3
(2) S.D.	Isolated Rural	0.1	0.2	0.3	0.5
1.2 Non-pipe		0.2	0.2	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.3	0.3	0.4
(2) S.D.		0.3	0.4	0.4	0.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 110 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (23/26)

Unit: 10^6 m^3/y

BASIN NO. 223

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.7	1.3
(2) S.D.	Isolated Rural	0.3	0.4	0.9	1.7
1.2 Non-pipe		0.2	0.2	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.5	0.6	0.9	1.5
(2) S.D.		0.6	0.7	1.1	1.9

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 111 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (24/26)

Unit: 10^6 m^3/y

BASIN NO. 224

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Keningau	0.4	0.3	0.4	1.1
	Suburban Rural		0.2	0.2	0.4
	Isolated Rural	1.0	1.7	2.4	5.5
	Sub-total	1.4	2.2	3.0	7.0
(2) S.D.	Keningau	0.7	0.5	0.5	1.4
	Suburban Rural		0.3	0.3	0.5
	Isolated Rural	1.7	2.6	3.2	7.2
	Sub-total	2.4	3.4	4.0	9.1
1.2 Non-pipe		1.5	1.3	1.2	0.9
2. Manufacturing					
(1) C.D.	Keningau	Included in	0.1	0.1	0.3
(2) S.D.	Keningau	the above	0.1	0.1	0.4
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		0.0	0.1	0.3	0.7
5. Total					
(1) C.D.		2.9	3.7	4.6	8.9
(2) S.D.		3.9	4.9	5.6	11.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 112 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (25/26)

Unit: 10^6 m^3/y

BASIN NO. 225

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Labuan	1.1	1.7	2.4	5.6
	Isolated Rural	0.0	0.2	0.2	0.4
	Sub-total	1.1	1.9	2.6	6.0
(2) S.D.	Labuan	1.9	2.8	3.1	7.4
	Isolated Rural	0.0	0.2	0.2	0.4
	Sub-total	1.9	3.0	3.3	7.8
1.2 Non-pipe		0.2	0.2	0.2	0.2
2. Manufacturing					
(1) C.D.	Labuan	Included in	5.1	6.1	8.8
(2) S.D.	Labuan	the above	7.6	8.0	11.6
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.3	7.2	8.9	15.0
(2) S.D.		2.1	10.8	11.5	19.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 113 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SABAH FOR CASE 2 (26/26)

Unit: 10^6 m^3/y

BASIN NO. 226

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.3	0.4	0.6	1.1
(2) S.D.	Isolated Rural	0.4	0.5	0.7	1.5
1.2 Non-pipe		0.2	0.2	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.5	0.6	0.7	1.2
(2) S.D.		0.6	0.7	0.8	1.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 114 HISTORICAL AND PROJECTED D&I WATER DEMAND IN SABAH FOR CASE 2

Unit: 10^6 m^3/y

SABAH TOTAL
BASIN NO. 201 to 226

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	City/Town	20.8	19.9	28.7	60.0
	Suburban Rural	/1	5.1	6.5	11.0
	Isolated Rural	5.6	9.6	15.0	33.0
	Sub-total	26.4	34.6	50.2	104.0
(2) S.D.	City/Town	36.3	32.2	37.9	79.1
	Suburban Rural	/1	6.6	8.6	14.4
	Isolated Rural	8.6	14.4	19.6	42.4
	Sub-total	44.9	53.2	66.1	135.9
1.2 Non-pipe		11.5	10.1	9.4	5.9
2. Manufacturing					
(1) C.D.		/2	10.3	12.4	24.8
(2) S.D.		/2	14.3	16.1	32.7
3. Oil Palm Processing		1.0	1.3	1.4	1.9
4. Rubber Processing		0.3	0.5	1.0	1.8
5. Total					
(1) C.D.		39.2	56.8	74.4	138.4
(2) S.D.		57.7	79.4	94.0	178.2

Remarks; C.D.: Customer demand, S.D.: Source demand
/1 : Included in the demand of City/Town
/2 : Included in the demand of Domestic

Table 115 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (1/21)

Unit: 10^6 m^3/y

BASIN NO. 227

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	0.5
(2) S.D.	Isolated Rural	0.3	0.4	0.5	0.6
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.4	0.5	0.5
(2) S.D.		0.4	0.5	0.6	0.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 116 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (2/21)

Unit: 10^6 m^3/y

BASIN NO. 228

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.2	0.4	0.5
(2) S.D.	Isolated Rural	0.2	0.2	0.4	0.7
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.3	0.5	0.6
(2) S.D.		0.3	0.3	0.5	0.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 117 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (3/21)

Unit: 10^6 m^3/y

BASIN NO. 229

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Limbang	0.5	0.6	0.9	1.8
	Suburban Rural		0.3	0.3	0.4
	Isolated Rural	0.2	0.2	0.3	0.4
	Sub-total	0.7	1.1	1.5	2.6
(2) S.D.	Limbang	0.7	0.9	1.2	2.3
	Suburban Rural		0.4	0.4	0.6
	Isolated Rural	0.2	0.2	0.3	0.6
	Sub-total	0.9	1.5	1.9	3.5
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.	Limbang	Included in	0.0	0.0	0.0
(2) S.D.	Limbang	the above	0.0	0.0	0.0
3. Oil Palm Processing		0.0	0.0	0.0	-
4. Rubber Processing		0.0	0.0	0.0	0.1
5. Total					
(1) C.D.		0.8	1.2	1.6	2.8
(2) S.D.		1.0	1.6	2.0	3.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 118 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (4/21)

Unit: 10^6 m^3/y

BASIN NO. 230

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Marudi	0.3	0.4	0.6	1.2
	Isolated Rural	0.3	0.7	1.1	2.5
	Sub-total	0.6	1.1	1.7	3.7
(2) S.D.	Marudi	0.4	0.7	0.8	1.6
	Isolated Rural	0.5	0.9	1.3	3.2
	Sub-total	0.9	1.6	2.1	4.8
1.2 Non-pipe		0.5	0.5	0.5	0.3
2. Manufacturing					
(1) C.D.	Marudi	Included in	0.5	0.5	0.9
(2) S.D.	Marudi	the above	0.7	0.7	1.2
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.1	2.1	2.7	4.9
(2) S.D.		1.4	2.8	3.3	6.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 1.19 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (5/21)

Unit: 10^6 m^3/y

BASIN NO. 231

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Miri	2.7	3.2	4.8	11.2
	Isolated Rural	0.1	0.2	0.3	0.6
	Sub-total	2.8	3.4	5.1	11.8
(2) S.D.	Miri	4.0	4.7	6.3	14.8
	Isolated Rural	0.2	0.3	0.4	0.8
	Sub-total	4.2	5.0	6.7	15.6
1.2 Non-pipe		0.4	0.4	0.4	0.2
2. Manufacturing					
(1) C.D.	Miri	Included in	3.9	4.1	8.2
(2) S.D.	Miri	the above	5.1	5.4	10.8
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		0.0	0.0	0.0	0.0
5. Total					
(1) C.D.		3.2	7.7	9.6	20.2
(2) S.D.		4.6	10.5	12.5	26.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 120 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (6/21)

Unit: 10^6 m^3/y

BASIN NO. 232

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.1	0.2	0.4	0.7
(2) S.D.	Isolated Rural	0.1	0.2	0.4	0.9
1.2 Non-pipe		0.1	0.1	0.1	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.1	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.4	0.6	0.9
(2) S.D.		0.3	0.4	0.6	1.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 121 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (7/21)

Unit: 10^6 m^3/y

BASIN NO. 233

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	1.1
(2) S.D.	Isolated Rural	0.2	0.3	0.5	1.3
1.2 Non-pipe		0.1	0.1	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.1	0.2	0.2	0.2
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.6	0.8	1.4
(2) S.D.		0.4	0.6	0.9	1.6

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 122 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (8/21)

Unit: 10^6 m^3/y

BASIN NO. 234

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	1.1
(2) S.D.	Isolated Rural	0.2	0.3	0.5	1.4
1.2 Non-pipe		0.1	0.2	0.2	0.2
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	0.1	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.3	0.5	0.7	1.4
(2) S.D.		0.3	0.5	0.8	1.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 123 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (9/21)

Unit: 10^6 m^3/y

BASIN NO. 235

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.0	0.1	0.2	0.4
(2) S.D.	Isolated Rural	0.0	0.1	0.2	0.4
1.2 Non-pipe		0.1	0.1	0.1	0.0
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.1	0.2	0.3	0.4
(2) S.D.		0.1	0.2	0.3	0.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 124 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (10/21)

Unit: 10^6 m^3/y

BASIN NO. 236

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Bintulu	0.8	1.0	1.7	3.0
	Isolated Rural	0.2	0.3	0.4	0.9
	Sub-total	1.0	1.3	2.1	3.9
(2) S.D.	Bintulu	1.3	1.4	2.2	3.9
	Isolated Rural	0.2	0.4	0.5	1.1
	Sub-total	1.5	1.8	2.7	5.0
1.2 Non-pipe		0.3	0.4	0.4	0.2
2. Manufacturing					
(1) C.D.	Bintulu	Included in	5.7	7.0	11.0
(2) S.D.	Bintulu	the above	8.0	9.2	14.5
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		1.3	7.4	9.5	15.1
(2) S.D.		1.8	10.2	12.3	19.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 125 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (11/21)

Unit: 10^6 m^3/y

BASIN NO. 237

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	0.7
(2) S.D.	Isolated Rural	0.2	0.3	0.4	0.9
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	0.0	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.5	0.6	0.9
(2) S.D.		0.4	0.5	0.6	1.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 126 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (12/21)

Unit: 10^6 m^3/y

BASIN NO. 238

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	0.7
(2) S.D.	Isolated Rural	0.2	0.3	0.4	0.9
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.5	0.6	0.8
(2) S.D.		0.4	0.5	0.6	1.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 127 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (13/21)

Unit: 10^6 m^3/y

BASIN NO. 239

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.4	0.6	0.9	1.9
(2) S.D.	Isolated Rural	0.5	0.8	1.1	2.4
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		0.0	0.1	0.1	0.2
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.6	0.9	1.2	2.2
(2) S.D.		0.7	1.1	1.4	2.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 128 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (14/21)

Unit: 10^6 m^3/y

BASIN NO. 240

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.2	0.3	0.4	1.0
(2) S.D.	Isolated Rural	0.3	0.4	0.6	1.2
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.4	0.5	0.6	1.1
(2) S.D.		0.5	0.6	0.8	1.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 129 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (15/21)

Unit: 10^6 m^3/y

BASIN NO. 241

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	216 Sibu	5.9	7.4	11.1	22.1
	217 Sarikei	0.6	0.9	1.8	4.0
	216 Suburban Rural	Included in	0.4	0.4	1.2
	217 Suburdan Rural	the above	0.3	0.3	0.3
	Isolated Rural	2.4	3.5	4.6	8.1
	Sub-total	8.9	12.5	18.2	35.7
(2) S.D.	216 Sibu	7.5	9.7	14.6	29.1
	217 Sarikei	0.9	1.5	2.3	5.2
	216 Suburban Rural	Included in	0.6	0.6	1.6
	217 Suburban Rural	the above	0.3	0.3	0.4
	Isolated Rural	3.5	4.8	5.9	10.4
	Sub-total	11.9	16.9	23.7	46.7
1.2 Non-pipe		2.5	2.2	2.2	1.1
2. Manufacturing					
(1) C.D.	216 Sibu	Included in	0.7	0.8	1.5
	217 Sarikei	the above	0.3	0.3	0.5
	Sub-total	-	1.0	1.1	2.0
(2) S.D.	216 Sibu	Included in	0.9	1.1	2.0
	217 Sarikei	the above	0.4	0.4	0.7
	Sub-total	-	1.3	1.5	2.7
3. Oil Palm Processing		-	-	-	0.2
4. Rubber Processing		0.1	0.1	0.1	0.1
5. Total					
(1) C.D.		11.5	15.8	21.6	39.1
(2) S.D.		14.5	20.5	27.5	50.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 130 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (16/21)

Unit: 10^6 m^3/y

BASIN NO. 242

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.4	0.6	0.8	1.6
(2) S.D.	Isolated Rural	0.6	0.8	1.1	2.1
1.2 Non-pipe		0.4	0.3	0.3	0.2
2. Manufacturing					
(1) C.D.		0.1	0.1	0.1	0.1
(2) S.D.		0.1	0.1	0.1	0.1
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.9	1.0	1.2	1.9
(2) S.D.		1.1	1.2	1.5	2.4

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 131 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (17/21)

Unit: 10^6 m^3/y

BASIN NO. 243

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.3	0.5	0.7	1.5
(2) S.D.	Isolated Rural	0.5	0.7	0.9	1.9
1.2 Non-pipe		0.4	0.4	0.4	0.2
2. Manufacturing					
(1) C.D.		0.1	0.1	0.1	0.1
(2) S.D.		0.1	0.1	0.1	0.2
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.8	1.0	1.2	1.8
(2) S.D.		1.0	1.2	1.4	2.3

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 132 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (18/21)

Unit: 10^6 m^3/y

BASIN NO. 244

Item	Area	Estimated 1980	Projected 1990	1995	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	1.4	2.0	2.4	3.6
(2) S.D.	Isolated Rural	2.2	3.0	3.4	4.7
1.2 Non-pipe		0.8	0.8	0.7	0.4
2. Manufacturing					
(1) C.D.		0.1	0.1	0.2	0.3
(2) S.D.		0.2	0.2	0.2	0.4
3. Oil Palm Processing		-	0.0	0.1	0.1
4. Rubber Processing		0.1	0.1	0.1	0.1
5. Total					
(1) C.D.		2.4	3.0	3.5	4.5
(2) S.D.		3.3	4.1	4.5	5.7

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 133 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (19/21)

Unit: 10^6 m^3/y

BASIN NO. 245

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Serian	0.3	0.3	0.3	1.0
	Isolated Rural	0.8	1.4	1.8	4.0
	Sub-total	1.1	1.7	2.1	5.0
(2) S.D.	Serian	0.4	0.4	0.4	1.3
	Isolated Rural	1.2	1.8	2.4	5.1
	Sub-total	1.6	2.2	2.8	6.4
1.2 Non-pipe		1.1	1.0	0.9	0.5
2. Manufacturing					
(1) C.D.	Serian	0.0	0.0	0.0	0.1
(2) S.D.	Serian	0.0	0.0	0.0	0.1
3. Oil Palm Processing		-	-	-	0.1
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		2.2	2.7	3.0	5.7
(2) S.D.		2.7	3.2	3.7	7.1

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 134 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (20/21)

Unit: 10^6 m^3/y

BASIN NO. 246

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Kuching	15.4	15.5	18.9	33.1
	Suburban Rural		1.3	1.5	2.2
	Isolated Rural	1.2	2.0	3.2	7.3
	Sub-total	16.6	18.8	23.6	42.6
(2) S.D.	Kuching	19.5	20.3	24.9	43.5
	Suburban Rural		1.7	2.0	2.9
	Isolated Rural	1.8	2.8	4.1	9.3
	Sub-total	21.3	24.8	31.0	55.7
1.2 Non-pipe		1.6	1.5	1.5	0.9
2. Manufacturing					
(1) C.D.	Kuching	Included in	1.6	1.7	3.2
(2) S.D.	Kuching	the above	2.1	2.2	4.2
3. Oil Palm Processing		-	-	0.0	0.1
4. Rubber Processing		0.1	0.1	0.1	0.1
5. Total					
(1) C.D.		18.3	22.0	26.9	46.9
(2) S.D.		23.0	28.5	34.8	61.0

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 135 HISTORICAL AND PROJECTED D&I WATER DEMAND BY BASIN IN SARAWAK FOR CASE 2 (21/21)

Unit: 10^6 m^3/y

BASIN NO. 247

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	Isolated Rural	0.4	0.6	0.8	1.3
(2) S.D.	Isolated Rural	0.6	0.8	1.0	1.7
1.2 Non-pipe		0.2	0.2	0.2	0.1
2. Manufacturing					
(1) C.D.		-	-	-	-
(2) S.D.		-	-	-	-
3. Oil Palm Processing		-	-	-	-
4. Rubber Processing		-	-	-	-
5. Total					
(1) C.D.		0.6	0.8	1.0	1.4
(2) S.D.		0.8	1.0	1.2	1.8

Remarks; C.D.: Customer demand, S.D.: Source demand

Table 136 HISTORICAL AND PROJECTED D&I WATER DEMAND IN SARAWAK FOR CASE 2

Unit: 10^6 m^3/y

SARAWAK TOTAL
BASIN NO. 227 to 247

Item	Area	Estimated 1980	Projected 1985	1990	2000
1. Domestic					
1.1 Pipe					
(1) C.D.	City/Town	26.5	29.3	40.1	77.4
	Suburban Rural	/1	2.3	2.5	4.1
	Isolated Rural	9.6	14.9	20.7	40.4
	Sub-total	36.1	46.5	63.3	121.9
(2) S.D.	City/Town	34.7	39.6	52.7	101.7
	Suburban Rural	/1	3.0	3.3	5.5
	Isolated Rural	13.8	19.8	26.3	51.6
	Sub-total	48.5	62.4	82.3	158.8
1.2 Non-pipe		9.7	9.3	9.1	5.1
2. Manufacturing					
(1) C.D.		0.3/2	13.0	14.8	25.9
(2) S.D.		0.4/2	17.6	19.4	34.2
3. Oil Palm Processing		0.2	0.4	0.6	1.2
4. Rubber Processing		0.3	0.3	0.3	0.4
5. Total					
(1) C.D.		46.6	69.5	88.1	154.5
(2) S.D.		59.1	90.0	111.7	199.7

Remarks; C.D.: Customer demand, S.D.: Source demand
/1 : Included in the demand of City/Town
/2 : Rural demand only; demand of City/Town is included in that of domestic

Table 137 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (1/11)

Unit: 10^6 m^3/y

City/Town Code: 201 Tawau

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	2.9	3.4	4.8	12.6
	Non-pipe	0.5	0.2	0.2	0.0
Sub-total		3.4	3.6	5.0	12.6
Manufacturing:	Pipe	Included in	0.4	0.5	3.5
	Non-pipe	the above	0.4	0.5	3.5
Sub-total			0.8	1.0	7.0
Total		3.4	4.4	6.0	19.6
2. Source Demand					
Domestic:	Pipe	5.1	5.7	6.4	16.6
	Non-pipe	0.6	0.2	0.2	0.0
Sub-total		5.7	5.9	6.6	16.6
Manufacturing:	Pipe	Included in	0.5	0.7	4.6
	Non-pipe	the above	0.5	0.7	4.6
Sub-total			1.0	1.4	9.2
Total		5.7	6.9	8.0	25.8

Table 138 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (2/11)

Unit: 10^6 m^3/y

City/Town Code: 202 Semporna

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.3	0.4	1.2
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.3	0.4	1.2
Manufacturing:	Pipe	Included in	0.1	0.1	0.4
	Non-pipe	the above	0.0	0.1	0.4
Sub-total			0.1	0.2	0.8
Total		0.4	0.4	0.6	2.0
2. Source Demand					
Domestic:	Pipe	0.6	0.5	0.6	1.6
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.6	0.5	0.6	1.6
Manufacturing:	Pipe	Included in	0.1	0.1	0.5
	Non-pipe	the above	0.1	0.1	0.5
Sub-total			0.2	0.2	1.0
Total		0.6	0.7	0.8	2.6

Table 139 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (3/11)

Unit: 10^6 m^3/y

City/Town Code: 203 Lahadu Datu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.5	1.1	2.1	6.7
	Non-pipe	0.1	0.1	0.1	0.0
Sub-total		0.6	1.2	2.2	6.7
Manufacturing:	Pipe	Included in	0.2	0.2	1.9
	Non-pipe	the above	0.2	0.2	1.9
Sub-total			0.4	0.4	3.8
Total		0.6	1.6	2.6	10.5
2. Source Demand					
Domestic:	Pipe	1.0	1.8	2.8	8.9
	Non-pipe	0.1	0.1	0.1	0.0
Sub-total		1.1	1.9	2.9	8.9
Manufacturing:	Pipe	Included in	0.2	0.3	2.6
	Non-pipe	the above	0.2	0.3	2.6
Sub-total			0.4	0.6	5.2
Total		1.1	2.3	3.5	14.1

Table 140 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (4/11)

Unit: 10^6 m^3/y

City/Town Code: 204 Sandakan

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	4.5	5.2	8.3	18.6
	Non-pipe	1.2	0.3	0.2	0.0
Sub-total		5.7	5.5	8.5	18.6
Manufacturing:	Pipe	Included in	1.0	1.4	9.7
	Non-pipe	the above	1.0	1.4	9.7
Sub-total			2.0	2.8	19.4
Total		5.7	7.5	11.3	38.0
2. Source Demand					
Domestic:	Pipe	7.9	8.0	11.0	24.5
	Non-pipe	1.5	0.3	0.2	0.0
Sub-total		9.4	8.3	11.2	24.5
Manufacturing:	Pipe	Included in	1.3	1.8	12.8
	Non-pipe	the above	1.3	1.8	12.8
Sub-total			2.6	3.6	25.6
Total		9.4	10.9	14.8	50.1

Table 141 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (5/11)

Unit: 10^6 m^3/y

City/Town Code: 205 Ranau

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.2	0.3	0.5	1.5
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.2	0.3	0.5	1.5
Manufacturing:	Pipe	Included in	0.1	0.1	0.6
	Non-pipe	the above	0.1	0.1	0.6
Sub-total			0.2	0.2	1.2
Total		0.2	0.5	0.7	2.7
2. Source Demand					
Domestic:	Pipe	0.4	0.5	0.6	2.0
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.5	0.6	2.0
Manufacturing:	Pipe	Included in	0.1	0.1	0.8
	Non-pipe	the above	0.1	0.1	0.8
Sub-total			0.2	0.2	1.6
Total		0.4	0.7	0.8	3.6

Table 142 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (6/11)

Unit: 10^6 m^3/y

City/Town Code: 206 Kudat

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.6	0.7	1.2	3.5
	Non-pipe	0.2	0.1	0.1	0.0
Sub-total		0.8	0.8	1.3	3.5
Manufacturing:	Pipe	Included in	0.1	0.2	1.4
	Non-pipe	the above	0.1	0.2	1.4
Sub-total			0.2	0.4	2.8
Total		0.8	1.0	1.7	6.3
2. Source Demand					
Domestic:	Pipe	1.0	1.0	1.5	4.5
	Non-pipe	0.3	0.1	0.1	0.0
Sub-total		1.3	1.1	1.6	4.5
Manufacturing:	Pipe	Included in	0.2	0.3	1.8
	Non-pipe	the above	0.2	0.3	1.8
Sub-total			0.4	0.6	3.6
Total		1.3	1.5	2.2	8.1

Table 143 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (7/11)

Unit: 10^6 m^3/y

City/Town Code: 207 Kota Belud

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.4	0.6	1.5
	Non-pipe	0.1	0.0	0.0	0.0
Sub-total		0.5	0.4	0.6	1.5
Manufacturing:	Pipe	Included in	0.1	0.1	0.6
	Non-pipe	the above	0.1	0.1	0.6
Sub-total			0.2	0.2	1.2
Total		0.5	0.6	0.8	2.7
2. Source Demand					
Domestic:	Pipe	0.7	0.7	0.7	2.1
	Non-pipe	0.1	0.0	0.0	0.0
Sub-total		0.8	0.7	0.7	2.1
Manufacturing:	Pipe	Included in	0.1	0.1	0.8
	Non-pipe	the above	0.1	0.1	0.8
Sub-total			0.2	0.2	1.6
Total		0.8	0.9	0.9	3.7

Table 144 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (8/11)

Unit: 10^6 m^3/y

City/Town Code: 208 Kota Kinabalu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	9.4	11.3	15.1	30.3
	Non-pipe	0.9	0.0	0.0	0.0
Sub-total		10.3	11.3	15.1	30.3
Manufacturing:	Pipe	Included in	0.9	1.2	8.6
	Non-pipe	the above	0.9	1.2	8.6
Sub-total			1.8	2.4	17.2
Total		10.3	13.1	17.5	47.5
2. Source Demand					
Domestic:	Pipe	16.4	17.2	19.9	39.7
	Non-pipe	1.0	0.0	0.0	0.0
Sub-total		17.4	17.2	19.9	39.7
Manufacturing:	Pipe	Included in	1.1	1.6	11.3
	Non-pipe	the above	1.1	1.6	11.3
Sub-total			2.2	3.2	22.6
Total		17.4	19.4	23.1	62.3

Table 145 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (9/11)

Unit: 10^6 m^3/y

City/Town Code: 209 Papar

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.8	1.5	2.8
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.8	1.5	2.8
Manufacturing:	Pipe	Included in	0.1	0.1	0.8
	Non-pipe	the above	0.1	0.1	0.8
Sub-total			0.2	0.2	1.6
Total		0.4	1.0	1.7	4.4
2. Source Demand					
Domestic:	Pipe	0.6	1.3	2.0	3.7
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.6	1.3	2.0	3.7
Manufacturing:	Pipe	Included in	0.1	0.1	1.1
	Non-pipe	the above	0.1	0.1	1.1
Sub-total			0.2	0.2	2.2
Total		0.6	1.5	2.2	5.9

Table 146 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (10/11)

Unit: 10^6 m^3/y

City/Town Code: 210 Keningau

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.5	0.7	1.7
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.5	0.7	1.7
Manufacturing:	Pipe	Included in	0.1	0.1	0.5
	Non-pipe	the above	0.1	0.1	0.5
Sub-total			0.2	0.2	1.0
Total		0.4	0.7	0.9	2.7
2. Source Demand					
Domestic:	Pipe	0.7	0.8	0.8	2.2
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.7	0.8	0.8	2.2
Manufacturing:	Pipe	Included in	0.1	0.1	0.7
	Non-pipe	the above	0.1	0.1	0.7
Sub-total			0.2	0.2	1.4
Total		0.7	1.0	1.0	3.6

Table 147 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1 (11/11)

Unit: 10^6 m^3/y

City/Town Code: 211 Labuan

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	1.1	1.7	2.6	7.5
	Non-pipe	0.1	0.1	0.1	0.0
Sub-total		1.2	1.8	2.7	7.5
Manufacturing:	Pipe	Included in	5.1	6.7	10.7
	Non-pipe	the above	0.0	0.0	0.0
Sub-total			5.1	6.7	10.7
Total		1.2	6.9	9.4	18.2
2. Source Demand					
Domestic:	Pipe	1.9	2.8	3.4	9.8
	Non-pipe	0.1	0.1	0.1	0.0
Sub-total		2.0	2.9	3.5	9.8
Manufacturing:	Pipe	Included in	7.6	8.9	14.0
	Non-pipe	the above	0.0	0.0	0.0
Sub-total			7.6	8.9	14.0
Total		2.0	10.5	12.4	23.8

Table 148 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 1

Sabah Urban Total
City/Town Code: 201 - 211

Unit: 10^6 m^3/y

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	20.8	25.7	37.8	87.9
	Non-pipe	3.1	0.8	0.7	0.0
Sub-total		23.9	26.5	38.5	87.9
Manufacturing:	Pipe	Included in	8.2	10.7	38.7
	Non-pipe	the above	3.0	4.0	28.0
Sub-total		-	11.2	14.7	66.7
Total		23.9	37.7	53.2	154.6
2. Source Demand					
Domestic:	Pipe	36.3	40.3	49.7	115.6
	Non-pipe	3.7	0.8	0.7	0.0
Sub-total		40.0	41.1	50.4	115.6
Manufacturing:	Pipe	Included in	11.4	14.1	51.0
	Non-pipe	the above	3.8	5.2	37.0
Sub-total		-	15.2	19.3	88.0
Total		40.0	56.3	69.7	203.6

Table 149 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (1/8)

Unit: 10^6 m^3/y

City/Town Code: 212 Limbang

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.5	0.9	1.3	2.6
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.5	0.9	1.3	2.6
Manufacturing:	Pipe	Included in	0.0	0.0	0.0
	Non-pipe	the above	0.0	0.0	0.0
Sub-total			0.0	0.0	0.0
Total		0.5	0.9	1.3	2.6
2. Source Demand					
Domestic:	Pipe	0.7	1.3	1.8	3.6
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.7	1.3	1.8	3.6
Manufacturing:	Pipe	Included in	0.0	0.0	0.1
	Non-pipe	the above	0.0	0.0	0.1
Sub-total			0.0	0.0	0.2
Total		0.7	1.3	1.8	3.8

Table 150 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (2/8)

Unit: 10^6 m^3/y

City/Town Code: 213 Marudi

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.3	0.4	0.6	1.6
	Non-pipe	0.1	0.0	0.0	0.0
Sub-total		0.4	0.4	0.6	1.6
Manufacturing:	Pipe	Included in	0.3	0.3	1.4
	Non-pipe	the above	0.2	0.3	1.4
Sub-total			0.5	0.6	2.8
Total		0.4	0.9	1.2	4.4
2. Source Demand					
Domestic:	Pipe	0.4	0.7	0.9	2.1
	Non-pipe	0.2	0.0	0.0	0.0
Sub-total		0.6	0.7	0.9	2.1
Manufacturing:	Pipe	Included in	0.3	0.3	1.8
	Non-pipe	the above	0.3	0.3	1.8
Sub-total			0.6	0.6	3.6
Total		0.6	1.3	1.5	5.7

Table 151 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (3/8)

Unit: 10^6 m^3/y

City/Town Code: 214 Miri

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	2.7	3.3	5.5	14.9
	Non-pipe	1.2	0.3	0.3	0.0
Sub-total		3.9	3.6	5.8	14.9
Manufacturing:	Pipe	Included in	2.0	2.2	12.1
	Non-pipe	the above	2.0	2.2	12.1
Sub-total			4.0	4.4	24.2
Total		3.9	7.6	10.2	39.1
2. Source Demand					
Domestic:	Pipe	4.0	4.7	7.3	19.6
	Non-pipe	1.8	0.3	0.3	0.0
Sub-total		5.8	5.0	7.6	19.6
Manufacturing:	Pipe	Included in	2.7	2.9	15.9
	Non-pipe	the above	2.7	2.9	15.9
Sub-total			5.4	5.8	31.8
Total		5.8	10.4	13.4	51.4

Table 152 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (4/8)

Unit: 10^6 m^3/y

City/Town Code: 215 Bintulu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.8	1.2	1.9	4.1
	Non-pipe	0.4	0.1	0.1	0.0
Sub-total		1.2	1.3	2.0	4.1
Manufacturing:	Pipe	Included in	5.1	9.4	12.1
	Non-pipe	the above	0.7	0.8	3.5
Sub-total			5.8	10.2	15.6
Total		1.2	7.1	12.2	19.7
2. Source Demand					
Domestic:	Pipe	1.3	1.7	2.5	5.4
	Non-pipe	0.6	0.1	0.1	0.0
Sub-total		1.9	1.8	2.6	5.4
Manufacturing:	Pipe	Included in	7.2	12.4	15.9
	Non-pipe	the above	1.0	1.1	4.6
Sub-total			8.2	13.5	20.5
Total		1.9	10.0	16.1	25.9

Table 153 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (5/8)

Unit: 10^6 m^3/y

City/Town Code: 216 Sibu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	5.9	7.9	12.3	28.1
	Non-pipe	0.4	0.0	0.0	0.0
Sub-total		6.3	7.9	12.3	28.1
Manufacturing:	Pipe	Included in	0.4	0.4	2.1
	Non-pipe	the above	0.4	0.4	2.1
Sub-total			0.8	0.8	4.2
Total		6.3	8.7	13.1	32.3
2. Source Demand					
Domestic:	Pipe	7.5	10.3	16.1	37.0
	Non-pipe	0.5	0.0	0.0	0.0
Sub-total		8.0	10.3	16.1	37.0
Manufacturing:	Pipe	Included in	0.5	0.5	2.8
	Non-pipe	the above	0.5	0.5	2.8
Sub-total			1.0	1.0	5.6
Total		8.0	11.3	17.1	42.6

Table 154 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (6/8)

Unit: 10^6 m^3/y

City/Town Code: 217 Sarikei

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.6	1.3	2.2	5.3
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.6	1.3	2.2	5.3
Manufacturing:	Pipe	Included in	0.2	0.2	0.8
	Non-pipe	the above	0.1	0.2	0.8
Sub-total			0.3	0.4	1.6
Total		0.6	1.6	2.6	6.9
2. Source Demand					
Domestic:	Pipe	0.9	1.9	2.9	7.0
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.9	1.9	2.9	7.0
Manufacturing:	Pipe	Included in	0.2	0.2	1.0
	Non-pipe	the above	0.2	0.2	1.0
Sub-total			0.4	0.4	2.0
Total		0.9	2.3	3.3	9.0

Table 155 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (7/8)

Unit: 10^6 m^3/y

City/Town Code: 218 Serian

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.3	0.3	0.4	1.4
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.3	0.3	0.4	1.4
Manufacturing:	Pipe	Included in	0.0	0.0	0.2
	Non-pipe	the above	0.0	0.0	0.2
Sub-total			0.0	0.0	0.4
Total		0.3	0.3	0.4	1.8
2. Source Demand					
Domestic:	Pipe	0.4	0.4	0.5	1.8
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.4	0.5	1.8
Manufacturing:	Pipe	Included in	0.0	0.0	0.2
	Non-pipe	the above	0.0	0.0	0.2
Sub-total			0.0	0.0	0.4
Total		0.4	0.4	0.5	2.2

Table 156 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1 (8/8)

Unit: 10^6 m^3/y

City/Town Code: 219 Kuching

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	15.4	17.1	22.0	43.6
	Non-pipe	0.8	0.0	0.0	0.0
Sub-total		16.2	17.1	22.0	43.6
Manufacturing:	Pipe	Included in	0.8	0.9	4.7
	Non-pipe	the above	0.8	0.9	4.7
Sub-total			1.6	1.8	9.4
Total		16.2	18.7	23.8	53.0
2. Source Demand					
Domestic:	Pipe	19.5	22.6	28.9	57.4
	Non-pipe	1.0	0.0	0.0	0.0
Sub-total		20.5	22.6	28.9	57.4
Manufacturing:	Pipe	Included in	1.1	1.2	6.2
	Non-pipe	the above	1.1	1.2	6.2
Sub-total			2.2	2.4	12.4
Total		20.5	24.8	31.3	69.8

Table 157 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 1

Sarawak Urban Total
City/Town Code: 212 - 219

Unit: 10^6 m^3/y

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	26.5	32.4	46.2	101.6
	Non-pipe	2.9	0.4	0.4	0.0
Sub-total		29.4	32.8	46.6	101.6
Manufacturing:	Pipe	Included in	8.8	13.4	33.4
	Non-pipe	the above	4.2	4.8	24.8
Sub-total			13.0	18.2	58.2
Total		29.4	45.8	64.8	159.8
2. Source Demand					
Domestic:	Pipe	34.7	43.6	60.9	133.9
	Non-pipe	4.1	0.4	0.4	0.0
Sub-total		38.8	44.0	61.3	133.9
Manufacturing:	Pipe	Included in	12.0	17.5	43.9
	Non-pipe	the above	5.8	6.2	32.6
Sub-total			17.8	23.7	76.5
Total		38.8	61.8	85.0	210.4

Table 158 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (1/11)

Unit: 10^6 m^3/y

City/Town Code: 201 Tawau

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	2.9	3.1	4.4	9.0
	Non-pipe	0.5	0.3	0.2	0.2
Sub-total		3.4	3.4	4.6	9.2
Manufacturing:	Pipe	Included in	0.4	0.4	1.0
	Non-pipe	the above	0.4	0.4	1.0
Sub-total			0.8	0.8	2.0
Total		3.4	4.2	5.4	11.2
2. Source Demand					
Domestic:	Pipe	5.1	5.2	5.8	11.8
	Non-pipe	0.6	0.3	0.2	0.2
Sub-total		5.7	5.5	6.0	12.0
Manufacturing:	Pipe	Included in	0.5	0.6	1.3
	Non-pipe	the above	0.5	0.6	1.3
Sub-total			1.0	1.2	2.6
Total		5.7	6.5	7.2	14.6

Table 159 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (2/11)

Unit: 10^6 m^3/y

City/Town Code: 202 Semporna

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.3	0.4	1.0
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.3	0.4	1.0
Manufacturing:	Pipe	Included in	0.1	0.1	0.1
	Non-pipe	the above	0.0	0.0	0.1
Sub-total			0.1	0.1	0.2
Total		0.4	0.4	0.5	1.2
2. Source Demand					
Domestic:	Pipe	0.6	0.5	0.5	1.3
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.6	0.5	0.5	1.3
Manufacturing:	Pipe	Included in	0.1	0.1	0.1
	Non-pipe	the above	0.1	0.1	0.1
Sub-total			0.2	0.2	0.2
Total		0.6	0.7	0.7	1.5

Table 160 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (3/11)

Unit: 10^6 m^3/y

City/Town Code: 203 Lahadu Datu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.5	1.0	1.8	4.8
	Non-pipe	0.1	0.1	0.2	0.1
Sub-total		0.6	1.1	2.0	4.9
Manufacturing:	Pipe	Included in	0.1	0.2	0.6
	Non-pipe	the above	0.1	0.2	0.6
Sub-total			0.2	0.4	1.2
Total		0.6	1.3	2.4	6.1
2. Source Demand					
Domestic:	Pipe	1.0	1.5	2.4	6.3
	Non-pipe	0.1	0.1	0.1	0.1
Sub-total		1.1	1.6	2.5	6.4
Manufacturing:	Pipe	Included in	0.2	0.3	0.7
	Non-pipe	the above	0.2	0.3	0.7
Sub-total			0.4	0.6	1.4
Total		1.1	2.0	3.1	7.8

Table 161 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (4/11)

Unit: 10^6 m^3/y

City/Town Code: 204 Sandakan

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	4.5	5.1	7.7	14.0
	Non-pipe	1.2	0.3	0.2	0.2
Sub-total		5.7	5.4	7.9	14.2
Manufacturing:	Pipe	Included in	0.9	1.1	2.8
	Non-pipe	the above	0.9	1.1	2.8
Sub-total			1.8	2.2	5.6
Total		5.7	7.2	10.1	19.8
2. Source Demand					
Domestic:	Pipe	7.9	7.8	10.1	18.5
	Non-pipe	1.5	0.3	0.2	0.2
Sub-total		9.4	8.1	10.3	18.7
Manufacturing:	Pipe	Included in	1.2	1.5	3.7
	Non-pipe	the above	1.2	1.5	3.7
Sub-total			2.4	3.0	7.4
Total		9.4	10.5	13.3	26.1

Table 162 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (5/11)

Unit: 10^6 m^3/y

City/Town Code: 205 Ranau

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.2	0.3	0.4	1.2
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.2	0.3	0.4	1.2
Manufacturing:	Pipe	Included in	0.1	0.1	0.2
	Non-pipe	the above	0.1	0.1	0.2
Sub-total			0.2	0.2	0.4
Total		0.2	0.5	0.6	1.6
2. Source Demand					
Domestic:	Pipe	0.4	0.5	0.6	1.6
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.5	0.6	1.6
Manufacturing:	Pipe	Included in	0.1	0.1	0.2
	Non-pipe	the above	0.1	0.1	0.2
Sub-total			0.2	0.2	0.4
Total		0.4	0.7	0.8	2.0

Table 163 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (6/11)

Unit: 10^6 m^3/y

City/Town Code: 206 Kudat

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.6	0.6	1.1	2.5
	Non-pipe	0.2	0.1	0.1	0.0
Sub-total		0.8	0.7	1.2	2.5
Manufacturing:	Pipe	Included in	0.1	0.2	0.4
	Non-pipe	the above	0.1	0.2	0.4
Sub-total			0.2	0.4	0.8
Total		0.8	0.9	1.6	3.3
2. Source Demand					
Domestic:	Pipe	1.0	0.9	1.4	3.4
	Non-pipe	0.3	0.1	0.1	0.0
Sub-total		1.3	1.0	1.5	3.4
Manufacturing:	Pipe	Included in	0.2	0.2	0.5
	Non-pipe	the above	0.2	0.2	0.5
Sub-total			0.4	0.4	1.0
Total		1.3	1.4	1.9	4.4

Table 164 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (7/11)

Unit: 10^6 m^3/y

City/Town Code: 207 Kota Belud

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.4	0.5	1.2
	Non-pipe	0.1	0.0	0.0	0.0
Sub-total		0.5	0.4	0.5	1.2
Manufacturing:	Pipe	Included in	0.1	0.1	0.2
	Non-pipe	the above	0.1	0.1	0.2
Sub-total			0.2	0.2	0.4
Total		0.5	0.6	0.7	1.6
2. Source Demand					
Domestic:	Pipe	0.7	0.7	0.7	1.6
	Non-pipe	0.1	0.0	0.0	0.0
Sub-total		0.8	0.7	0.7	1.6
Manufacturing:	Pipe	Included in	0.1	0.1	0.2
	Non-pipe	the above	0.1	0.1	0.2
Sub-total			0.2	0.2	0.4
Total		0.8	0.9	0.9	2.0

Table 165 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (8/11)

Unit: 10^6 m^3/y

City/Town Code: 208 Kota Kinabalu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	9.4	11.1	14.5	27.8
	Non-pipe	0.9	0.0	0.0	0.0
Sub-total		10.3	11.1	14.5	27.8
Manufacturing:	Pipe	Included in	0.8	1.0	2.5
	Non-pipe	the above	0.8	1.0	2.5
Sub-total			1.6	2.0	5.0
Total		10.3	12.7	16.5	32.8
2. Source Demand					
Domestic:	Pipe	16.4	16.8	19.2	36.6
	Non-pipe	1.0	0.0	0.0	0.0
Sub-total		17.4	16.8	19.2	36.6
Manufacturing:	Pipe	Included in	1.1	1.3	3.2
	Non-pipe	the above	1.1	1.3	3.2
Sub-total			2.2	2.6	6.4
Total		17.4	19.0	21.8	43.0

Table 166 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (9/11)

Unit: 10^6 m^3/y

City/Town Code: 209 Papar

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.8	1.4	2.4
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.8	1.4	2.4
Manufacturing:	Pipe	Included in	0.1	0.1	0.2
	Non-pipe	the above	0.1	0.1	0.2
Sub-total			0.2	0.2	0.4
Total		0.4	1.0	1.6	2.8
2. Source Demand					
Domestic:	Pipe	0.6	1.3	1.9	3.1
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.6	1.3	1.9	3.1
Manufacturing:	Pipe	Included in	0.1	0.1	0.3
	Non-pipe	the above	0.1	0.1	0.3
Sub-total			0.2	0.2	0.6
Total		0.6	1.5	2.1	3.7

Table 167 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (10/11)

Unit: 10^6 m^3/y

City/Town Code: 210 Keningau

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.4	0.5	0.6	1.5
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.5	0.6	1.5
Manufacturing:	Pipe	Included in	0.1	0.1	0.2
	Non-pipe	the abovd	0.1	0.1	0.2
Sub-total			0.2	0.2	0.4
Total		0.4	0.7	0.8	1.9
2. Source Demand					
Domestic:	Pipe	0.7	0.8	0.8	1.9
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.7	0.8	0.8	1.9
Manufacturing:	Pipe	Included in	0.1	0.1	0.2
	Non-pipe	the above	0.1	0.1	0.2
Sub-total			0.2	0.2	0.4
Total		0.7	1.0	1.0	2.3

Table 168 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2 (11/11)

Unit: 10^6 m^3/y

City/Town Code: 211 Labuan

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	1.1	1.7	2.4	5.6
	Non-pipe	0.1	0.1	0.1	0.1
Sub-total		1.2	1.8	2.5	5.7
Manufacturing:	Pipe	Included in	5.1	6.1	8.8
	Non-pipe	the above	0.0	0.0	0.0
Sub-total			5.1	6.1	8.8
Total		1.2	6.9	8.6	14.5
2. Source Demand					
Domestic:	Pipe	1.9	2.8	3.1	7.4
	Non-pipe	0.1	0.1	0.1	0.1
Sub-total		2.0	2.9	3.2	7.5
Manufacturing:	Pipe	Included in	7.6	8.0	11.6
	Non-pipe	the above	0.0	0.0	0.0
Sub-total			7.6	8.0	11.6
Total		2.0	10.5	11.2	19.1

Table 169 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SABAH FOR CASE 2

Sabah Urban Total
City/Town Code: 201 - 211

Unit: 10^6 m^3/y

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	20.8	24.9	35.2	71.0
	Non-pipe	3.1	0.9	0.8	0.6
Sub-total		23.9	25.8	36.0	71.6
Manufacturing:	Pipe	Included in	7.9	9.5	17.0
	Non-pipe	the above	2.7	3.3	8.2
Sub-total			10.6	12.8	25.2
Total		23.9	36.4	48.8	96.8
2. Source Demand					
Domestic:	Pipe	36.3	38.8	46.5	93.5
	Non-pipe	3.7	0.9	0.7	0.6
Sub-total		40.0	39.7	47.2	94.1
Manufacturing:	Pipe	Included in	11.3	12.4	22.0
	Non-pipe	the above	3.7	4.4	10.4
Sub-total			15.0	16.8	32.4
Total			54.7	64.0	126.5

Table 170 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (1/8)

Unit: 10^6 m^3/y

City/Town Code: 212 Limbang

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.5	0.9	1.2	2.2
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.5	0.9	1.2	2.2
Manufacturing:	Pipe	Included in	0.0	0.0	0.0
	Non-pipe	the above	0.0	0.0	0.0
Sub-total			0.0	0.0	0.0
Total		0.5	0.9	1.2	2.2
2. Source Demand					
Domestic:	Pipe	0.7	1.3	1.6	2.9
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.7	1.3	1.6	2.9
Manufacturing:	Pipe	Included in	0.0	0.0	0.0
	Non-pipe	the above	0.0	0.0	0.0
Sub-total			0.0	0.0	0.0
Total		0.7	1.3	1.6	2.9

Table 171 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (2/8)

Unit: 10^6 m^3/y

City/Town Code: 213 Marudi

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.3	0.4	0.6	1.2
	Non-pipe	0.1	0.0	0.0	0.0
Sub-total		0.4	0.4	0.6	1.2
Manufacturing:	Pipe	Included in	0.3	0.2	0.5
	Non-pipe	the above	0.2	0.2	0.5
Sub-total			0.5	0.4	1.0
Total		0.4	0.9	1.0	2.2
2. Source Demand					
Domestic:	Pipe	0.4	0.7	0.8	1.6
	Non-pipe	0.2	0.0	0.0	0.0
Sub-total		0.6	0.7	0.8	1.6
Manufacturing:	Pipe	Included in	0.3	0.3	0.6
	Non-pipe	the above	0.3	0.3	0.6
Sub-total			0.6	0.6	1.2
Total		0.6	1.3	1.4	2.8

Table 172 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (3/8)

Unit: 10^6 m^3/y

City/Town Code: 214 Miri

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	2.7	3.2	4.8	11.2
	Non-pipe	1.2	0.3	0.3	0.1
Sub-total		3.9	3.5	5.1	11.3
Manufacturing:	Pipe	Included in	2.0	2.0	4.1
	Non-pipe	the above	2.0	2.0	4.1
Sub-total			4.0	4.0	8.2
Total		3.9	7.5	9.1	19.5
2. Source Demand					
Domestic:	Pipe	4.0	4.7	6.3	14.8
	Non-pipe	1.8	0.3	0.3	0.1
Sub-total		5.8	5.0	6.6	14.9
Manufacturing:	Pipe	Included in	2.6	2.7	5.4
	Non-pipe	the above	2.6	2.7	5.4
Sub-total			5.2	5.4	10.8
Total		5.8	10.2	12.0	25.7

Table 173 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (4/8)

Unit: 10^6 m^3/y

City/Town Code: 215 Bintulu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.8	1.0	1.7	3.0
	Non-pipe	0.4	0.2	0.2	0.1
Sub-total		1.2	1.2	1.9	3.1
Manufacturing:	Pipe	Included in	5.0	6.3	9.8
	Non-pipe	the above	0.7	0.7	1.2
Sub-total			5.7	7.0	11.0
Total		1.2	6.9	8.9	14.1
2. Source Demand					
Domestic:	Pipe	1.3	1.4	2.2	3.9
	Non-pipe	0.6	0.2	0.2	0.1
Sub-total		1.9	1.6	2.4	4.0
Manufacturing:	Pipe	Included in	7.0	8.3	12.9
	Non-pipe	the above	1.0	0.9	1.6
Sub-total			8.0	9.2	14.5
Total		1.9	9.6	11.6	18.5

Table 174 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (5/8)

Unit: 10^6 m^3/y

City/Town Code: 216 Sibu

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	5.9	7.8	11.5	23.3
	Non-pipe	0.4	0.0	0.0	0.0
Sub-total		6.3	7.8	11.5	23.3
Manufacturing:	Pipe	Included in	0.4	0.4	0.7
	Non-pipe	the above	0.4	0.4	0.7
Sub-total			0.8	0.8	1.4
Total		6.3	8.6	12.3	24.7
2. Source Demand					
Domestic:	Pipe	7.5	10.3	15.2	30.7
	Non-pipe	0.5	0.0	0.0	0.0
Sub-total		8.0	10.3	15.2	30.7
Manufacturing:	Pipe	Included in	0.5	0.5	1.0
	Non-pipe	the above	0.5	0.5	1.0
Sub-total			1.0	1.0	2.0
Total		8.0	11.3	16.2	32.7

Table 175 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (6/8)

Unit: 10^6 m^3/y

City/Town Code: 217 Sarikei

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.6	1.2	2.0	4.3
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.6	1.2	2.0	4.3
Manufacturing:	Pipe	Included in	0.2	0.1	0.3
	Non-pipe	the above	0.1	0.1	0.3
Sub-total			0.3	0.2	0.6
Total		0.6	1.5	2.2	4.9
2. Source Demand					
Domestic:	Pipe	0.9	1.8	2.6	5.6
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.9	1.8	2.6	5.6
Manufacturing:	Pipe	Included in	0.2	0.2	0.4
	Non-pipe	the above	0.2	0.2	0.4
Sub-total			0.4	0.4	0.8
Total		0.9	2.2	3.0	6.4

Table 176 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (7/8)

Unit: 10^6 m^3/y

City/Town Code: 218 Serian

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	0.3	0.3	0.3	1.0
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.3	0.3	0.3	1.0
Manufacturing:	Pipe	Included in	0.0	0.0	0.1
	Non-pipe	the above	0.0	0.0	0.1
Sub-total			0.0	0.0	0.2
Total		0.3	0.3	0.3	1.2
2. Source Demand					
Domestic:	Pipe	0.4	0.4	0.4	1.3
	Non-pipe	0.0	0.0	0.0	0.0
Sub-total		0.4	0.4	0.4	1.3
Manufacturing:	Pipe	Included in	0.0	0.0	0.1
	Non-pipe	the above	0.0	0.0	0.1
Sub-total			0.0	0.0	0.2
Total		0.4	0.4	0.4	1.5

Table 177 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2 (8/8)

Unit: 10^6 m^3/y

City/Town Code: 219 Kuching

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	15.4	16.8	20.4	35.3
	Non-pipe	0.8	0.0	0.0	0.0
Sub-total		16.2	16.8	20.4	35.3
Manufacturing:	Pipe	Included in	0.8	0.8	1.6
	Non-pipe	the above	0.8	0.8	1.6
Sub-total			1.6	1.6	3.2
Total		16.2	18.4	22.0	38.5
2. Source Demand					
Domestic:	Pipe	19.5	22.0	26.9	46.4
	Non-pipe	1.0	0.0	0.0	0.0
Sub-total		20.5	22.0	26.9	46.4
Manufacturing:	Pipe	Included in	1.1	1.1	2.1
	Non-pipe	the above	1.1	1.1	2.1
Sub-total			2.2	2.2	4.2
Total		20.5	24.2	29.1	50.6

Table 178 HISTORICAL AND PROJECTED D&I WATER DEMAND BY CITY/TOWN IN SARAWAK FOR CASE 2

Sarawak Urban Total
City/Town Code: 212 - 219

Unit: 10^6 m^3/y

Item		Estimated 1980	Projected 1985	1990	2000
1. Customer Demand					
Domestic:	Pipe	26.5	31.6	42.5	81.5
	Non-pipe	2.9	0.5	0.5	0.2
Sub-total		29.4	32.1	43.0	81.7
Manufacturing:	Pipe	Included in	8.7	9.8	17.1
	Non-pipe	the above	4.2	4.2	8.5
Sub-total			12.9	14.0	25.6
Total			45.0	57.0	107.3
2. Source Demand					
Domestic:	Pipe	34.7	42.6	56.0	107.2
	Non-pipe	4.1	0.5	0.5	0.2
Sub-total		38.8	43.1	56.5	107.4
Manufacturing:	Pipe	Included in	11.7	13.1	22.5
	Non-pipe	the above	5.7	5.7	11.2
Sub-total			17.4	18.8	33.7
Total		38.8	60.5	75.3	141.1

Table 179 RURAL WATER DEMAND IN PWD RURAL AND MHS RURAL AREAS IN SABAH FOR CASE 1 (DOMESTIC PIPED CUSTOMER DEMAND)

Unit: $10^6 m^3/y$

Basin	PWD Rural				MHS Rural				Total			
	1980	1985	1990	2000	1980	1985	1990	2000	1980	1985	1990	2000
201	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.4
202	0.1	0.1	0.2	0.4	0.1	0.1	0.2	0.5	0.2	0.2	0.4	0.9
203	0.1	0.1	0.2	0.5	0.1	0.1	0.2	0.6	0.2	0.2	0.4	1.1
204	0.0	0.1	0.1	0.3	0.0	0.1	0.2	0.3	0.0	0.2	0.3	0.6
205	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
206	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
207	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.3	0.1	0.2	0.4	0.6
208	0.2	0.3	0.8	2.1	0.2	0.4	1.0	2.2	0.4	0.7	1.8	4.3
209	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.3	0.1	0.2	0.4	0.6
210	0.1	0.1	0.2	0.5	0.1	0.1	0.3	0.6	0.2	0.2	0.5	1.1
211	0.1	0.1	0.4	0.8	0.1	0.2	0.4	1.0	0.2	0.3	0.8	1.8
212	0.1	0.2	0.4	0.9	0.1	0.2	0.5	1.0	0.2	0.4	0.9	1.9
213	0.1	0.2	0.4	0.8	0.1	0.2	0.5	0.9	0.2	0.4	0.9	1.7
214	0.1	0.1	0.2	0.4	0.1	0.1	0.2	0.4	0.2	0.2	0.4	0.8
215	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.4
216	0.1	0.1	0.2	0.5	0.1	0.1	0.2	0.6	0.2	0.2	0.4	1.1
217	0.1	0.3	0.5	1.1	0.2	0.3	0.6	1.2	0.3	0.6	1.1	2.3
218	0.1	0.2	0.4	0.8	0.1	0.2	0.5	0.9	0.2	0.4	0.9	1.7
219	0.9	1.4	2.3	3.6	0.0	0.0	0.0	0.0	0.9	1.4	2.3	3.6
220	0.1	0.1	0.3	0.7	0.1	0.1	0.3	0.7	0.2	0.2	0.6	1.4
221	0.1	0.1	0.3	0.7	0.1	0.2	0.3	0.7	0.2	0.3	0.6	1.4
222	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.4
223	0.1	0.3	0.5	1.1	0.1	0.1	0.2	0.3	0.2	0.4	0.7	1.4
224	0.9	1.7	2.8	6.2	0.1	0.1	0.2	0.6	1.0	1.8	3.0	6.8
225	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
226	0.2	0.3	0.5	1.0	0.1	0.1	0.2	0.3	0.3	0.4	0.7	1.3
Total	3.6	6.5	11.7	24.2	2.2	3.4	7.1	14.6	5.8	9.9	18.8	38.8

Table 180 RURAL WATER DEMAND IN PWD RURAL AND MHS RURAL AREAS IN SARAWAK FOR CASE 1 (DOMESTIC PIPED CUSTOMER DEMAND)

Unit: $10^6 m^3/y$

Basin	PWD Rural				MHS Rural				Total			
	1980	1985	1990	2000	1980	1985	1990	2000	1980	1985	1990	2000
227	0.2	0.2	0.3	0.5	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.7
228	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.3	0.2	0.2	0.4	0.6
229	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.2	0.4	0.5
230	0.1	0.3	0.5	1.2	0.2	0.4	0.6	1.4	0.3	0.7	1.1	2.6
231	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.1	0.2	0.4	0.5
232	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.3	0.1	0.2	0.4	0.6
233	0.1	0.1	0.2	0.5	0.1	0.2	0.2	0.5	0.2	0.3	0.4	1.0
234	0.1	0.1	0.2	0.5	0.1	0.2	0.2	0.6	0.2	0.3	0.4	1.1
235	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
236	0.1	0.1	0.2	0.5	0.1	0.2	0.2	0.5	0.2	0.3	0.4	1.0
237	0.1	0.1	0.2	0.4	0.1	0.2	0.2	0.4	0.2	0.3	0.4	0.8
238	0.1	0.1	0.2	0.4	0.1	0.2	0.2	0.4	0.2	0.3	0.4	0.8
239	0.3	0.5	0.8	1.4	0.1	0.2	0.2	0.4	0.4	0.7	1.0	1.8
240	0.1	0.1	0.2	0.5	0.1	0.2	0.2	0.6	0.2	0.3	0.4	1.1
241	1.1	1.2	2.4	3.8	1.3	2.0	3.0	5.5	2.4	3.2	5.4	9.3
242	0.3	0.4	0.7	1.4	0.1	0.2	0.2	0.5	0.4	0.6	0.9	1.9
243	0.1	0.2	0.4	0.8	0.2	0.3	0.5	0.9	0.3	0.5	0.9	1.7
244	1.3	1.8	2.1	3.3	0.2	0.4	0.6	1.0	1.5	2.2	2.7	4.3
245	0.3	0.6	1.0	2.1	0.5	0.8	1.2	2.3	0.8	1.4	2.2	4.4
246	0.5	0.9	1.7	3.6	0.7	1.2	2.0	4.0	1.2	2.1	3.7	7.6
247	0.3	0.5	0.7	1.1	0.1	0.1	0.2	0.2	0.4	0.6	0.9	1.3
Total	5.3	7.7	12.7	23.3	4.4	7.4	10.7	20.7	9.7	15.1	23.4	44.0

Table 181 RURAL WATER DEMAND IN PWD RURAL AND MHS RURAL AREAS IN SABAH FOR CASE 2 (DOMESTIC PIPED CUSTOMER DEMAND)

Unit: $10^6 m^3/y$

Basin	PWD Rural				MHS Rural				Total			
	1980	1985	1990	2000	1980	1985	1990	2000	1980	1985	1990	2000
201	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.4
202	0.1	0.1	0.2	0.4	0.1	0.1	0.2	0.4	0.2	0.2	0.4	0.8
203	0.1	0.1	0.2	0.5	0.1	0.1	0.2	0.6	0.2	0.2	0.4	1.1
204	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.3	0.0	0.2	0.2	0.5
205	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
206	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
207	0.0	0.1	0.1	0.3	0.1	0.1	0.2	0.3	0.1	0.2	0.3	0.6
208	0.2	0.3	0.7	1.9	0.2	0.4	0.8	2.2	0.4	0.7	1.5	4.1
209	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.1	0.2	0.3	0.5
210	0.1	0.1	0.2	0.5	0.1	0.1	0.2	0.6	0.2	0.2	0.4	1.1
211	0.1	0.1	0.3	0.8	0.1	0.2	0.3	0.9	0.2	0.3	0.6	1.7
212	0.1	0.2	0.3	0.8	0.1	0.2	0.4	0.8	0.2	0.4	0.7	1.6
213	0.1	0.2	0.3	0.6	0.1	0.2	0.3	0.7	0.2	0.4	0.6	1.3
214	0.1	0.1	0.2	0.3	0.1	0.1	0.2	0.3	0.2	0.2	0.4	0.6
215	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.2
216	0.1	0.1	0.2	0.4	0.1	0.1	0.2	0.5	0.2	0.2	0.4	0.9
217	0.1	0.3	0.4	0.8	0.2	0.3	0.5	1.0	0.3	0.6	0.9	1.8
218	0.1	0.2	0.3	0.6	0.1	0.2	0.3	0.7	0.2	0.4	0.6	1.3
219	0.8	1.3	1.7	2.8	0.0	0.0	0.0	0.1	0.8	1.3	1.7	2.9
220	0.1	0.1	0.2	0.5	0.1	0.1	0.2	0.6	0.2	0.2	0.4	1.1
221	0.1	0.1	0.2	0.5	0.1	0.2	0.3	0.6	0.2	0.3	0.5	1.1
222	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.4
223	0.1	0.2	0.5	1.1	0.1	0.1	0.2	0.2	0.2	0.3	0.7	1.3
224	0.9	1.6	2.2	5.0	0.1	0.1	0.2	0.5	1.0	1.7	2.4	5.5
225	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
226	0.2	0.3	0.5	0.9	0.1	0.1	0.1	0.2	0.3	0.4	0.6	1.1
Total	3.5	6.2	9.5	20.2	2.2	3.4	5.7	12.9	5.7	9.6	15.2	33.1

Table 182 RURAL WATER DEMAND IN PWD RURAL AND MHS RURAL AREAS IN SARAWAK FOR CASE 2 (DOMESTIC PIPED CUSTOMER DEMAND)

Unit: $10^6 m^3/y$

Basin	PWD Rural				MHS Rural				Total			
	1980	1985	1990	2000	1980	1985	1990	2000	1980	1985	1990	2000
227	0.2	0.2	0.3	0.4	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5
228	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.2	0.4	0.5
229	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4
230	0.1	0.3	0.5	1.1	0.2	0.4	0.6	1.4	0.3	0.7	1.1	2.5
231	0.0	0.1	0.2	0.3	0.1	0.1	0.1	0.3	0.1	0.2	0.3	0.6
232	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.4	0.1	0.2	0.4	0.7
233	0.1	0.1	0.2	0.5	0.1	0.2	0.2	0.6	0.2	0.3	0.4	1.1
234	0.1	0.1	0.2	0.5	0.1	0.2	0.2	0.6	0.2	0.3	0.4	1.1
235	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.0	0.2	0.2	0.4
236	0.1	0.1	0.2	0.4	0.1	0.2	0.2	0.5	0.2	0.3	0.4	0.9
237	0.1	0.1	0.2	0.3	0.1	0.2	0.2	0.4	0.2	0.3	0.4	0.7
238	0.1	0.1	0.2	0.3	0.1	0.2	0.2	0.4	0.2	0.3	0.4	0.7
239	0.3	0.4	0.7	1.4	0.1	0.2	0.2	0.4	0.4	0.6	0.9	1.8
240	0.1	0.1	0.2	0.5	0.1	0.2	0.2	0.5	0.2	0.3	0.4	1.0
241	1.1	1.6	2.0	3.1	1.3	1.9	2.6	5.0	2.4	3.5	4.6	8.1
242	0.3	0.4	0.6	1.2	0.1	0.2	0.2	0.4	0.4	0.6	0.8	1.6
243	0.1	0.2	0.3	0.7	0.2	0.3	0.4	0.8	0.3	0.5	0.7	1.5
244	1.2	1.6	1.9	2.7	0.2	0.4	0.5	0.9	1.4	2.0	2.4	3.6
245	0.3	0.6	1.8	1.8	0.5	0.8	1.0	2.2	0.8	1.4	1.8	4.0
246	0.5	0.9	1.4	3.3	0.7	1.1	1.8	4.0	1.2	2.0	3.2	7.3
247	0.3	0.5	0.6	1.1	0.1	0.1	0.2	0.2	0.4	0.6	0.8	1.3
Total	5.2	7.8	11.1	20.5	4.4	7.2	9.6	19.8	9.6	15.0	20.7	40.3

Table 183 ESTIMATED AND PROJECTED GROSS VALUE OF OUTPUT IN MANUFACTURING SECTOR AT 1970 PRICE IN SABAH

Unit: $M\$10^6$

Commodity Group	Estimated 1980	Projected 1985	1990	2000
1. Case 1				
1. Food	59	99	145	1,023
2. Textile	1	2	2	17
3. Wood & Wood Products	33	55	80	564
4. Paper & Paper Products	0	0	0	0
5. Publishments	9	15	22	158
6. Chemicals	23	74	173	1,016
7. Rubber & Rubber Products	7	12	17	119
8. Non Metal	2	3	4	28
9. Basic Metal	0	43	145	763
10. Machinery	14	23	34	238
11. Miscellaneous	7	11	16	114
Total	155	337	638	4,040
2. Case 2				
1. Food	59	93	118	292
2. Textile	1	2	2	5
3. Wood & Wood Products	33	51	65	161
4. Paper & Paper Products	0	0	0	0
5. Publishments	9	14	18	45
6. Chemicals	23	71	127	350
7. Rubber & Rubber Products	7	11	14	34
8. Non Metal	2	3	3	8
9. Basic Metal	0	43	101	294
10. Machinery	14	22	27	68
11. Miscellaneous	7	10	13	33
Total	155	320	488	1,290

Table 184 ESTIMATED AND PROJECTED GROSS VALUE OF OUTPUT IN MANUFACTURING SECTOR AT 1970 PRICE IN SARAWAK

Unit: M$10^6

Commodity Group	Estimated 1980	Projected 1985	1990	2000
1. Case 1				
1. Food	131	147	164	840
2. Textile	3	3	3	16
3. Wood & Wood Products	232	260	291	1,492
4. Paper & Paper Products	0	0	0	1
5. Publishments	14	15	17	87
6. Chemicals	51	339	1,015	4,731
7. Rubber & Rubber Products	8	9	10	51
8. Non Metal	12	13	15	76
9. Basic Metal	1	1	2	8
10. Machinery	43	48	54	278
11. Miscellaneous	3	4	4	22
Total	498	839	1,575	7,602
2. Case 2				
1. Food	131	142	151	286
2. Textile	3	3	3	6
3. Wood & Wood Products	232	251	267	507
4. Paper & Paper Products	0	0	0	0
5. Publishments	14	15	16	30
6. Chemicals	51	337	723	2,039
7. Rubber & Rubber Products	8	9	9	17
8. Non Metal	12	13	14	26
9. Basic Metal	1	1	2	3
10. Machinery	43	47	50	94
11. Miscellaneous	3	4	4	8
Total	498	822	1,239	3,016

Table 185 PERCENTAGE SHARE OF GROSS VALUE OF OUTPUT OF MANUFACTURING SECTOR BASED ON SURVEY OF MANUFACTURING INDUSTRIES IN 1974

Unit: %

Sabah		Sarawak	
Residency	Share	Division	Share
Tawau	20.35	First	19.02
Sandakan	34.25	Second	3.03
West Coast	42.08	Third	8.34
Interim	1.86	Fourth	66.36
Labuan	1.46	Fifth	0.19
		Sixth	3.06
		Seventh	0.00
Total	100.00	Total	100.00

Table 186 ESTIMATED GROSS VALUE OF OUTPUT OF NEW LARGE SCALE INDUSTRIAL DEVELOPMENT PROJECTS

Unit: $M\$10^6$

Commodity	State	Production Capacity Per Year: Quantities	Gross Output
Basic Metal Products	Sabah (Labuan District)	Sponge iron [1] 700×10^3 tons	297
Petrochemical Products	Sabah (Labuan District)	Methanol & LPG [1] 700×10^3 tons	237
	Sarawak (Bintulu District)	LNG [2] $6{,}000 \times 10^3$ tons	1,380
		Urea/Ammonia [2] Urea: 1,500 t/d Ammo: 1,000 t/d	570

Remarks; Price: Constant price of 1970.

Unit price:

a. Sponge iron - based upon the export price by Malayawata in 1978, M$625/t.

b. Petroleum gas - based upon the export price from Kuwait in 1981, US$258/t.

c. Urea - based upon the international market price, average of 1970 to 1974, US$285/t, by Price Prospects for Major Primary Commodities, January 1980, World Bank.

d. LNG - based upon the export price of Brunei in 1980, which was US$253/t being adjusted at 1970 constant price by the growth rate of international price of petroleum.

Average price in 1970-1974: US$ 9.7/barrel
Average price in 1980 : US$28.0/barrel

Source; 1) : Ref. 62
2) : Ref. 63

Table 187 NET UNIT MANUFACTURING WATER USE PER GROSS VALUE OF MANUFACTURING OUTPUT BY COMMODITY GROUP

Unit: $m^3/d/M\$10^6/y$

	Commodity Group	Assumed/1 1975	Estimated/2 1980	Projected 1985/2	Projected 1990 & 2000
1.	Food	77.0	75.0	73.0	71.0
2.	Textile	79.0	77.0	75.0	73.0
3.	Wood Product	12.0	12.3	12.7	13.0
4.	Paper Product	581.0	560.7	540.3	520.0
5.	Publishing	10.0	10.0	10.0	10.0
6.	Chemicals	140.0	136.7	133.3	130.0
7.	Rubber Manufacturing	126.0	105.7	85.3	65.0
8.	Non-metal	88.0	86.7	69.3	68.0
9.	Basic Metal	53.0	51.7	50.3	49.0
10.	Machinery	16.0	17.3	18.7	20.0
11.	Miscellaneous	48.0	48.3	48.7	49.0

Remarks; /1: Assumed from data in Japan in 1970
/2: Obtained by interpolation

Note; The values indicated are net manufacturing water use(excluding the water used cyclically)per $M\$10^6$ of the gross value of manufacturing output at 1970 price.

Table 188 SUMMARY OF PROJECTED D&I WATER DEMAND (C.D.) IN SABAH

Unit: $10^6 m^3/y$

	Estimated	Projected			Average Annual Growth Rate (%)
	1980	1985	1990	2000	1980-2000
(1) Case 1					
1. Domestic Water	21.9 (84%)	35.6 (81%)	56.6 (84%)	126.7 (77%)	9.1
2. Industrial Water	4.6 (16%)	8.2 (19%)	10.7 (16%)	38.7 (23%)	11.7
3. D&I Total	26.5(100%)	43.8(100%)	67.3(100%)	165.4(100%)	9.6
4. Served Population(10^3)	490.5	735.4	1,100.6	1,981.3	7.2
5. PCDU ((3)/(4)) (lpcd)	148	163	168	229	2.2
6. Per Capita GDP (M$)	1,771	2,153	2,714	4,670	5.0
(2) Case 2					
1. Domestic Water	21.9 (84%)	34.5 (81%)	50.2 (84%)	104.0 (86%)	8.0
2. Industrial Water	4.6 (16%)	7.9 (19%)	9.5 (16%)	17.0 (14%)	7.2
3. D&I Total	26.5(100%)	42.4(100%)	59.7(100%)	121.0(100%)	7.9
4. Served Population(10^3)	490.5	735.4	997.6	1,758.5	6.6
5. PCDU ((3)/(4)) (lpcd)	148	158	164	189	1.2
6. Per Capita GDP (M$)	1,771	2,103	2,399	3,124	2.9

Note; (1) The above figures do not include non-pipe water demand.

Table 189 SUMMARY OF PROJECTED D&I WATER DEMAND (C.D.) IN SARAWAK

Unit: $10^6 m^3/y$

	Estimated	Projected			Average Annual Growth Rate (%)
	1980	1985	1990	2000	1980-2000
(1) Case 1					
1. Domestic Water	32.4 (87%)	47.5 (83%)	69.6 (83%)	145.6 (80%)	7.9
2. Industrial Water	4.2 (13%)	9.4 (17%)	14.2 (17%)	35.4 (20%)	10.5
3. D&I Total	36.6(100%)	56.9(100%)	83.8(100%)	181.0(100%)	8.3
4. Served Population(10^3)	770.2	1,048.8	1,387.8	2,358.5	5.8
5. PCDU ((3)/(4)) (lpcd)	130	149	165	210	2.4
6. Per Capita GDP (M$)	1,313	1,711	2,225	4,191	6.0
(2) Case 2					
1. Domestic Water	32.4 (87%)	46.5 (83%)	63.2 (86%)	121.9 (87%)	6.9
2. Industrial Water	4.2 (13%)	9.3 (17%)	10.6 (14%)	18.6 (13%)	7.0
3. D&I Total	36.6(100%)	55.8(100%)	73.8(100%)	140.5(100%)	7.0
4. Served Population	770.2	1,044.6	1,315.7	2,180.2	5.3
5. PCDU ((3)/(4)) (lpcd)	130	146	154	177	1.6
6. Per Capita GDP (M$)	1,313	1,664	1,933	2,625	3.5

Note; (1) The above figures do not include non-pipe water demand.

Table 190 CLASSIFICATION OF INCLUSION OF TREATMENT COST AND DISTRIBUTION COST BY WATER SUPPLY

	Treatment	Distribution	Unit (Direct Construction) Cost (M$/CMD)
I. Urban (incl. S/R)			
Public			
Domestic	o	o	*
Manufact.	o	x	*
Private			
Domestic	x	x	90 (Eco.)
Manufact.	x	o /1	*
II. Rural			
Public			
Domestic PWD	o	o	*
MHS	x	o	1,680
Manufact. /2	o	x	*
Palm oil (Sarawak)	o	x	*
Private			
Domestic	x	x	90
Manufact. /2	x	x	1,580
Processing water /3	x	x	1,580

Remarks; * : Unit standard cost (see Table)
/1: Including the distribution cost of "Urban public manufacturing" water supply cost
/2: Only in 2nd Division of Sarawak
/3: Excluding "Palm oil (Sarawak)"
o : Costs for treatment and/or distribution are considered in estimating the unit construction cost.
x : Costs for treatment and/or distribution are not considered in estimating the unit construction cost.

Table 191 ESTIMATED UNIT CONSTRUCTION COST (DIRECT) FOR D&I WATER SUPPLY

(1) Standard Cost

Treatment plant	M$770 per m^3/d of capacity
Distribution system	M$1,430 per m^3/d of capacity
Pump	M$862.5/kW
Pipeline (D: diameter in mm)	
$100 \leqq D \leqq 500$	M$(0.525 x D-5.225)/m
$D > 500$	M$(1.223 x D-353.3)/m

For the following water supply system, another unit costs were applied as shown below.

(2) Urban Area

Private cost for domestic water supply	M$90/$m^3/d$

(3) Rural Area

Public cost for MOH water supply	M$1,680/$m^3/d$
Private cost for domestic water supply	M$90/$m^3/d$
Manufacturing water supply Processing water of palm oil and rubber	M$1,580/$m^3/d$

Remarks; (1) Economic cost at 1980 constant price level

Table 192 CLASSIFICATION OF MANPOWER

Grade	Category	Grade	Category
A	Engineer, Superscale F Engineer, Superscale G Engineer, Senior Timescale Engineer, Timescale Quantity surveyor	C	Stenographer Clerk Storekeeper
B	Technical Assistant, Special Grade Technical Assistant, Timescale	D	Typist Junior Clerk Junior Storekeeper Office Boy Drivers I.M.G.
C	Special Grade Technician Timescale Technician Draftsman Grade I Draftsman Grade II		

Table 193 UNIT MANPOWER REQUIREMENT

Grade	O & M/1	Construction/2
A	1.0	2
B	1.5	2
C	7.5	2
D	60.0	2

Remarks: /1: Persons per every 100 x 10^3 m^3/d of source demand.

/2: Persons per every 100 x 10^3 m^3/d/y

Table 194 DROUGHT AFFECTED VILLAGES/AREA IN SARAWAK

Name of Division	Number of Drought Affected Villages/Areas										Population in 1981/1
	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
First Division	165	0	19	60	39	0	41	119	76	182	71,100
Second Division	7	n.a.	n.a.	n.a.	n.a.	4	4	7	5	11	13,400
Fourth Division	2	0	0	0	0	0	0	0	0	10	2,700
Fifth Division	5	0	0	0	0	0	0	0	0	11	1,900
Sixth Division	2	0	0	0	0	0	0	0	6	13	13,500
Total	181	-	19	60	39	4	45	126	87	227	102,600

Remark; /1: Number of population who were served water transported by PWD through water tankers, boat, launch and trucks.

n.a.: not available

Source: PWD Sarawak

Table 195 DROUGHT AFFECTED POPULATION IN SARAWAK IN 1981

Division	Coastal/Inland	Population Size of Village: Less than 500	500 - 999	1,000 and over	Total
First	Coastal Area	11,484 (43)/2	16,362(24)	17,855 (9)	45,701 (76)
	Inland Area	13,045 (61)	5,188 (8)	7,200 (5)	25,433 (74)
	Sub-Total	24,529(104)	21,550(32)	25,055(14)	71,134(150)
Second	Coastal Area	850 (4)	500 (1)	12,000 (6)	13,350 (11)
	Inland Area	0 (0)	0 (0)	0 (0)	0 (0)
	Sub-Total	850 (4)	500 (1)	12,000 (6)	13,350 (11)
Fourth	Coastal Area	2,194 (9)	552 (1)	0	2,746 (10)
	Inland Area	0 (0)	0 (0)	0	0 (0)
	Sub-Total	2,194 (9)	552 (1)	0	2,746 (10)
Fifth	Coastal Area/1	500 (3)	1,390 (2)	0	1,890 (5)
	Inland Area	0 (0)	0 (0)	0	0 (0)
	Sub-Total	500 (3)	1,390 (2)	0	1,890 (5)
Sixth	Coastal Area	1,480 (6)	0 (0)	10,300 (4)	11,780 (10)
	Inland Area	880 (2)	800 (1)	0 (0)	1,680 (3)
	Sub-Total	2,360 (8)	800 (1)	10,300 (4)	13,460 (13)
Total	Coastal Area	16,508 (65)	18,804(28)	40,155(19)	75,467(112)
	Inland Area	13,925 (63)	5,988 (9)	7,200 (5)	27,113 (77)
	Sub-Total	30,433(128)	24,792(37)	47,355(24)	102,580(189)

Notes; (1) Delineation of "Coastal Area" and "Inland Area" was principally made according to the transport measures as follows supplemented by an observation of the location of the villages on a map.

	Coastal Area	Inland Area
Transportation	Boat, Launch, Water Tanker	Truck

(2) 38 villages/areas whose affected population was not available is excluded.

Remarks; /1: Classified based on the location of the drought affected villages on a map because the information on transport measures were not available in the original data.

/2: Figures in the parentheses show the number of drought affected villages/areas.

Source; PWD Sarawak.

Table 196 SHARE OF WATER CHARGE TO THE TOTAL MONTHLY HOUSEHOLD EXPENDITURE IN SABAH AND SARAWAK IN 1973

Unit: M10^3

	Description	Sabah	Sarawak
A.	Water Charge	7.11	5.89
B.	Total Monthly Expenditure	686.69	520.16
	A/B (%)	1.02	1.13
C.	No. of Household	1,873	2,197

Notes; (1) Survey period: Jan. 1, 1973 - Dec. 31, 1973
(2) Monthly expenditure per household
(3) At 1973 current price
(4) Total monthly expenditure excluding "Miscellaneous expenses and financial expenses"

Source; Household Expenditure Survey, 1973, Malaysia, Department of Statistics

Table 197 TYPICAL WATER RATES IN PWD AND WATER BOARDS IN SARAWAK EFFECTIVE IN 1980

Water Authority/ Water Boards	Water Rates
Serian (3,400)	- M$ 3.50 (min. charge) for individual consumers up to 2,000 gal. in any one month - M$ 1.75/1,000 gal. or part thereof for over 2,000 gal. in any one month
Sri Aman (14,500)	- M$ 1.50/1,000 gal. for all water
Mukah (12,000)	- M$ 3.00 (min. charge) for individual consumers up to 2,000 gal. in any one month - M$ 1.50/1,000 gal. or part thereof for over 2,000 gal. in any one month
Miri (37,000)	Domestic: - M$ 2.50 (min. charge) for up to 2,000 gal. in any one month - M$ 1.25/1,000 gal. for over 2,000 gal. in any one month Domestic/Commercial: - M$ 8.00 (min. charge) for up to 5,000 gal. in any one month - M$ 1.50/1,000 gal. for over 5,000 gal. in any one month Commercial: - M$ 11.00 (min. charge) for individual consumers up to 5,000 gal. in any one month - M$ 2.00/1,000 gal. for over 5,000 gal. in any one month
Bintulu (10,000)	- M$ 3.00 (min. charge) for individual consumers up to 2,000 gal. in any one month - M$ 1.50/1,000 gal. or part thereof for over 2,000 gal. in any one month

Table 197 (Cont'd)

Water Authority/ Water Boards	Water Rates
Marudi (4,800)	- M$ 7.00 (min. charge) for individual consumers up to 4,000 gal. in any one month - M$ 1.25/1,000 gal. or part thereof for over 4,000 gal. in any one month
Limbang (13,000)	- M$ 6.00 (min. charge) for individual consumers up to 4,000 gal. in any one month - M$ 1.50/1,000 gal. for over 4,000 gal. in any one month
Sarikei (18,000)	- M$ 3.00 (min. charge) for individual consumers up to 2,000 gal. in any one month - M$ 1.50/1,000 gal. or part thereof for over 2,000 gal. in any one month
Kapit (4,650)	- M$7.00 (min. charge) for individual consumers up to 4,000 gal. in any one month - M$ 1.75/1,000 gal. or part thereof for over 4,000 gal. in any one month
Kuching (190,370) & Sibu (93,000)	Domestic: - M$ 5.25 (min. charge) for up to 3,000 gal. in any one month - M$ 2.00/1,000 gal. for exceeding 3,000 gal. but not exceeding 10,000 gal. in any one month - M$ 2.25/1,000 gal. for over 10,000 gal. in any one month Domestic/Commercial: - M$ 14.25 (min. charge) for up to 5,000 gal. in any one month - M$ 2.75/1,000 gal. for over 5,000 gal. in any one month

Table 197 (Cont'd)

Water Authority/ Water Boards	Water Rates
Kuching (190,370) & Sibu (93,000)	Commercial: - M$ 18.00 (min. charge) for up to 5,000 gal. in any one month - M$ 3.50/1,000 gal. for over 5,000 gal. in any one month

Remarks; (1) Figures in parentheses under the names of Water Authorities and Water Boards show the served population in 1980.

(2) min. charge = minimum charge

gal. = gallons

Table 198 WATER CHARGE FOR DOMESTIC USE PER MONTH BY CONSUMPTION LEVEL IN SARAWAK IN 1980

Unit: M$
( ): M$/1,000 gal.

Water Authority/ Water Boards	Domestic Consumption Per Month			
	2,000 gal./m	3,000 gal./m	4,000 gal./m	5,000 gal./m
1. Serian	3.50 (m.c) (1.75)	5.25 (1.75)	7.00 (1.75)	8.75 (1.75)
2. Sri Aman	3.00 (1.50)	4.50 (1.50)	6.00 (1.50)	7.50 (1.50)
3. Mukah	3.00 (m.c) (1.50)	4.50 (1.50)	6.00 (1.50)	7.50 (1.50)
4. Miri	2.50 (m.c) (1.25)	3.75 (1.25)	5.00 (1.25)	6.25 (1.25)
5. Bintulu	3.00 (m.c) (1.50)	4.50 (1.50)	6.00 (1.50)	7.50 (1.50)
6. Marudi	7.00 (m.c) (3.50)	7.00 (m.c) (2.33)	7.00 (m.c) (1.75)	8.25 (1.65)
7. Limbang	6.00 (m.c) (3.00)	6.00 (m.c) (2.00)	6.00 (m.c) (1.50)	7.50 (1.50)
8. Sarikei	3.00 (m.c) (1.50)	4.50 (1.50)	6.00 (1.50)	7.50 (1.50)
9. Kapit	7.00 (m.c) (3.50)	7.00 (m.c) (2.33)	7.00 (m.c) (1.75)	8.75 (1.75)
10. Water Boards	5.25 (m.c) (2.63)	5.25 (m.c) (1.75)	7.25 (1.81)	9.25 (1.85)
Ratio of max./min.	2.80	1.87	1.45	1.48

Notes; (1) m.c. stands for minimum charge.
(2) Figures in parentheses show water charges per 1,000 gallons.

Table 199 WATER CHARGES FOR DOMESTIC/COMMERCIAL AND COMMERCIAL PER MONTH BY CONSUMPTION LEVEL IN SARAWAK IN 1980

Unit: M$
( ): M$/1,000 gal.

A. Domestic/Commercial

	Consumption Per Month			
	5,000 gal./m	10,000 gal./m	20,000 gal./m	30,000 gal./m
1. Miri	8.00 (m.c) (1.60)	15.50 (1.55)	30.50 (1.525)	45.50 (1.517)
2. Water Boards	14.25 (m.c) (2.85)	28.00 (2.80)	55.50 (2.775)	83.00 (2.767)

B. Commercial

	Consumption Per Month					
	5,000 gal./m	10,000 gal./m	20,000 gal./m	30,000 gal./m	50,000 gal./m	100,000 gal./m
1. Miri	11.00 (m.c) (2.20)	21.00 (2.10)	41.00 (2.05)	61.00 (2.03)	101.00 (2.02)	201.00 (2.01)
2. Water Boards	18.00 (m.c) (3.60)	35.50 (3.55)	70.50 (3.525)	105.50 (3.517)	175.50 (3.510)	350.50 (3.505)

Notes; (1) m.c. stands for minimum charge.
(2) Figures in parentheses show water charges per 1,000 gallons.

Table 200 SCHEDULE OF WATER RATE OF TOKYO METROPOLITAN BUREAU OF WATER SUPPLY

Minimum Charge			Meter Rate				
Size of Pipeline (mm)	Minimum Charge		First Step	Second Step	Third Step	Fourth Step	Fifth Step
13	410	Consumption (m^3/month)	1-10	11-20	21-30	31-100	101-200
20	550						
25	680	Meter Rate (Yen/m^3)	0	80	100	120	170
30	1,700	Consumption	1-100	101-200	201-1,000		
40	3,400	Meter Rate	120	170	210/1		
50	11,000	Consumption	1-1,000	1,001 and over			
75	24,000	Meter Rate	210	250/2			
100	50,000	Consumption	1 and over				
150	85,000						
200	180,000	Meter Rate	250				
250	250,000						
300	420,000						

Remarks; /1: Applicable to consumption of 201-1,000 m^3/month of customers with pipeline size of 13-25 mm.

/2: Applicable to consumption of 1,001 m^3/month and over of customers with pipeline size of 13-75 mm.

Notes; (1) Effective since December 1978 and thereafter

(2) Special rate:

Customer	Minimum Charge (Yen)	Meter Rate (Yen/m^3)
Public Bath	410	65
Stand-Pipe	250	65

(3) Charge for water-meter usage is nill.

FIGURES

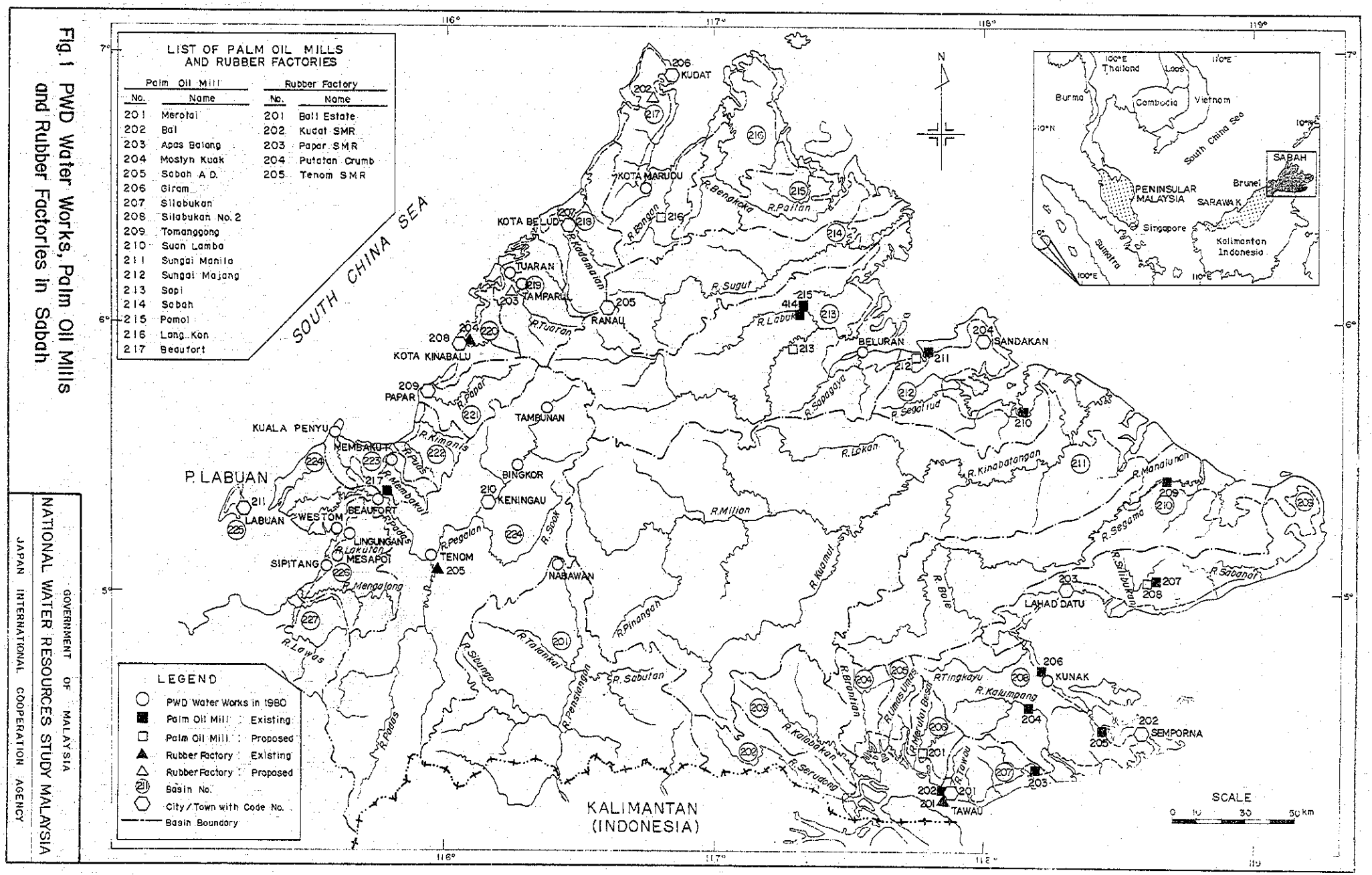

Fig. 1 PWD Water Works, Palm Oil Mills and Rubber Factories in Sabah

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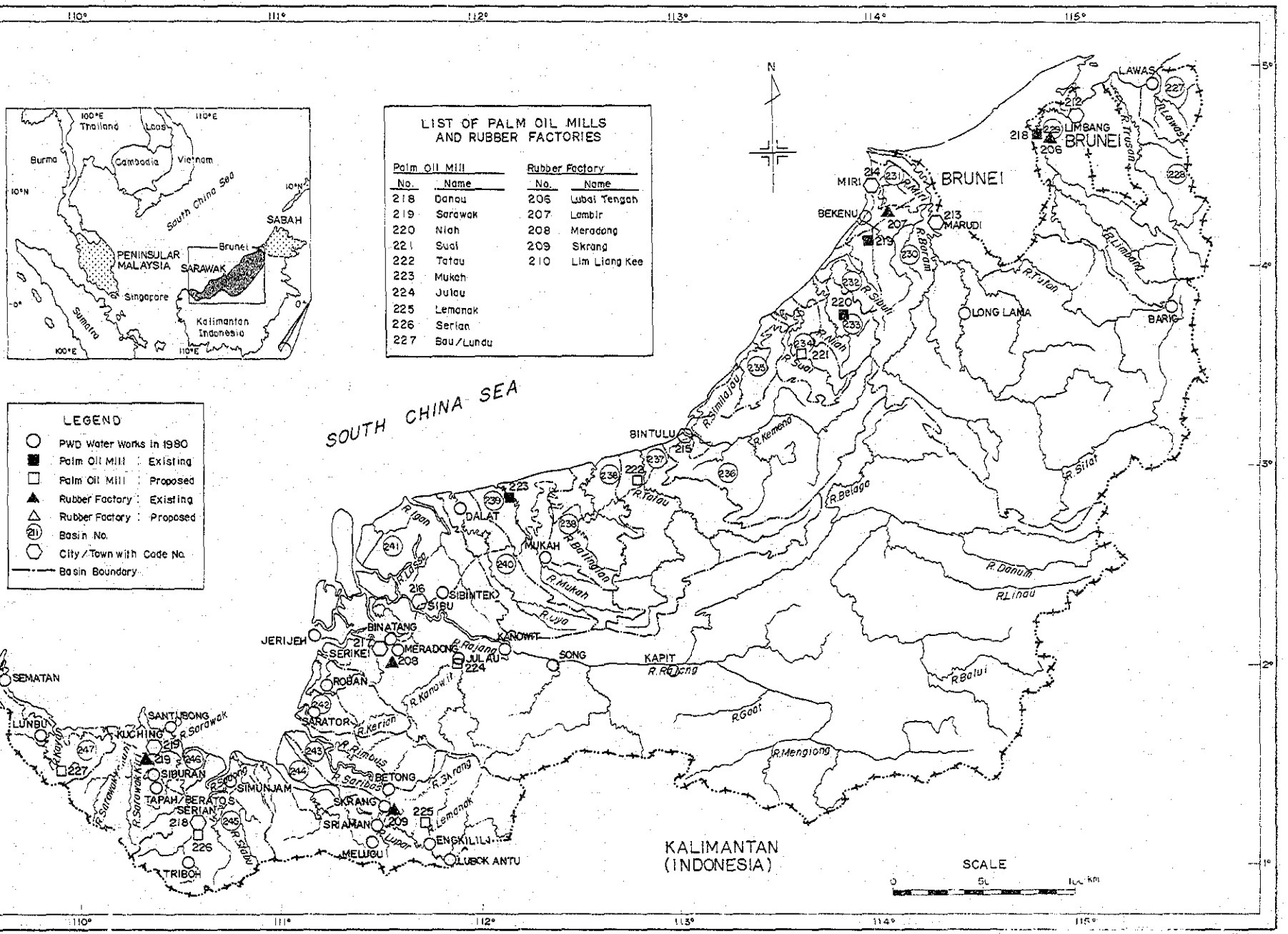
Fig.2 PWD Water Works, Palm Oil Mills and Rubber Factories in Sarawak



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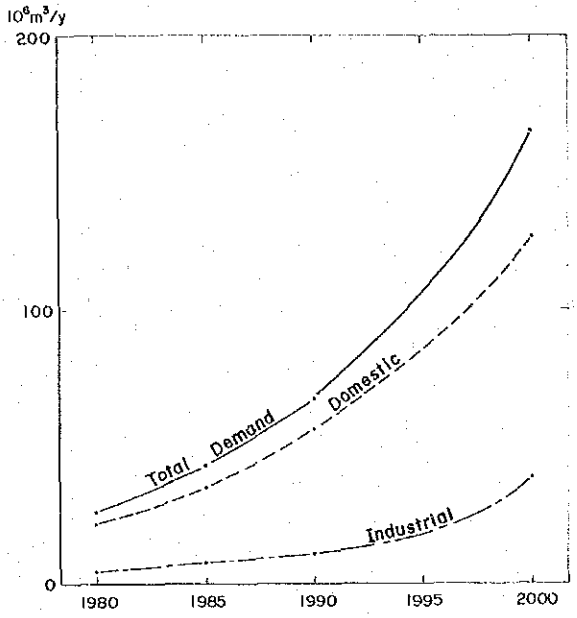

Fig.3 Projected D & I Water Demand in Sabah for Case 1

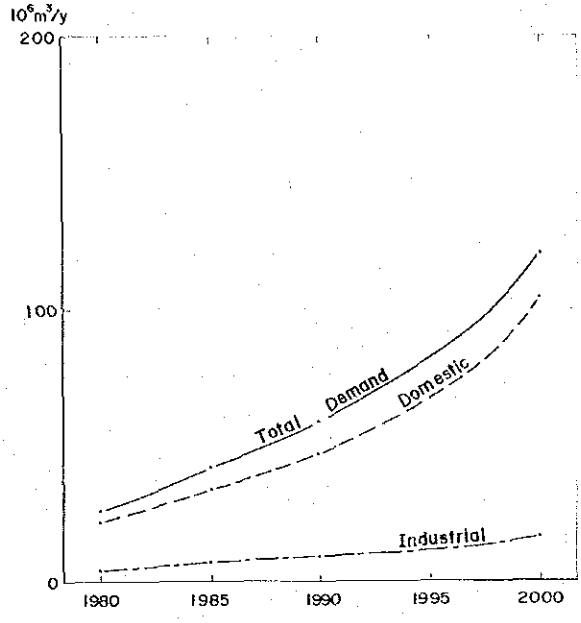

Fig.4 Projected D & I Water Demand in Sabah for Case 2

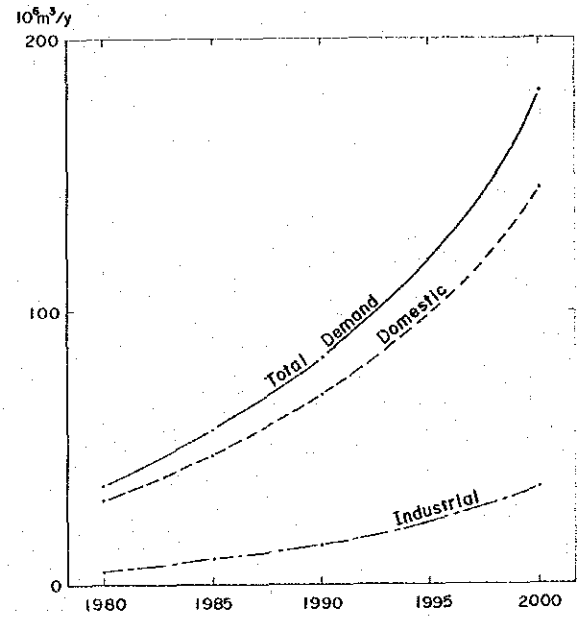

Fig.5 Projected D & I Water Demand in Sarawak for Case 1

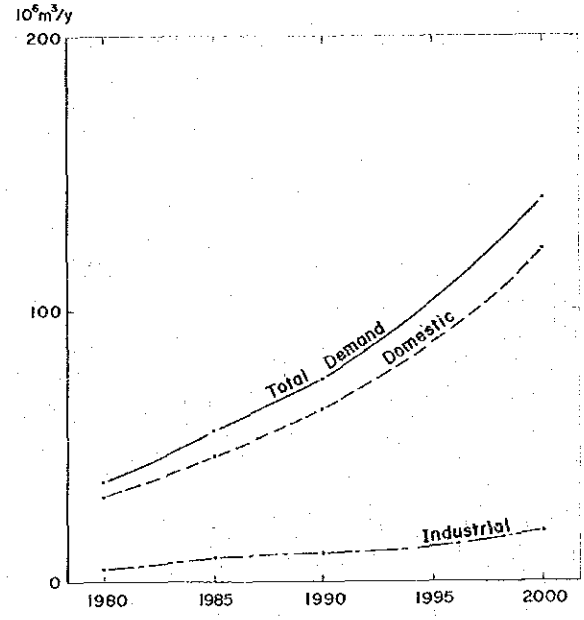

Fig.6 Projected D & I Water Demand in Sarawak for Case 2