

Table 55 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN N. SEMBILAN/
MELAKA/NORTHWEST JOHOR

		Unit: M\$10 ⁶				
		4MP	5MP	6MP	7MP	Total
Source Development	^{/1}	103	891	311	0	1305
Irrigation	N. Sembilan	8	13	7	0	28
	Melaka	11	19	6	0	36
	N.W. Johor	9	14	2	0	25
	Sub-total	28	46	15	0	89
Inland Fishery	N. Sembilan	3	3	35	53	94
	Melaka	0	0	0	0	0
	N.W. Johor	1	1	2	2	6
	Sub-total	4	4	37	55	100
Public Water Supply	N. Sembilan	75	133	138	55	401
	Melaka	47	83	85	34	249
	N.W. Johor	48	84	85	34	251
	Sub-total	170	300	308	123	901
Public Water Supply (Pretreatment facilities)	N. Sembilan	22	23	17	6	66
	Melaka	30	35	26	10	101
	N.W. Johor	20	24	17	7	68
	Sub-total	70	82	60	23	235
Public Sewerage (Effective for river water pollution abatement)	N. Sembilan	27	45	46	18	136
	Melaka	0	0	0	0	0
	N.W. Johor	9	16	16	7	48
	Sub-total	36	61	62	25	184
Public Sewerage (Others)	N. Sembilan	44	75	77	31	227
	Melaka	24	41	42	17	124
	N.W. Johor	0	0	0	0	0
	Sub-total	68	116	119	48	351
Flood Mitigation	N. Sembilan	0	7	14	12	33
	Melaka	5	1	17	17	40
	N.W. Johor	0	0	0	4	4
	Sub-total	5	8	31	33	77
Total		484	1508	943	307	3242

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985 for public water supply and irrigation.

^{/1}: Including the expenditures for the States of N. Sembilan and Melaka and northwest Johor

Table 56 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN JOHOR

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	31	289	28	0	348
Irrigation	9	97	34	0	140
Inland Fishery	3	3	64	35	105
Public Water Supply	246	468	507	203	1,424
Public Water Supply; Pre-treatment facilities	70	55	15	6	146
Public Sewerage (Effective for river water pollution abatement)	55	93	94	38	280
Public Sewerage (Others)	61	106	109	43	319
Flood Mitigation	46	52	64	44	206
Total	521	1,163	915	369	2,968

- Remarks; (1): In 1980 end constant price
 (2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985.
 (3): Source development expenditures include a part of expenditure of the Melaka/Muar region source development plan allocated to the State of Johor.

Table 57 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN PAHANG

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	52	21	0	0	73
Irrigation	24	308	109	59	500
Inland Fishery	4	22	47	71	144
Public Water Supply	197	384	420	169	1,170
Public Water Supply; Pre-treatment facilities	21	30	27	11	89
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	46	80	81	32	239
Flood Mitigation	5	129	146	169	447
Total	349	974	830	511	2,662

- Remarks; (1): In 1980 end constant price
 (2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985.

Table 58 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN TRENGGANU

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	-	-	-	-	-
Irrigation	29	48	19	17	113
Inland Fishery	0	0	0	0	0
Public Water Supply	90	211	249	100	650
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	40	63	61	25	189
Flood Mitigation	3	41	54	58	156
Total	162	363	383	200	1,108

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985.

Table 59 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN KELANTAN

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	103	101	0	0	204
Irrigation	73	396	268	158	895
Inland Fishery	4	15	45	45	109
Public Water Supply	110	285	344	139	878
Public Water Supply; Pre-treatment facilities	0	1	0	0	1
Public Sewerage (Effective for river water pollution abatement)	9	16	17	7	49
Public Sewerage (Others)	52	93	96	38	279
Flood Mitigation	17	34	112	215	378
Total	368	941	882	602	2,793

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985.

Table 60 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	777	3,019	737	177	4,710
Irrigation	198	1,349	799	575	2,921
Inland Fishery	23	87	371	330	811
Public Water Supply	2,119	3,979	4,248	1,706	12,052
Public Water Supply; Pre-treatment facilities	178	191	116	45	530
Public Sewerage (Effective for river water pollution abatement)	573	953	952	382	2,860
Public Sewerage (Others)	547	918	919	368	2,752
Flood Mitigation	102	430	624	685	1,841
Hydropower	675	2,048	847	6	3,576
Total	5,192	12,974	9,613	4,274	32,053

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget,
assuming that the original budget can provide the
capacity necessary up to 1985 for public water
supply and irrigation.

Table 61 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE FOR
WATER DEMAND AND SUPPLY BALANCE ALTERNATIVES

Unit: M\$10⁶

Category	4MP	5MP	6MP	7MP	Total
<u>Alternative B1</u>					
Source Development	1,521	5,863	763	396	8,543
Irrigation	198	1,349	799	575	2,921
Public Water Supply	2,119	3,979	4,248	1,706	12,052
Inland Fishery	23	87	371	330	811
Total	3,861	11,278	6,181	3,007	24,327
<u>Alternative B2</u>					
Source Development	1,213	3,491	601	330	5,635
Irrigation	198	1,349	799	575	2,921
Public Water Supply	2,119	3,979	4,248	1,706	12,052
Inland Fishery	23	87	371	330	811
Total	3,553	8,906	6,019	2,941	21,419
<u>Alternative B3</u>					
Source Development	487	1,793	115	162	2,557
Irrigation	198	1,349	799	575	2,921
Public Water Supply	2,119	3,979	4,248	1,706	12,052
Inland Fishery	23	87	371	330	811
Total	2,827	7,208	5,533	2,773	18,341

Table 62 ESTIMATED PUBLIC DEVELOPMENT
EXPENDITURE FOR WATER POLLUTION
ABATEMENT ALTERNATIVES

Unit: M\$10⁶

Alternative	4MP	5MP	6MP	7MP	Total
P1	1,173	1,051	451	181	2,854
P2	1,066	992	469	188	2,712

Table 63 ESTIMATED PUBLIC DEVELOPMENT
EXPENDITURE FOR FLOOD
MITIGATION ALTERNATIVES

Unit: M\$10⁶

Alternative	4MP	5MP	6MP	7MP	Total
F1	108	1,260	1,804	1,998	5,170
F2	102	430	624	686	1,842
F3	107	586	693	793	2,179

Table 64 ESTIMATED PUBLIC RECURRENT EXPENDITURE FOR
RECOMMENDED PLAN IN PERLIS/KEDAH/P. PINANG

Unit: M\$10⁶

		4MP	5MP	6MP	7MP	Total
Source Development		0	7	22	23	52
Irrigation	Perlis	0	1	7	8	16
	Kedah	0	2	18	43	63
	P. Pinang	0	0	1	1	2
	Sub-total	0	3	26	52	81
Inland Fishery	Perlis	0	0	1	1	2
	Kedah	0	1	5	11	17
	P. Pinang	0	0	1	2	3
	Sub-total	0	1	7	14	22
Public Water Supply	Perlis	0	3	5	8	16
	Kedah	0	18	40	59	117
	P. Pinang	0	22	41	56	119
	Sub-total	0	43	86	123	252
Public Water Supply (Pretreatment facilities)	Perlis	0	0	0	0	0
	Kedah	0	1	2	2	5
	P. Pinang	0	1	2	2	5
	Sub-total	0	2	4	4	10
Public Sewerage (Effective for river water pollution abatement)	Perlis	0	0	0	0	0
	Kedah	0	12	25	36	73
	P. Pinang	0	0	0	0	0
	Sub-total	0	12	25	36	73
Public Sewerage (Others)	Perlis	0	0	0	0	0
	Kedah	0	10	20	28	59
	P. Pinang	0	25	47	65	136
	Sub-total	0	35	67	93	195
Flood Mitigation	Perlis	0	-	11	11	22
	Kedah	0	-	14	21	35
	P. Pinang	0	-	8	16	24
	Sub-total	0	0	33	48	81
Total		0	103	270	393	766

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 65 ESTIMATED PUBLIC RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN PERAK

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	0	2	10	10	22
Irrigation	0	0	12	13	25
Inland Fishery	0	0	1	3	4
Public Water Supply	0	39	78	111	228
Public Water Supply; Pre-treatment facilities	0	1	1	1	3
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	0	47	94	134	275
Flood Mitigation	0	0	26	92	118
Total	0	89	222	364	675

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 66 ESTIMATED PUBLIC RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN SELANGOR

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	0	7	24	33	64
Irrigation	0	0	0	0	0
Inland Fishery	0	1	4	8	13
Public Water Supply	0	149	313	454	916
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	149	295	418	862
Public Sewerage (Others)	0	11	23	33	67
Flood Mitigation	0	4	35	61	100
Total	0	321	694	1007	2022

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 67

ESTIMATED PUBLIC RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN N. SEMBILAN/
MELAKA/NORTHWEST JOHOR

		Unit: M\$10 ⁶				
		4MP	5MP	6MP	7MP	Total
Source Development	^{/1}	0	6	27	33	66
Irrigation	N. Sembilan	0	0	2	2	4
	Melaka	0	1	2	3	6
	N.W. Johor	0	0	2	3	5
	Sub-total	0	1	6	8	15
Inland Fishery	N. Sembilan	0	0	1	5	6
	Melaka	0	0	0	0	0
	N.W. Johor	0	0	0	1	1
	Sub-total	0	0	1	6	7
Public Water Supply	N. Sembilan	0	13	26	38	77
	Melaka	0	8	16	24	48
	N.W. Johor	0	8	16	24	48
	Sub-total	0	29	58	86	173
Public Water Supply (Pretreatment facilities)	N. Sembilan	0	3	5	6	14
	Melaka	0	5	7	10	22
	N.W. Johor	0	3	5	7	15
	Sub-total	0	11	17	23	51
Public Sewerage (Effective for river water pollution abatement)	N. Sembilan	0	9	18	26	53
	Melaka	0	0	0	0	0
	N.W. Johor	0	3	6	9	18
	Sub-total	0	12	24	35	71
Public Sewerage (Others)	N. Sembilan	0	15	30	43	88
	Melaka	0	8	16	23	47
	N.W. Johor	0	0	0	0	0
	Sub-total	0	23	46	66	135
Flood Mitigation	N. Sembilan	0	0	3	9	12
	Melaka	0	2	3	11	16
	N.W. Johor	0	0	0	0	0
	Sub-total	0	2	6	20	28
Total		0	84	185	277	546

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

^{/1}: Including the expenditures for the States of N. Sembilan and Melaka and northwest Johor

Table 68 ESTIMATED ANNUAL RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN JOHOR

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	0	2	7	8	17
Irrigation	0	1	8	11	20
Inland Fishery	0	0	3	7	10
Public Water Supply	0	43	92	134	269
Public Water Supply; Pre-treatment facilities	0	10	13	14	37
Public Sewerage (Effective for river water pollution abatement)	0	18	37	53	108
Public Sewerage (Others)	0	21	42	60	123
Flood Mitigation	0	23	49	78	150
Total	0	118	251	365	734

- Remarks; (1): In 1980 end constant price
 (2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.
 (3): Source development expenditures include a part of expenditure of the Melaka/Muar region source development plan allocated to the State of Johor.

Table 69 ESTIMATED ANNUAL RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN PAHANG

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	0	1	2	2	5
Irrigation	0	2	25	33	60
Inland Fishery	0	1	4	9	14
Public Water Supply	0	34	75	110	219
Public Water Supply; Pre-treatment facilities	0	3	6	9	18
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	0	16	32	45	93
Flood Mitigation	0	56	73	100	229
Total	0	113	217	308	638

- Remarks; (1): In 1980 end constant price
 (2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 70 ESTIMATED ANNUAL RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN TRENGGANU

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	-	-	-	-	-
Irrigation	0	2	6	7	15
Inland Fishery	0	0	0	0	0
Public Water Supply	0	17	40	61	118
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	0	13	26	36	75
Flood Mitigation	0	2	22	49	73
Total	0	34	94	153	281

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 71 ESTIMATED ANNUAL RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN KELANTAN

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	0	3	5	5	13
Irrigation	0	5	35	55	95
Inland Fishery	0	0	3	8	11
Public Water Supply	0	21	53	82	156
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	3	7	9	19
Public Sewerage (Others)	0	18	36	53	107
Flood Mitigation	0	9	12	56	77
Total	0	59	151	268	478

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 72 ESTIMATED PUBLIC RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	0	27	77	112	234
Irrigation	0	14	116	176	306
Inland Fishery	0	3	23	54	80
Public Water Supply	0	367	780	1,138	2,285
Public Water Supply; Pre-treatment facilities	0	127	159	166	452
Public Sewerage (Effective for river water pollution abatement)	0	191	382	542	1,115
Public Sewerage (Others)	0	184	366	520	1,070
Flood Mitigation	0	96	255	504	855
Hydropower	0	18	69	129	176
Total	0	1,027	2,227	3,341	6,573

Remarks; (1): In 1980 end constant price

(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 73

PRINCIPAL FEATURES AND INVESTMENT COST FOR
DAMS AND BARRAGES BY PROJECT BY BASIN BY MP
UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Water Source Facilities	Catchment Area (km ²)	Active Storage Capacity /1 (10 ⁶ m ³)	Net Supply Capacity /1 (10 ⁶ m ³ /y)	Investment Cost (M\$10 ⁶)				Total
					4MP	5MP	6MP	7MP	
(The State of Perlis, Kedah and Pulau Pinang)									
1.	Timah-Tasoh dam	150	6	20	-	14.0	-	-	14
3.	Ahning dam	120	27	73	30.6	20.4	-	-	51
3.	Badak-Temin dam	114	19	59	12.6	8.4	-	-	21
3.	Sari dam	61	14	38	-	6.9	16.1	-	23
	(Sub-total)	(295)	(60)	(170)	(43.2)	(35.7)	(16.1)	-	(95)
5.	Naok-Reman dams	-	-	350	73.8	49.2	-	-	123
10.	Rui dam	215	145	140	44.7	402.3	-	-	447
2.	Ulu Melaka dam	7	2	5	1.2	10.8	-	-	12
2.	Ayer Tawar dam	11	2	6	13.1	117.9	-	-	131
	(Sub-total)	(18)	(4)	(11)	(14.3)	(128.7)	-	-	(143)
(The Kerian and Kuran river basins)									
8.	Kerian dam	112	7	22	3.0	27.0	-	-	30
(Kinta Valley)									
10.	Kinta (B) dam	155	20	28	13.3	119.7	-	-	133
(Kerang Valley)									
13.	Selangor dam	201	270	182	50.4	453.6	-	-	504
13.	Batang Kali dam	49	72	45	7.6	68.4	-	-	76
	(Sub-total)	(250)	(342)	(227)	(58.0)	(522.0)	-	-	(580)
15.	Batu dam	50	-	39	89.0	-	-	-	89
15.	Gombak dam	87	28	60	-	16.8	11.2	-	28
	(Sub-total)	(137)	(28)	(99)	(89.0)	(16.8)	(11.2)	-	(117)
16.	Semenyih dam	54	-	44	80.0	-	-	-	80
30.	Kenaboi dam	118	136	83	-	-	237.0	-	237
(Sepang river basin)									
30.	Teriang dam	60	70	36	16.6	149.4	-	-	166
(Linggi river basin)									
18.	Terip dam	23	27	26	1.3	11.7	-	-	13
(Melaka, Kesang and Muar river basins)									
21.	Palong dam	316	140	107	2.7	24.3	-	-	27
(Johor Bahru and Singapor area)									
24.	Semangar dam	160	137	123	5.4	48.6	-	-	54
24.	Linggiu dam	237	203	182	2.5	22.5	-	-	25
24.	Pengeli dam	143	65	84	3.0	27.0	-	-	30
	(Sub-total)	(540)	(405)	(389)	(10.9)	(98.1)	-	-	(109)
25.	Sedili dam	227	84	110	-	12.0	-	-	12
(Anak Endau river basin)									
27.	Anak Endau dam	36	26	11	22.8	15.2	-	-	38
27.	Kemelai dam	44	31	30	9.0	6.0	-	-	15
	(Sub-total)	(80)	(57)	(41)	(31.8)	(21.2)	-	-	(53)
(Kuantan river basin)									
31.	Kuantan barrage	-	-	20	20.0	-	-	-	20
(Kemasin, Kelantan and Golok river basins)									
40.	Nenggiri dam	3,940	35	360	-	-	16.5	148.5	165
Total		6,690	1,566	2,283	502.6	1,632.1	280.8	148.5	2,564

Remarks; (1): In 1980 end constant price
/1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 74 PRINCIPAL FEATURES AND INVESTMENT COST FOR DIVERSION FACILITIES BY PROJECT BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Diversion Facilities	Discharge ^{/1}		Investment cost (M\$10 ⁶)				
		Capacity (m ³ /s)	Length (km)	4MP	5MP	6MP	7MP	Total
(The State of Perlis, Kedah and Pulau Pinang)								
3	Jeniang diversion (barrage & canal)	8.6	20	-	-	-	-	-
10	Rui diversion (tunnel)	8.9	6	-	-	-	-	-
(Kelang Valley)								
30	Kanaboi diversion (tunnel)	5	10	-	-	11.0	-	11
(Sepang river basin)								
30	Teriang diversion (pipe line)	1	90	47.7	429.3	-	-	477
(Melaka, Kasang and Muar river basins)								
21	Muar diversion (barrage & canal)	15	80	16.0	144.-	-	-	160
(Johor Bahru and Singapor area)								
23	Teherau diversion (barrage)	32	-	0.9	8.1	-	-	9
24	Semangar diversion (canal)	32	7	3.2	28.8	-	-	32
24	Johor diversion (barrage & canal)	24	7	2.2	19.8	-	-	22
	(Sub-total)	(56)	(14)	(70.0)	(630.0)	(11.0)	-	(54)
25	Sedilidiversion (canal & pipe line)	7	15	-	67	-	-	67
Total			235	70.0	697.0	11.0	-	778

Remarks; (1): In 1980 end constant price
 /1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 75 CAPACITY AND INVESTMENT COST FOR PUBLIC WATER SUPPLY PROJECTS IN URBAN AREA BY CITY BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (1/3)

Basin No.	Code No.	City/Town	TC/1 (10 ³ m ³ /d)	Investment cost (M\$10 ⁶)				
				4MP	5MP	6MP	7MP	Total
1	1	Kangar	16.6	5.7	8.1	7.1	2.9	23.8
3	101	Jitra	6.4	3.2	5.2	5.2	2.1	15.7
	2	Alor Setar	35.9	7.7	16.6	19.1	7.7	51.1
	102	Guar Chempedak	4.0	1.4	2.4	2.5	1.0	7.3
	103	Yen	4.6	1.4	2.8	3.1	1.3	8.6
4	3	Sungai Petani	25.6	7.0	13.4	14.5	5.8	40.7
5	104	Tikan Batu	5.5	0.9	3.1	4.2	1.7	9.9
6	4	Kulim	7.7	3.7	6.2	6.3	2.5	18.7
	5	Butterworth	50.3	17.2	26.0	24.2	9.7	77.1
	109	Kg. Pmtg. Kuching	6.5	3.1	3.8	2.8	1.1	10.8
	6	Bukit Mertajam	16.4	5.5	7.9	7.0	2.8	23.2
	110	Perai	31.7	9.6	13.4	11.7	4.7	39.4
7	8	Georgetown	30.5	10.1	15.4	14.5	5.8	45.8
	105	Air Itam	21.6	7.5	10.1	8.5	3.4	29.5
	106	Tg. Tokong	7.0	3.3	4.0	3.0	1.2	11.5
	107	Gelugor	3.6	2.0	2.8	2.5	1.0	8.3
	108	Tg. Bunga	5.0	2.3	3.0	2.3	0.9	8.5
9	112	Bagan Serai	9.4	3.3	4.7	4.2	1.7	13.9
	10	Taiping	85.3	27.6	41.8	39.0	15.6	124.0
10	11	Kuala Kangsar	8.3	2.4	3.5	3.2	1.3	10.4
	12	Sg. Siput Utara	4.7	2.0	2.9	2.5	1.0	8.4
	13	Ipah	91.5	26.5	42.7	41.7	16.7	127.6
	14	Batu Gajah	0.9	0.4	0.7	0.7	0.3	2.1
	15	Kampar	5.6	1.7	2.9	3.0	1.2	8.8
	111	Baru Mambang	0.9	0.7	1.0	0.9	0.4	3.0
	17	Telok Anson	24.1	6.0	10.0	10.0	4.0	30.0
	18	Tapah	5.1	1.1	2.0	2.1	0.9	6.1
13	21	Kuala Kuba Baru	1.4	1.1	1.3	0.9	0.4	3.7
14	114	Sg. Buloh	3.1	1.2	2.5	2.9	1.2	7.8
15	22	Klang	142.9	47.4	103.1	119.2	47.7	317.4
	23	Shah Alam	45.8	12.2	28.4	33.7	13.5	87.8
	24	Petaling Jaya	310.4	87.4	189.5	218.7	87.5	583.1
	25	W. Persekutuan	346.4	499.6	777.6	740.9	296.3	2,314.4
	116	Ampang	1.7	0.7	1.4	1.5	0.6	4.2
	117	Serdang Baru	2.4	1.8	2.2	1.7	0.7	6.4
16	26	Kajang	8.6	4.3	6.8	6.5	2.6	20.2
	115	Semenyih	1.5	0.7	1.2	1.3	0.5	3.7
17	28	Port Dickson	43.5	14.9	23.3	22.3	8.9	69.4
18	29	Seremban	37.7	18.0	29.5	29.2	11.7	88.4
19	119	Tampin	1.5	0.8	1.2	1.1	0.4	3.5
	31	Melaka	31.4	7.5	13.3	13.9	5.6	40.3
	120	Kelebang	4.3	1.1	2.6	3.0	1.2	7.9
	121	Bukit Baru	8.2	2.7	4.1	3.8	1.5	12.1

Remarks; (1): In 1980 end constant price
(2): Treated water supply by State PWDs, Waterworks Departments and Water Authorities
/1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 76: CAPACITY AND INVESTMENT COST FOR PUBLIC WATER SUPPLY PROJECTS IN URBAN AREA BY CITY BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (2/3)

Basin No.	Code No.	City/Town	TC /1 (10 ³ m ³ /d)	Investment cost (M\$10 ⁶)				
				4MP	5MP	6MP	7MP	Total
20	33	Tangkak	1.7	1.2	1.6	1.3	0.5	4.6
21	30	Kuala Pilah	2.3	0.7	1.2	1.2	0.5	3.6
	32	Segamat	20.2	8.8	14.9	15.1	6.0	44.8
	122	Labis	5.0	1.7	2.7	2.7	1.1	8.2
	125	Jementah	3.0	1.3	2.4	2.5	1.0	7.2
	34	Muar	18.2	5.9	9.6	9.4	3.8	28.7
	145	PT 9	2.4	1.2	1.5	1.2	0.5	4.4
22	35	Batu Pahat	24.8	7.8	13.5	13.9	5.6	40.8
	123	Yong Peng	7.7	1.4	2.9	3.2	1.3	8.8
23	37	Pontian Kechil	20.3	6.4	12.0	12.9	5.2	36.5
	124	Pekan Nanas	1.4	0.7	1.1	1.1	0.4	3.3
	38	Kulai	30.9	7.1	14.6	16.4	6.6	44.7
	39	Johor Bahru	140.6	45.3	93.7	105.8	42.3	287.1
	127	Senai	4.1	2.6	2.7	1.6	0.7	7.6
	129	Masai	6.8	3.8	4.9	4.0	1.6	14.3
24	126	Ulu Tiram	11.8	2.7	4.9	5.2	2.1	14.9
	40	Kota Tinggi	9.1	3.0	5.2	5.4	2.2	15.8
26	42	Mersing	11.3	3.8	6.6	6.8	2.7	19.9
27	41	Kluang	24.1	6.5	11.5	12.0	4.8	34.8
	151	PT 15	6.1	3.5	3.9	2.7	1.1	11.2
28	139	PT 3	3.2	2.1	2.1	1.2	0.5	5.9
	141	PT 5	6.7	4.7	4.9	2.9	1.2	13.7
	142	PT 6	14.9	4.7	8.6	9.1	3.6	26.0
	143	PT 7	2.6	1.3	1.6	1.2	0.5	4.6
	146	PT 10	2.3	1.6	1.6	0.8	0.3	4.3
	147	PT 11	4.4	2.0	2.9	2.7	1.1	8.7
	148	PT 12	5.9	2.2	3.4	3.2	1.3	10.1
	149	PT 13	5.2	2.1	3.4	3.4	1.4	10.3
	150	PT 14	6.5	4.3	4.5	2.7	1.1	12.6
29	140	PT 4	4.5	1.2	3.3	4.1	1.7	10.3
30	118	Bahau	1.8	1.3	1.5	1.1	0.4	4.3
	137	PT 1	7.5	3.6	4.7	3.8	1.5	13.6
	138	PT 2	5.9	3.8	4.6	3.4	1.4	13.2
	144	PT 8	8.9	6.0	6.0	3.4	1.4	16.8
	152	PT 16	5.3	4.5	4.6	2.7	1.1	12.9
	153	PT 17	4.5	1.7	2.5	2.3	0.9	7.4
	154	PT 18	2.0	0.8	1.2	1.1	0.4	3.5
	155	PT 19	5.2	4.7	4.2	1.7	0.7	11.3
	156	PT 20	16.7	13.9	11.6	4.0	1.6	31.1
	130	Mentakab	19.6	2.7	6.8	8.3	3.3	21.1

Remarks; (1): In 1980 end constant price
(2): Treated water supply by State PWDs, Waterworks Departments and Water Authorities
/1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 77 CAPACITY AND INVESTMENT COST FOR PUBLIC WATER
SUPPLY PROJECTS IN URBAN AREA BY CITY BY MP
UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (3/3)

Basin No.	Code No.	City/Town	TC/1 (10 ³ m ³ /d)	Investment cost (M\$10 ⁶)				
				4MP	5MP	6MP	7MP	Total
30	45	Temerloh	25.6	3.3	8.5	10.6	4.2	26.6
	131	Teriang	4.4	1.4	3.0	3.4	1.4	9.2
	46	Bentong	5.9	1.7	2.9	2.9	1.2	8.7
	48	Jerantut	27.9	4.9	10.1	11.4	4.6	31.0
	49	Raub	14.7	3.3	6.5	7.1	2.9	19.8
	50	Kuala Lipis	2.9	0.6	1.3	1.5	0.6	4.0
31	47	Kuantan	183.9	52.5	121.6	144.3	57.7	376.1
32	51	Chukai	15.3	3.9	7.4	8.1	3.2	22.6
34	52	Dungun	18.9	9.3	17.1	18.2	7.3	51.9
36	132	Ulu Trengganu	4.4	1.2	3.1	3.9	1.6	9.8
	53	Kuala Trengganu	144.5	47.3	98.2	111.1	44.4	301.0
39	56	Peringat	5.0	1.5	2.9	3.1	1.2	8.7
	57	Pengkai Kalong	14.0	4.4	8.7	9.6	3.9	26.6
	134	Kadok	5.0	2.3	3.4	3.1	1.3	10.1
40	135	Gua Musang	4.8	2.3	3.8	3.9	1.6	11.6
	54	Tanah Merah	11.7	2.1	4.8	5.7	2.3	14.9
	55	Kota Bharu	135.0	48.7	93.6	102.0	40.8	285.1
	58	Pasir Mas	6.1	1.8	3.4	3.8	1.5	10.5
	133	Kuala Krai	17.8	4.3	9.6	11.2	4.5	29.6
Total			2,638.7	1,246.1	2,149.7	2,198.8	880.6	6,475.2

Remarks; (1): In 1980 end constant price
(2): Treated water supply by State PWDs, Waterworks
Departments and Water Authorities
/1: Total incremental capacity of the proposed facilities
during 4MP through 7MP

Table 78 CAPACITY AND INVESTMENT COST FOR TREATED WATER SUPPLY IN RURAL AREA BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Name	TC/1 (10 ³ m ³ /d)	Investment Cost (M\$10 ⁶)				
			4MP	5MP	6MP	7MP	Total
1	Perlis	14.7	7.7	12.4	12.1	4.8	37.0
2	P. Langkawi	3.4	2.1	3.2	3.0	1.2	9.5
3	Kedah	50.9	28.5	43.4	40.6	16.3	128.8
4	Merbok & Others	8.2	5.5	7.7	6.7	2.7	22.6
5	Muda	26.2	14.9	22.7	21.2	8.5	67.3
6	Perai & Others	44.7	24.3	37.7	35.8	14.3	112.1
7	P. Pinang	26.1	14.6	22.3	21.0	8.4	66.3
8	Kerian	4.0	2.1	3.5	3.5	1.4	10.5
9	Kurau & Others	65.5	22.6	37.1	36.8	14.7	111.2
10	Perak	174.3	54.6	90.3	89.9	36.0	270.8
11	Bernam	27.9	13.8	22.9	22.8	9.1	68.6
12	Tengi & Others	3.0	1.6	2.8	3.0	1.2	8.6
13	Selangor	50.0	21.3	41.5	45.5	18.2	126.5
14	Buloh & Others	6.9	3.6	6.2	6.4	2.5	18.7
15	Kelang	71.7	31.2	59.5	64.4	25.8	180.9
16	Langat	76.8	32.1	63.4	70.0	28.0	193.5
17	Sepang & Others	7.5	4.2	6.8	6.7	2.7	20.4
18	Linggi & Others	12.4	7.2	11.0	10.3	4.1	32.6
19	Melaka & Others	27.2	16.8	23.7	20.9	8.4	69.8
20	Kesang	10.3	6.3	9.1	8.3	3.3	27.0
21	Muar & Others	52.1	29.9	49.5	49.3	19.7	148.4
22	Batu Pahat & Others	47.6	23.2	40.0	41.0	16.4	120.6
23	Pontian Kechil & Others	35.7	17.7	30.1	30.6	12.2	90.6
24	Johor & Others	29.8	13.8	25.3	26.8	10.7	76.6
25	Sedili Besar & Sedili Kechil	14.2	6.7	12.2	12.8	5.1	36.8
26	Mersing & Others	1.5	1.1	1.5	1.3	0.5	4.4
27	Endau	23.3	10.5	19.7	21.2	8.5	59.9
28	Rompin & Pontian	3.4	0.2	3.2	5.1	2.0	10.5
29	Bebar & Merchong	1.2	0	1.0	1.7	0.7	3.4
30	Pahang & Penor	66.0	26.9	54.3	60.6	24.2	166.0
31	Kuantan & Others	0.6	0.2	0.7	0.9	0.4	2.2
32	Kemaman & Others	1.2	1.1	1.3	0.9	0.4	3.7
33	Paka	0.6	0.7	0.8	0.6	0.2	2.3
34	Dungun	1.3	1.1	1.3	0.9	0.4	3.7
35	Marang & Others	0.9	0.7	1.0	0.9	0.4	3.0
36	Trengganu	7.3	3.7	6.5	6.7	2.7	19.6
37	Setiu & Others	1.2	1.1	1.3	0.9	0.4	3.7
38	Besut & Keluang	2.1	1.6	2.1	1.7	0.7	6.1
39	Kemasin & Semarak	9.6	6.1	9.0	8.3	3.3	26.7
40	Kelantan & Others	17.2	9.5	14.9	14.4	5.8	44.6
41	Colok	6.3	3.6	5.7	5.6	2.2	17.1
Total		1,034.8	474.4	808.6	821.1	328.5	2,432.6

Remarks; (1): In 1980 end constant price
(2): For the public water supply systems of State PWDs, Waterworks Departments and Water Authorities
/1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 79. CAPACITY AND INVESTMENT COST FOR UNTREATED WATER SUPPLY IN RURAL AREA BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Name	SD/1 (103 m ³ /d)	Investment Cost (M\$10 ⁶)				
			4MP	5MP	6MP	7MP	Total
1	Perlis	2.5	0.2	1.1	1.1	0.8	3.2
2	P. Langkawi	0.5	0.1	0.3	0.2	0.1	0.7
3	Kedah	8.8	1.1	5.1	2.9	2.3	11.4
4	Merbok & Others	3.4	0.2	1.1	1.4	1.1	3.8
5	Muda	6.9	0.6	3.0	2.4	2.0	8.0
6	Perai & Others	7.6	0.2	1.7	3.5	2.8	8.2
7	P. Pinang	1.8	0.1	0.4	0.9	0.7	2.1
8	Kerian	1.3	0.1	0.5	0.4	0.4	1.4
9	Kurau & Others	5.5	0.4	2.0	2.1	1.7	6.2
10	Perak	9.3	0.7	3.7	3.6	2.9	10.9
11	Bernam	1.3	0.1	0.6	0.4	0.3	1.4
12	Tengi & Others	0	0	0	0	0	0
13	Selangor	0.5	0.0	0.2	0.2	0.1	0.5
14	Buloh & Others	1.0	0.1	0.3	0.3	0.3	1.0
15	Kelang	1.4	0.1	0.6	0.4	0.3	1.4
16	Langat	1.7	0.2	0.7	0.5	0.4	1.8
17	Sepang & Others	1.0	0.1	0.5	0.2	0.2	1.0
18	Linggi & Others	2.5	0.2	0.8	1.0	0.8	2.8
19	Melaka & Others	3.0	0.3	1.3	1.1	0.9	3.6
20	Kesang	0.7	0.1	0.4	0.2	0.2	0.9
21	Muar & Others	1.5	0.3	1.4	1.3	1.0	4.0
22	Batu Pahat & Others	1.5	0.0	0.2	0.7	0.6	1.5
23	Pontian Kechil & Others	1.7	0.1	0.4	0.7	0.6	1.8
24	Johor & Others	2.8	0.1	0.6	1.2	1.0	2.9
25	Sedili Besar & Sedili Kechil	0.4	0	0.1	0.2	0.2	0.5
26	Mersing & Others	0	0	0	0	0	0
27	Endau	1.4	0.0	0.3	0.7	0.6	1.6
28	Rompin & Pontian	0.3	0	0.0	0.2	0.1	0.3
29	Bebar & Merchong	0.3	0	0.0	0.2	0.1	0.3
30	Pahang & Penor	12.3	0.7	3.9	5.4	4.3	14.3
31	Kuantan & Others	2.0	0.1	0.4	0.9	0.7	2.1
32	Kemaman & Others	0.4	0.1	0.3	0.1	0.1	0.6
33	Paka	0.3	0.1	0.3	0	0	0.4
34	Dungun	0.6	0.1	0.3	0.2	0.1	0.7
35	Marang & Others	0.3	0.1	0.3	0	0	0.4
36	Trengganu	3.1	0.2	1.1	1.4	1.0	3.7
37	Setiu & Others	0.6	0.1	0.6	0	0	0.7
38	Besut & Keluang	0.8	0.1	0.6	0.2	0.1	1.0
39	Kemasin & Semarak	5.1	0.6	2.9	1.6	1.3	6.4
40	Kelantan & Others	9.5	1.1	5.0	3.2	2.6	11.9
41	Golok	3.1	0.4	1.6	1.1	0.8	3.9
Total		108.7	9.1	44.6	42.1	33.5	129.3

Remarks; (1) In 1980 end constant price

(2) Untreated water supply under RESP

/1 Total incremental capacity in terms of source development of the proposed facilities during 4MP through 7MP

Table 80 TREATMENT CAPACITY AND INVESTMENT COST FOR PRE-TREATMENT FACILITIES BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Treatment Capacity /1 (10 ³ m ³ /day)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
3	4.2	1	1	0	0	2
5	2.6	0	1	0	0	1
6	45.0	12	8	1	0	21
10	15.0	3	2	1	1	7
16	0.7	0	0	0	0	0
18	3.4	17	13	2	1	33
19	22.8	31	42	33	13	119
20	1.3	0	1	0	0	1
21	26.2	8	15	16	6	45
22	26.7	23	22	11	4	60
28	2.3	0	1	0	0	1
30	17.1	5	3	0	0	8
31	39.5	4	5	4	2	15
Total	206.8	104	114	68	27	313

Remarks; (1): In 1980 end constant price
 /1 : Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 81 TREATMENT CAPACITY AND INVESTMENT COST FOR PRE-TREATMENT FACILITIES BY BASIN BY MP UNDER WITHOUT PROJECT CONDITION UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Treatment Capacity /1 (10 ³ m ³ /day)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
3	4.2	3	5	4	2	14
4	8.8	19	25	21	8	73
5	2.6	0	1	0	0	1
6	51.2	31	91	116	46	284
9	3.5	0	1	0	0	1
10	15.3	4	8	9	3	24
16	2.6	1	1	0	0	2
18	3.4	19	16	5	2	42
19	24.0	88	83	40	16	227
20	1.3	6	5	1	0	12
21	29.1	94	95	51	20	260
22	22.8	72	76	46	19	213
24	13.2	17	17	10	4	48
27	16.8	3	3	0	0	6
28	11.6	11	8	0	0	19
30	17.1	5	3	0	0	8
31	39.5	4	15	21	8	48
32	3.7	2	1	0	0	3
39	1.4	1	1	2	1	5
Total	272.1	380	455	326	129	1,290

Remarks; (1): In 1980 end constant price
 /1 : Total incremental capacity of the proposed facilities during 4MP through 7MP.

Table 82 AREA AND INVESTMENT COST FOR INLAND FISHERY
IN RESERVOIRS BY BASIN BY MP UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Area /1 (ha)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
1	20	0.0	0.0	5.9	11.8	17.7
2	10	0.0	0.0	23.7	11.8	35.5
3	30	0.0	11.8	17.8	17.8	47.4
5	10	0.0	5.9	5.9	5.9	17.7
8	10	0.0	0.0	11.8	5.9	17.7
10	20	0.0	0.0	23.7	11.8	35.5
13	20	0.0	0.0	23.7	11.8	35.5
15	20	0.0	5.9	17.8	11.8	35.5
16	10	0.0	5.9	11.8	5.9	23.6
18	10	0.0	0.0	11.8	5.9	17.7
21	10	0.0	0.0	11.8	5.9	17.7
24	30	0.0	0.0	35.5	17.8	53.3
25	10	0.0	0.0	5.9	11.8	17.7
27	20	0.0	11.8	11.8	11.8	35.4
30	90	0.0	5.9	41.4	59.2	106.5
40	40	0.0	11.8	17.8	29.6	59.2
Total	360	0.0	59.0	278.1	236.5	573.6

Remarks; (1): In 1980 end constant price
/1 : Total incremental area to be developed
during 4MP through 7MP

Table 83 PRINCIPAL FEATURES AND INVESTMENT COST FOR HYDROPOWER PROJECTS BY PROJECT BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Project Name	Catchment Area (km ²)	Active Storage Capacity (10 ⁶ m ³ /l)	Installed Capacity (MW)/l	Annual Energy Output (GWh)	Investment Cost (M\$10 ⁶)				
						4MP	5MP	6MP	7MP	Total
30	Tembeling (Upper)	2,850	1,730	110	440	31.0	279.0	-	-	310
30	Tekai & Penut	1,390	1,070	74	370	-	77.4	180.6	-	258
30	Telom Hilir	1,200	500	98	480	-	19.1	171.9	-	191
30	Jelai Kechil	890	560	60	300	-	-	225.0	25.0	250
30	Maran	25,000	-	130	680	-	-	258.6	172.4	431
36	Ulu Trengganu	420	600	100	360	132.6	88.4	-	-	221
40	Pergau	227	68	100	540	57.0	133.0	-	-	190
40	Lebir	2,474	2,834	120	410	-	-	568.0	-	568
40	Nenggiri	3,940	200	82	430	36.1	324.9	-	-	361
40	Galas (Dabong)	7,480	580	97	530	-	-	110.4	257.6	368
40	Kelantan barrage	12,100	-	40	275	-	-	30.0	270.0	300
Total				1,011	4,815	256.7	921.8	1,544.5	725.0	3,448

Remarks: (1): In 1980 end constant price
 /1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 84 TREATMENT CAPACITY AND INVESTMENT COST FOR PUBLIC SEWERAGE SYSTEMS AFFECTING RIVER WATER QUALITY BY CITY BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	City/Town	Treatment Capacity (10 ³ m ³ /day)	Investment Cost (M\$10 ⁶)				
			4MP	5MP	6MP	7MP	Total
4	C3 Sg. Petani	59	18	29	28	11	86
6	C4 Kulim	15	4	8	9	3	24
15	C23 Shah Alam	73	15	25	25	10	75
15	C24 Petaling Jaya	810	162	282	290	116	850
15	C25 W. Persekutuan	800	183	329	346	139	997
16	C26 Kajang/Semenyih	26	6	11	12	5	34
18	C29 Seremban	87	23	39	39	16	117
21	C32 Segamat	35	8	12	13	5	38
23	C38 Kulai/Senai	89	21	34	35	14	104
27	C41 Kluang	54	14	24	24	10	72
39	C57 Pengkal Kalong	22	5	8	9	4	26
Total		2,070	459	801	830	333	2,423

Remarks; (1): In 1980 end constant price
/1 : Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 85 TREATMENT CAPACITY AND INVESTMENT COST FOR PUBLIC SEWERAGE SYSTEMS NOT AFFECTING RIVER WATER QUALITY BY CITY BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	City/Town	Treatment Capacity (10 ³ m ³ /day)	Investment Cost (M\$10 ⁶)					Total
			4MP	5MP	6MP	7MP		
Coastal City/Town								
3	C2	Alor Setar	56	15	26	28	11	80
6	C5	Butterworth	93	24	41	41	16	122
6	C6	Bukit Mertajam	34	10	17	17	7	51
7	C8	Georgetown	35	8	9	6	3	26
9	C10	Taiping	135	29	51	53	22	155
10	C13	Ipoh	164	41	74	75	30	220
10	C17	Telok Anson	41	11	20	21	8	60
15	C22	Klang	151	28	50	53	21	152
17	C28	Port Dickson	116	25	41	42	17	125
19	C31	Melaka	55	17	28	27	11	83
23	C39	Johor Bahru	202	42	70	70	28	210
31	C47	Kuantan	166	31	48	47	19	145
36	C53	Kuala Trengganu	139	28	45	44	18	135
40	C55	Kota Bahru	134	26	43	44	17	130
Total			1,521	335	563	568	228	1,694

Remarks; (1): In 1980 end constant price
/1 : Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 86 PRINCIPAL FEATURES AND INVESTMENT COST FOR FLOOD MITIGATION PROJECTS BY PROJECT BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (1/3)

Basin No.	Basin Name	Project	Principal Features /1	Investment Cost (M\$10 ⁶)				
				4MP	5MP	6MP	7MP	Total
1	Perlis							
		Timah Tasoh dam	28.0x10 ⁶ m ³	-	4.4	-	-	4.4
		River improvement	34 km	-	17.6	-	-	17.6
5	Muda							
		River improvement	75 km	0.0	26.5	14.9	18.8	60.2
6	Perai							
		River improvement	4 km	-	-	-	3.6	3.6
7	P. Pinang							
		River improvement	2 km	-	15.0	15.0	-	30.0
9	Kurau							
		River improvement	13 km	-	18.0	-	-	18.0
10	Perak							
		Bypass floodway	50 km	-	-	100.0	150.0	250.0
		Polder	10.0 km ²	-	32.5	32.5	-	65.0
15	Kelang							
		Batu dam	4.6x10 ⁶ m ³	10.3	-	-	-	10.3
		Gombak dam	7.8x10 ⁶ m ³	12.5	-	-	-	12.5
		River improvement	36 km	-	59.1	54.6	-	113.7
18	Linggi							
		River improvement	41 km	4.8	5.3	-	5.5	15.6
19	Melaka							
		Bypass floodway	5 km	-	8.5	-	-	8.5
20	Kesang							
		River improvement	38 km	1.8	1.7	11.4	11.4	26.3
21	Muar							
		Upper Muar dam	24.4x10 ⁶ m ³	-	-	5.3	-	5.3
		River improvement	53 km	-	-	9.0	11.5	20.5
		Polder	1.3 km ²	-	-	-	4.6	4.6

Remarks; (1): In 1980 end constant price
 /1 : Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 87 PRINCIPAL FEATURES AND INVESTMENT COST FOR
FLOOD MITIGATION PROJECTS BY PROJECT BY
BASIN BY MP UNDER THE CONDITION OF LOWER
ECONOMIC GROWTH (2/3)

Basin No.	Basin Name	Project	Principal Features /1	Investment Cost (M\$10 ⁶)				
				4MP	5MP	6MP	7MP	Total
22	Batu Pahat							
		Semberong dam	25.5x10 ⁶ m ³	24.4	25.1	-	-	49.5
		Bekok dam	90.7x10 ⁶ m ³	15.6	-	-	-	15.6
		River improvement	93 km	-	9.9	35.0	25.9	70.8
		Bypass floodway	19 km	-	-	20.0	-	20.0
23	Pontian Kechil							
		River improvement	25 km	1.5	13.7	-	-	15.2
24	Johor							
		Polder	1.2 km ²	-	-	-	8.0	8.0
26	Mersing							
		River improvement	6 km	-	-	-	6.6	6.6
27	Endau							
		River improvement	11 km	-	-	5.6	-	5.6
30	Pahang							
		Telom/Jelai Kechil dam	1,740x10 ⁶ m ³	-	-	45.6	-	45.6
		Tembeling Upper dam	2,110x10 ⁶ m ³	-	36.5	-	-	36.5
		Tekai Lower dam	510x10 ⁶ m ³	-	17.0	-	-	17.0
		Polder	28.5 km ²	5.4	11.9	8.7	41.0	67.0
		Land use change	111.7 km ²	-	61.7	92.2	92.2	246.1
31	Kuantan							
		River improvement	6 km	-	-	-	34.1	34.1
32	Kemaman							
		Polder	20.0 km ²	-	9.8	-	-	9.8
36	Trengganu							
		River improvement	29 km	-	-	18.5	58.1	76.6
		Polder	8.6 km ²	-	-	2.3	-	2.3
37	Setiu							
		River improvement	9 km	1.5	6.2	-	-	7.7

Remarks; (1): In 1980 end constant price
/1 : Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 88 PRINCIPAL FEATURES AND INVESTMENT COST FOR FLOOD MITIGATION PROJECTS BY PROJECT BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (3/3)

Basin No.	Basin Name	Project	Principal Features /1	Investment Cost (M\$10 ⁶)				Total
				4MP	5MP	6MP	7MP	
38	Basut	River improvement	33 km	-	24.7	33.0	-	57.7
40	Kelantan	Dabong dam	1,300x10 ⁶ m ³	-	-	32.0	-	32.0
		Lebin dam	700x10 ⁶ m ³	-	24.0	-	-	24.0
		River improvement	65 km	16.7	-	80.0	215.3	312.0
		Polder	9.1 km ²	-	9.5	-	-	9.5
Total	Dam		11					
	River improvement		573 km					
	Bypass floodway		74 km	94.5	438.6	615.6	686.6	1,835.3
	Polder		78.7 km ²					
	Land use change		111.7 km ²					

Remarks; (1): In 1980 end constant price
 /1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 89 SERVED POPULATION AND INVESTMENT COST FOR FLOOD FORECASTING AND WARNING SYSTEMS BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Basin Name	People Relieved by F/F (10 ³)/1	Investment Cost (M\$10 ⁶)				Total
			4MP	5MP	6MP	7MP	
1	Perlis	9.2	-	0.9	-	-	0.9
5	Muda	10.3	-	1.2	-	-	1.2
7	Pinang	5.4	-	0.8	-	-	0.8
10	Perak	168.0	0.7	-	-	-	0.7
13	Selangor	4.2	-	0.5	-	-	0.5
15	Kelang	107.0	1.5	-	-	-	1.5
16	Langat	19.4	-	0.5	-	-	0.5
18	Linggi	14.4	-	0.9	-	-	0.9
19	Melaka	24.5	-	1.1	-	-	1.1
21	Muar	14.0	-	1.8	-	-	1.8
23	Sekudai	9.1	1.0	-	-	-	1.0
	Tebrau	5.7	0.5	-	-	-	0.5
24	Johor	4.4	0.8	-	-	-	0.8
30	Pahang	98.2	-	1.0	-	-	1.0
31	Kuantan	8.4	-	0.5	-	-	0.5
32	Kemaman	6.5	0.5	-	-	-	0.5
34	Dungun	2.5	0.6	-	-	-	0.6
36	Trengganu	19.9	0.4	-	-	-	0.4
38	Besut	14.7	0.2	-	-	-	0.2
39	Kemasin/Semarak	7.0	0.3	-	-	-	0.3
40	Kelantan	211.0	0.7	-	-	-	0.7
41	Golok	12.6	0.2	-	-	-	0.2
Total		776.4	7.4	9.7	-	-	17.1

Remarks; (1): In 1980 end constant price
 /1 : Total increment of the people served by proposed facilities during 4MP through 7MP

Table 90 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE IN PERLIS/
KEDAH/P. PINANG UNDER THE CONDITION OF LOWER
ECONOMIC GROWTH

Unit: M\$10⁶

		4MP	5MP	6MP	7MP	Total
Source Development		176	632	16	0	824
Irrigation	Perlis	11	79	10	15	15
	Kedah	33	220	331	326	910
	P. Pinang	0	9	1	0	10
	Sub-total	44	308	342	341	1035
Inland Fishery	Perlis	0	0	6	12	18
	Kedah	2	20	62	44	128
	P. Pinang	0	0	0	0	0
	Sub-total	2	20	68	56	146
Public Water Supply	Perlis	14	22	20	9	65
	Kedah	79	137	133	55	404
	P. Pinang	100	147	134	54	435
	Sub-total	193	306	287	118	904
Public Water Supply (Pretreatment facilities)	Perlis	0	0	0	0	0
	Kedah	7	5	1	0	13
	P. Pinang	6	5	0	0	11
	Sub-total	13	10	1	0	24
Public Sewerage (Effective for river water pollution abatement)	Perlis	0	0	0	0	0
	Kedah	22	37	37	14	110
	P. Pinang	0	0	0	0	0
	Sub-total	22	37	37	14	110
Public Sewerage (Others)	Perlis	0	0	0	0	0
	Kedah	14	23	23	9	70
	P. Pinang	43	70	69	28	209
	Sub-total	57	93	92	37	279
Flood Mitigation	Perlis	-	23	-	-	23
	Kedah	-	28	15	-	43
	P. Pinang	0	15	15	22	52
	Sub-total	0	66	30	22	118
Total		507	1472	873	588	3440

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget,
assuming that the original budget can provide the
capacity necessary up to 1985 for public water supply
and irrigation.

Table 91 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE IN PERAK
UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	16	144	0	0	160
Irrigation	0	160	14	0	174
Inland Fishery	3	3	30	18	54
Public Water Supply	157	256	248	100	761
Public Water Supply; Pre-treatment facilities	3	2	1	1	7
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	81	145	149	60	435
Flood Mitigation	1	51	133	150	335
Total	261	761	575	329	1926

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget,
assuming that the original budget can provide the
capacity necessary up to 1985.

Table 92 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE IN SELANGOR
UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	227	540	259	0	1026
Irrigation	0	0	0	0	0
Inland Fishery	3	14	51	39	107
Public Water Supply	754	1299	1327	531	3911
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	366	647	673	270	1956
Public Sewerage (Others)	28	50	53	21	152
Flood Mitigation	24	60	55	0	139
Total	1402	2610	2418	861	7291

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget,
assuming that the original budget can provide the
capacity necessary up to 1985.

Table 93 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN N. SEMBILAN/
MELAKA/NORTHWEST JOHOR UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

		Unit: M\$10 ⁶				
		4MP	5MP	6MP	7MP	Total
Source Development ^{/1}		90	753	0	0	843
Irrigation	N. Sembilan	8	13	7	0	28
	Melaka	11	19	6	0	36
	N.W. Johor	9	14	2	0	25
	Sub-total	28	46	15	0	89
Inland Fishery	N. Sembilan	3	3	29	23	58
	Melaka	0	0	0	0	0
	N.W. Johor	1	1	1	1	4
	Sub-total	4	4	30	24	62
Public Water Supply	N. Sembilan	59	98	97	39	293
	Melaka	35	69	52	21	177
	N.W. Johor	38	63	63	25	189
	Sub-total	132	230	212	85	659
Public Water Supply (Pretreatment facilities)	N. Sembilan	22	26	18	7	74
	Melaka	26	32	22	9	89
	N.W. Johor	13	16	11	4	43
	Sub-total	61	74	51	20	206
Public Sewerage (Effective for river water pollution abatement)	N. Sembilan	23	39	39	16	117
	Melaka	0	0	0	0	0
	N.W. Johor	8	12	13	5	38
	Sub-total	31	51	52	21	155
Public Sewerage (Others)	N. Sembilan	29	48	48	20	145
	Melaka	13	21	21	8	63
	N.W. Johor	0	0	0	0	0
	Sub-total	42	69	69	28	208
Flood Mitigation	N. Sembilan	0	7	14	12	33
	Melaka	5	1	17	17	40
	N.W. Johor	0	0	0	4	4
	Sub-total	5	8	31	33	77
Total		393	1235	460	211	2299

- Remarks; (1): In 1980 end constant price
 (2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985 for public water supply and irrigation.
^{/1} : Including the expenditures for the States of N. Sembilan and Melaka and northwest Johor

Table 94 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN JOHOR UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	23	288	0	0	311
Irrigation	9	97	34	0	140
Inland Fishery	3	3	58	41	105
Public Water Supply	205	356	388	155	1,104
Public Water Supply; Pre-treatment facilities	31	39	27	10	107
Public Sewerage (Effective for river water pollution abatement)	43	70	72	29	214
Public Sewerage (Others)	42	70	70	28	210
Flood Mitigation	46	52	64	44	206
Total	402	975	713	307	2,397

- Remarks; (1): In 1980 end constant price
 (2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985.
 (3): Source development expenditures include a part of expenditure of the Melaka/Muar region source development plan allocated to the State of Johor.

Table 95 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN PAHANG UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	52	21	0	0	73
Irrigation	24	308	109	59	500
Inland Fishery	4	28	53	65	150
Public Water Supply	174	315	330	133	952
Public Water Supply; Pre-treatment facilities	17	24	20	8	69
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	31	48	47	19	145
Flood Mitigation	5	129	146	167	447
Total	307	873	705	451	2,336

- Remarks; (1): In 1980 end constant price
 (2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985.

Table 96 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE
FOR RECOMMENDED PLAN IN TRENGGANU UNDER
THE CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	-	-	-	-	-
Irrigation	29	48	19	17	113
Inland Fishery	0	0	0	0	0
Public Water Supply	72	144	156	63	435
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	28	45	44	18	135
Flood Mitigation	3	41	54	58	156
Total	132	278	273	156	839

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget,
assuming that the original budget can provide the
capacity necessary up to 1985.

Table 97 ESTIMATED PUBLIC DEVELOPMENT EXPENDITURE FOR
RECOMMENDED PLAN IN KELANTAN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	0	0	17	149	166
Irrigation	73	396	268	158	895
Inland Fishery	4	15	21	33	73
Public Water Supply	88	169	176	73	506
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	5	8	9	4	26
Public Sewerage (Others)	26	43	44	17	130
Flood Mitigation	17	34	112	215	378
Total	213	665	647	649	2,174

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget,
assuming that the original budget can provide the
capacity necessary up to 1985.

Table 98

ESTIMATED PUBLIC DEVELOPMENT
EXPENDITURE FOR RECOMMENDED PLAN
UNDER THE CONDITION OF LOWER
ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	572	2,330	292	149	3,343
Irrigation	198	1,349	799	575	2,921
Inland Fishery	22	86	310	275	693
Public Water Supply	1,738	3,010	3,061	1,234	9,043
Public Water Supply; Pre-treatment facilities	125	149	100	39	413
Public Sewerage (Effective for river water pollution abatement)	459	801	830	333	2,423
Public Sewerage (Others)	335	563	568	228	1,694
Flood Mitigation	102	429	624	686	1,841
Hydropower	257	736	1,731	725	3,449
Total	3,908	9,453	8,315	4,244	25,820

Remarks; (1): In 1980 end constant price
(2): The amount shown for 4MP is the additional budget, assuming that the original budget can provide the capacity necessary up to 1985 for public water supply and irrigation.

Table 99 ESTIMATED PUBLIC RECURRENT EXPENDITURE IN PERLIS/KEDAH/
P. PINANG UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

		4MP	5MP	6MP	7MP	Total
Source Development		0	6	20	20	46
Irrigation	Perlis	0	1	7	8	16
	Kedah	0	2	18	43	63
	P. Pinang	0	0	1	1	2
	Sub-total	0	3	26	52	81
Inland Fishery	Perlis	0	0	0	1	1
	Kedah	0	1	4	10	15
	P. Pinang	0	1	4	11	16
	Sub-total	0	2	8	22	32
Public Water Supply	Perlis	0	2	4	6	12
	Kedah	0	14	27	38	79
	P. Pinang	0	16	30	42	88
	Sub-total	0	32	61	86	179
Public Water Supply (Pretreatment facilities)	Perlis	0	0	0	0	0
	Kedah	0	1	1	2	4
	P. Pinang	0	1	1	1	3
	Sub-total	0	2	2	3	7
Public Sewerage (Effective for river water pollution abatement)	Perlis	0	0	0	0	0
	Kedah	0	7	15	21	43
	P. Pinang	0	0	0	0	0
	Sub-total	0	7	15	21	43
Public Sewerage (Others)	Perlis	0	0	0	0	0
	Kedah	0	5	9	13	27
	P. Pinang	0	14	28	40	82
	Sub-total	0	19	37	53	109
Flood Mitigation	Perlis	-	-	11	11	22
	Kedah	-	-	14	21	35
	P. Pinang	-	-	8	16	24
	Sub-total	0	0	33	48	81
Total		0	71	202	305	578

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 100 ESTIMATED PUBLIC RECURRENT EXPENDITURE IN PERAK
UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	0	1	4	4	9
Irrigation	0	0	12	13	25
Inland Fishery	0	0	1	3	4
Public Water Supply	0	26	51	72	149
Public Water Supply; Pre-treatment facilities	0	0	1	1	2
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	0	28	57	82	167
Flood Mitigation	0	0	26	92	118
Total	0	55	152	267	474

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 101 ESTIMATED PUBLIC RECURRENT EXPENDITURE IN SELANGOR
UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

Sector	4MP	5MP	6MP	7MP	Total
Source Development	0	7	19	26	52
Irrigation	0	0	0	0	0
Inland Fishery	0	1	3	7	11
Public Water Supply	0	127	258	370	755
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	125	256	369	750
Public Sewerage (Others)	0	9	20	29	58
Flood Mitigation	0	4	35	61	100
Total	0	273	591	862	1726

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 102 ESTIMATED PUBLIC RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN N. SEMBILAN/
MELAKA/NORTHWEST JOHOR UNDER THE CONDITION
OF LOWER ECONOMIC GROWTH

		Unit: M\$10 ⁶				
		4MP	5MP	6MP	7MP	Total
Source Development	^{/1}	0	5	22	22	49
Irrigation	N. Sembilan	0	0	2	2	4
	Melaka	0	1	2	3	6
	N.W. Johor	0	0	2	3	5
	Sub-total	0	1	6	8	15
Inland Fishery	N. Sembilan	0	0	1	4	5
	Melaka	0	0	0	0	0
	N.W. Johor	0	0	0	1	1
	Sub-total	0	0	1	5	6
Public Water Supply	N. Sembilan	0	10	20	28	58
	Melaka	0	6	11	15	32
	N.W. Johor	0	6	12	17	35
	Sub-total	0	22	43	60	125
Public Water Supply (Pretreatment facilities)	N. Sembilan	0	3	5	7	15
	Melaka	0	4	6	9	19
	N.W. Johor	0	2	3	5	10
	Sub-total	0	9	14	21	44
Public Sewerage (Effective for river water pollution abatement)	N. Sembilan	0	8	15	22	45
	Melaka	0	0	0	0	0
	N.W. Johor	0	3	5	7	15
	Sub-total	0	11	20	29	60
Public Sewerage (Others)	N. Sembilan	0	10	20	27	57
	Melaka	0	4	8	12	24
	N.W. Johor	0	0	0	0	0
	Sub-total	0	14	28	39	81
Flood Mitigation	N. Sembilan	0	0	3	9	12
	Melaka	0	2	3	11	16
	N.W. Johor	0	0	0	0	0
	Sub-total	0	2	6	20	28
Total		0	64	140	204	408

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is to
constructed by the original budget for 4MP, is not
included.

^{/1} : Including the expenditures for the States of N.
Sembilan and Melaka and northwest Johor

Table 103 ESTIMATED ANNUAL RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN JOHOR UNDER
THE CONDITION OF LOWER ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	0	1	7	7	15
Irrigation	0	1	8	11	20
Inland Fishery	0	0	3	7	10
Public Water Supply	0	35	73	106	214
Public Water Supply; Pre-treatment facilities	0	5	8	10	23
Public Sewerage (Effective for river water pollution abatement)	0	14	29	40	83
Public Sewerage (Others)	0	14	28	40	82
Flood Mitigation	0	23	49	78	150
Total	0	93	205	299	597

- Remarks; (1): In 1980 end constant price
 (2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.
 (3): Source development expenditures include a part of expenditure of the Melaka/Muar region source development plan allocated to the State of Johor.

Table 104 ESTIMATED ANNUAL RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN IN PAHANG UNDER
THE CONDITION OF LOWER ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	0	1	2	2	5
Irrigation	0	2	25	33	60
Inland Fishery	0	1	4	11	16
Public Water Supply	0	28	59	85	172
Public Water Supply; Pre-treatment facilities	0	3	5	6	14
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	0	10	20	27	57
Flood Mitigation	0	56	73	100	229
Total	0	101	188	264	553

- Remarks; (1): In 1980 end constant price
 (2): Recurrent expenditure on the capacity, which is to be constructed by the original budget for 4MP, is not included.

Table 105 ESTIMATED ANNUAL RECURRENT EXPENDITURE FOR DEVELOPMENT
PLAN OF RECOMMENDED PLAN IN TRENGGANU UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	-	-	-	-	-
Irrigation	0	2	6	7	15
Inland Fishery	0	0	0	0	0
Public Water Supply	0	13	28	41	82
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	0	0	0	0
Public Sewerage (Others)	0	9	18	26	53
Flood Mitigation	0	2	22	49	73
Total	0	26	74	123	223

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is
to be constructed by the original budget for 4MP,
is not included.

Table 106 ESTIMATED ANNUAL RECURRENT EXPENDITURE FOR
RECOMMENDED PLAN IN KELANTAN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Source Development	0	0	0	1	1
Irrigation	0	5	35	55	95
Inland Fishery	0	0	2	5	7
Public Water Supply	0	16	33	48	97
Public Water Supply; Pre-treatment facilities	0	0	0	0	0
Public Sewerage (Effective for river water pollution abatement)	0	2	3	5	10
Public Sewerage (Others)	0	9	17	24	50
Flood Mitigation	0	9	12	56	77
Total	0	41	102	194	337

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is
to be constructed by the original budget for 4MP,
is not included.

Table 107 ESTIMATED PUBLIC RECURRENT EXPENDITURE
FOR RECOMMENDED PLAN UNDER THE CONDITION
OF LOWER ECONOMIC GROWTH

Sector	Unit: M\$10 ⁶				Total
	4MP	5MP	6MP	7MP	
Source Development		20	53	80	153
Irrigation		14	116	176	306
Inland Fishery		4	33	69	106
Public Water Supply		291	594	850	1,735
Public Water Supply; Pre-treatment facilities		112	139	146	397
Public Sewerage (Effective for river water pollution abatement)		156	318	457	931
Public Sewerage (Others)		112	225	320	657
Flood Mitigation		96	255	504	855
Hydropower		9	31	69	109
Total		814	1,764	2,671	5,249

Remarks; (1): In 1980 end constant price
(2): Recurrent expenditure on the capacity, which is
to be constructed by the original budget for 4MP,
is not included.

Table 108 INVESTMENT COST FOR PRIVATE WATER SUPPLY
BY BASIN BY MP

Unit: M\$10⁶

Basin No.	4MP	5MP	6MP	7MP	Total
1	2.7	20.9	51.1	40.9	115.6
2	-	-	-	-	-
3	10.7	82.3	196.9	157.5	447.4
4	5.4	42.3	103.0	82.4	233.1
5	1.0	7.7	17.5	14.1	40.3
6	44.6	213.9	177.7	142.2	578.4
7	22.0	104.1	80.9	64.7	271.7
8	0.0	0.2	0.4	0.4	1.0
9	19.7	113.8	174.8	139.8	448.1
10	32.2	186.4	287.3	229.8	735.7
11	0.1	0.3	0.1	0.1	0.6
12	-	-	-	-	-
13	0.3	1.5	0.6	0.4	2.8
14	0.4	2.2	3.5	2.9	9.0
15	103.1	543.2	655.4	524.3	1,826.0
16	0.4	2.5	4.0	3.2	10.1
17	19.4	100.2	112.5	90.0	322.1
18	3.5	17.9	20.2	16.2	57.8
19	14.4	80.4	114.3	91.4	300.5
20	0.0	0.2	0.6	0.4	1.2
21	8.8	48.6	65.3	52.3	175.0
22	7.5	41.0	54.7	43.8	147.0
23	26.5	146.9	204.6	164.2	542.2
24	5.2	29.1	40.7	32.6	107.6
25	0.0	0.1	0.2	0.2	0.5
26	2.1	10.8	12.7	10.2	35.8
27	7.5	40.7	53.6	42.9	144.7
28	10.5	55.7	67.9	54.3	188.4
29	0.6	3.3	5.3	4.3	13.5
30	34.6	202.1	317.1	253.7	807.5
31	12.8	82.9	159.8	127.8	383.3
32	3.5	25.7	58.0	46.4	133.6
33	-	-	-	-	-
34	2.5	17.8	39.3	31.4	91.0
35	0.0	0.0	0.0	0.0	0.0
36	11.6	86.9	201.2	161.0	460.7
37	-	-	-	-	-
38	-	-	-	-	-
39	2.3	20.7	58.4	46.6	128.0
40	19.3	159.7	411.3	329.0	919.3
41	0.3	2.7	7.3	5.9	16.2
Total	435.5	2,494.7	3,758.2	3,007.3	9,695.7

Remarks; (1): In 1980 end constant price
(2): Including domestic and manufacturing water supply
as well as processing water supply for palm oil
mills and rubber factories

Table 109 PRIVATE INVESTMENT COST FOR SEWERAGE SYSTEMS
AFFECTING RIVER WATER QUALITY BY BASIN BY MP

Basin No.	Treatment Capacity (10 ³ m ³ /d)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
4	128	7	22	30	12	71
6	27	2	5	6	3	16
15	2,013	168	391	466	186	1,211
16	35	2	5	7	3	17
18	115	8	19	24	9	60
21	47	4	10	13	5	32
23	121	4	25	30	12	71
27	330	5	11	14	6	36
39	47	3	10	14	6	33
Total	2,863	203	498	604	242	1,547

Remarks; (1): In 1980 end constant price
(2): Private investment cost comprises the private contribution to the construction cost of sewerage systems for house connection and branch sewers.

Table 110 PRIVATE INVESTMENT COST FOR SEWERAGE SYSTEMS NOT
AFFECTING RIVER WATER QUALITY BY BASIN BY MP

Basin No.	Treatment Capacity (10 ³ m ³ /d)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
3	119	4	19	27	11	61
6	202	10	26	32	13	81
7	82	0	8	14	5	27
9	246	19	45	53	22	139
10	373	18	48	60	24	150
15	180	14	37	47	19	117
17	206	24	42	43	17	126
19	112	4	12	15	6	37
23	330	24	67	83	34	208
31	288	27	70	89	36	222
36	218	20	52	66	26	104
40	333	25	80	106	42	253
Total	2,689	189	506	635	255	1,585

Remarks; (1): In 1980 end constant price
(2): Private investment cost comprises the private contribution to the construction cost of sewerage systems for house connection and branch sewers.

Table 111 PRIVATE INVESTMENT COST FOR SEWERAGE SYSTEMS
BY BASIN BY MP FOR ALTERNATIVE P1

Basin No.	Treatment Capacity (10 ³ m ³ /d)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
4	128	7	24	33	13	77
6	27	1	5	6	3	15
15	2,013	344	415	309	123	1,191
16	115	3	6	6	2	17
18	121	16	22	19	7	64
21	84	5	10	11	5	31
23	47	19	27	24	9	79
27	35	7	13	14	6	40
39	47	1	9	13	5	28
Total	2,617	403	531	435	173	1,542

Remarks; (1): In 1980 end constant price
(2): Private investment cost comprises the private contribution to the construction cost of sewerage systems for house connection and branch sewers.

Table 112 PRIVATE INVESTMENT COST FOR SEWERAGE SYSTEMS
BY BASIN BY MP FOR ALTERNATIVE P2

Basin No.	Treatment Capacity (10 ³ m ³ /d)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
4	128	4	19	27	11	61
6	19	0	3	5	2	10
15	2,013	338	413	314	125	1,190
18	115	16	22	19	7	64
23	121	19	27	24	9	79
27	42	1	5	8	3	17
39	37	0	7	11	4	22
Total	2,475	378	496	408	161	1,443

Remarks; (1): In 1980 end constant price
(2): Private investment cost comprises the private contribution to the construction cost of sewerage systems for house connection and branch sewers.

Table 113 TREATMENT CAPACITY AND INVESTMENT COST
FOR PRIVATE PURIFICATION FACILITIES
(PALM AND RUBBER) BY BASIN BY MP

Basin No.	Palm & Rubber	Treatment Capacity /1 (10 ³ m ³ /day)	Investment Cost (M\$10 ⁶)				Total
			4MP	5MP	6MP	7MP	
4	Rubber	4.8	2	2	1	1	5
6	Rubber	6.8	1	2	3	1	7
9	Palm	0.4	1	0	0	0	1
	Rubber	1.6	1	1	0	0	2
10	Palm	3.0	3	3	2	1	9
	Rubber	11.0	4	4	2	1	12
11	Palm	2.2	4	3	0	0	7
	Rubber	0.3	0	0	0	0	0
14	Palm	1.6	1	2	2	1	5
	Rubber	0.5	0	0	0	0	0
15	Palm	1.1	2	1	0	0	4
	Rubber	5.7	3	2	1	0	6
16	Palm	1.6	1	2	1	1	5
	Rubber	1.3	1	1	0	0	1
17	Palm	0.3	0	0	0	0	1
	Rubber	0.1	0	0	0	0	0
18	Palm	1.1	2	1	0	0	4
	Rubber	6.8	4	3	1	0	7
19	Rubber	6.9	4	3	1	0	8
20	Palm	0.2	0	0	0	0	1
	Rubber	1.2	1	1	0	0	1
21	Palm	2.6	3	3	2	1	8
	Rubber	8.3	5	3	1	0	9
22	Palm	2.5	1	2	3	1	8
	Rubber	1.0	0	0	0	0	1
23	Palm	1.0	1	1	1	0	3
	Rubber	1.1	0	0	0	0	1
24	Palm	5.4	6	4	1	0	11
	Rubber	2.2	1	1	0	0	2
27	Palm	3.5	4	4	2	1	11
	Rubber	0.4	0	0	0	0	1
28	Palm	1.3	3	2	0	0	4
32	Palm	2.1	4	3	0	0	7
Total		89.9	63	54	24	9	150

Remarks; (1): In 1980 end constant price
/1: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 114 TREATMENT CAPACITY AND INVESTMENT COST FOR PRIVATE PURIFICATION FACILITIES (PALM AND RUBBER) BY BASIN BY MP FOR ALTERNATIVE P1

Basin No.	Palm & Rubber	Treatment Capacity/ ₁ (10 ³ m ³ /day)	Investment Cost (M\$10 ⁶)				Total
			4MP	5MP	6MP	7MP	
4	Rubber	4.8	2	2	1	1	5
6	Rubber	6.8	1	2	3	1	7
9	Palm	0.4	1	0	0	0	1
	Rubber	1.6	1	1	0	0	2
10	Palm	3.0	3	3	2	1	9
	Rubber	11.0	4	4	2	1	12
11	Palm	2.2	4	3	0	0	7
	Rubber	0.3	0	0	0	0	0
14	Palm	1.6	1	2	2	1	5
	Rubber	0.5	0	0	0	0	0
15	Palm	1.1	2	1	0	0	4
	Rubber	5.7	3	2	1	0	6
16	Palm	1.6	1	2	1	1	5
	Rubber	1.3	1	1	0	0	1
17	Palm	0.3	0	0	0	0	1
	Rubber	0.1	0	0	0	0	0
18	Palm	1.1	2	1	0	0	4
	Rubber	6.8	4	3	1	0	7
19	Rubber	6.9	4	3	1	0	8
20	Palm	0.2	0	0	0	0	1
	Rubber	1.2	1	1	0	0	1
21	Palm	2.6	3	3	2	1	8
	Rubber	8.3	5	3	1	0	9
22	Palm	2.5	1	2	3	1	8
	Rubber	1.0	0	0	0	0	1
23	Palm	1.0	1	1	1	0	3
	Rubber	1.1	0	0	0	0	1
24	Palm	5.4	6	4	1	0	11
	Rubber	2.2	1	1	0	0	2
27	Palm	3.5	4	4	2	1	11
	Rubber	0.4	0	0	0	0	1
28	Palm	1.3	3	2	0	0	4
32	Palm	2.1	4	3	0	0	7
Total		89.9	63	54	24	9	152

Remarks; (1): In 1980 end constant price

/1 : Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 115 TREATMENT CAPACITY AND INVESTMENT COST FOR PRIVATE PURIFICATION FACILITIES (PALM AND RUBBER) BY BASIN BY MP FOR ALTERNATIVE P2

Basin No.	Palm & Rubber	Treatment Capacity (10 ³ m ³ /day)/1	Investment Cost (M\$10 ⁶)				Total
			4MP	5MP	6MP	7MP	
4	Rubber	4.8	2	2	1	1	5
6	Rubber	6.8	1	2	3	1	7
9	Palm	0.4	1	0	0	0	1
	Rubber	1.6	1	1	0	0	2
10	Palm	3.0	3	3	2	1	9
	Rubber	11.0	4	4	2	1	12
14	Palm	1.6	1	2	2	1	5
	Rubber	0.5	0	0	0	0	0
15	Palm	1.1	2	1	0	0	4
	Rubber	5.7	3	2	1	0	6
17	Palm	0.3	0	0	0	0	1
	Rubber	0.1	0	0	0	0	0
18	Palm	1.1	2	1	0	0	4
	Rubber	6.8	4	3	1	0	7
19	Rubber	6.9	4	3	1	0	8
20	Palm	0.2	0	0	0	0	1
	Rubber	1.2	1	1	0	0	1
21	Palm	2.6	3	3	2	1	8
	Rubber	8.3	5	3	1	0	9
22	Palm	2.5	1	2	3	1	8
	Rubber	1.0	0	0	0	0	1
23	Palm	1.0	1	1	1	0	3
	Rubber	1.1	0	0	0	0	1
24	Palm	5.4	6	4	1	0	11
	Rubber	2.2	1	1	0	0	2
27	Palm	3.5	4	4	2	1	11
	Rubber	0.4	0	0	0	0	1
28	Palm	1.3	3	2	0	0	4
32	Palm	2.1	4	3	0	0	7
Total		84.5	57	48	23	8	139

Remarks; (1): In 1980 end constant price
 /1 : Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 116 ESTIMATED PRIVATE INVESTMENT COST
FOR RECOMMENDED PLAN

	Unit: M\$10 ⁶				
	4MP	5MP	6MP	7MP	Total
Private Water Supply/ <u>1</u>	435	2,494	3,758	3,006	9,693
Sewerage: Affecting river water quality/ <u>2</u>	203	498	604	242	1,547
Sewerage: Not affecting river water quality/ <u>2</u>	189	506	635	255	1,585
Palm & Rubber Purification Facilities	60	55	26	10	151
Total	887	3,553	5,023	3,513	12,976

Remarks; (1): In 1980 end constant price

1: Including domestic and manufacturing water supply as well as processing water supply for palm oil mills and rubber factories

2: Private investment cost comprises the private contribution to the construction cost of sewerage systems for house connection and branch sewers.

Table 117 INVESTMENT COST FOR PRIVATE WATER SUPPLY
BY BASIN BY MP UNDER THE CONDITION OF
LOWER ECONOMIC GROWTH

Unit: M\$10⁶

Basin No.	4MP	5MP	6MP	7MP	Total
1	4.9	22.9	16.0	12.8	56.6
2	-	-	-	-	-
3	4.3	29.4	60.2	48.2	142.1
4	2.4	16.0	32.0	25.6	76.0
5	0.5	3.6	6.5	5.3	15.9
6	28.4	137.3	118.0	94.4	378.1
7	15.0	70.9	56.0	44.8	186.7
8	0.0	0.2	0.4	0.4	1.0
9	14.4	76.3	93.1	74.5	258.3
10	22.2	117.5	143.8	115.0	398.5
11	0.1	0.3	0.1	0.1	0.6
12	-	-	-	-	-
13	0.2	0.9	0.2	0.1	1.4
14	0.3	1.3	1.4	1.2	4.2
15	92.0	472.6	524.8	419.8	1,509.2
16	0.7	3.7	5.4	4.4	14.2
17	10.3	51.4	50.3	40.3	152.3
18	1.8	9.0	9.6	7.8	28.2
19	7.4	39.6	50.7	40.5	138.2
20	0.2	0.8	0.1	0.0	1.1
21	6.0	31.5	36.2	28.9	102.6
22	4.0	12.4	31.9	25.5	73.8
23	15.1	83.5	114.4	91.6	304.6
24	2.7	15.3	22.4	17.9	58.3
25	0.0	0.1	0.2	0.2	0.5
26	1.2	6.5	8.2	6.6	22.5
27	4.2	23.2	31.1	24.9	83.4
28	6.7	35.8	45.2	36.1	123.8
29	0.8	3.7	2.6	2.1	9.2
30	21.9	124.8	183.8	147.1	477.6
31	7.7	48.8	90.0	72.0	218.5
32	2.0	12.0	21.0	16.8	51.8
33	-	-	-	-	-
34	1.6	9.2	14.6	11.7	37.1
35	-	-	-	-	-
36	6.1	38.8	71.3	57.0	173.2
37	-	-	-	-	-
38	-	-	-	-	-
39	1.2	8.4	18.5	14.7	42.8
40	8.8	61.6	131.0	104.8	306.2
41	-	-	-	-	-
Total	295.1	1,569.3	1,991.0	1,593.1	5,448.5

Remarks; (1): In 1980 end constant price
(2): Including domestic and manufacturing water supply
as well as processing water supply for palm oil
mills and rubber factories

Table 118 PRIVATE INVESTMENT COST FOR SEWERAGE SYSTEMS AFFECTING RIVER WATER QUALITY BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Treatment Capacity (10 ³ m ³ /d)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
4	59	3	8	8	3	22
6	15	1	2	3	1	7
15	1,683	128	309	369	148	954
16	26	1	3	5	2	11
18	87	5	13	15	6	39
21	35	3	7	8	3	21
23	89	8	17	21	8	54
27	54	3	5	6	3	17
39	22	2	9	5	2	13
Total	2,070	154	366	440	176	1,136

Remarks; (1): In 1980 end constant price
(2): Private investment cost comprises the private contribution to the construction cost of sewerage systems for house connection and branch sewers.

Table 119 PRIVATE INVESTMENT COST FOR SEWERAGE SYSTEMS NOT AFFECTING RIVER WATER QUALITY BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Treatment Capacity (10 ³ m ³ /d)	Investment Cost (M\$10 ⁶)				Total
		4MP	5MP	6MP	7MP	
3	56	2	4	6	2	14
6	127	6	12	12	5	35
7	35	12	12	9	3	36
9	135	9	21	24	9	63
10	205	8	17	20	7	52
15	151	12	29	36	15	92
17	116	9	21	24	10	64
19	55	1	3	3	1	8
23	202	16	38	44	19	117
31	166	17	40	46	19	122
36	139	12	29	35	14	90
40	134	11	29	35	14	89
Total	1,521	115	255	294	118	782

Remarks; (1): In 1980 end constant price
(2): Private investment cost comprises the private contribution to the construction cost of sewerage systems for house connection and branch sewers.

Table 120 TREATMENT CAPACITY AND INVESTMENT COST FOR PRIVATE PURIFICATION FACILITIES (PALM AND RUBBER) BY BASIN BY MP UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Palm & Rubber	Treatment Capacity/ ¹ (10 m /day)	Investment Cost (M\$10 ⁶)				Total
			4MP	5MP	6MP	7MP	
4	Rubber	4.8	2	2	1	1	5
6	Rubber	6.8	1	2	3	1	7
9	Palm	0.4	1	0	0	0	1
	Rubber	1.6	1	1	0	0	2
10	Palm	3.0	3	3	2	1	9
	Rubber	11.0	4	4	2	1	12
11	Palm	2.2	4	3	0	0	7
	Rubber	0.3	0	0	0	0	0
14	Palm	1.6	1	2	2	1	5
	Rubber	0.5	0	0	0	0	0
15	Palm	1.1	2	1	0	0	4
	Rubber	5.7	3	2	1	0	6
16	Palm	1.6	1	2	1	1	5
	Rubber	1.3	1	1	0	0	1
17	Palm	0.3	0	0	0	0	1
	Rubber	0.1	0	0	0	0	0
18	Palm	1.1	2	1	0	0	4
	Rubber	6.8	4	3	1	0	7
19	Rubber	6.9	4	3	1	0	8
20	Palm	0.2	0	0	0	0	1
	Rubber	1.2	1	1	0	0	1
21	Palm	2.6	3	3	2	1	8
	Rubber	8.3	5	3	1	0	9
22	Palm	2.5	1	2	3	1	8
	Rubber	1.0	0	0	0	0	1
23	Palm	1.0	1	1	1	0	3
	Rubber	1.1	0	0	0	0	1
24	Palm	5.4	6	4	1	0	11
	Rubber	2.2	1	1	0	0	2
27	Palm	3.5	4	4	2	1	11
	Rubber	0.4	0	0	0	0	1
28	Palm	1.3	3	2	0	0	4
32	Palm	2.1	4	3	0	0	7
Total		89.9	63	54	24	9	152

Remarks; (1): In 1980 end constant price
¹: Total incremental capacity of the proposed facilities during 4MP through 7MP

Table 121 ESTIMATED PRIVATE INVESTMENT COST UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Unit: M\$10⁶

	4MP	5MP	6MP	7MP	Total
Private Water Supply ^{/1}	295	1,580	1,991	1,593	5,459
Sewerage: Affecting river water quality ^{/2}	154	366	440	176	1,136
Sewerage: Not affecting river water quality ^{/2}	115	255	294	118	782
Palm & Rubber Purification Facilities	60	54	24	9	147
Total	624	2,255	2,749	1,896	7,524

Remarks; (1): In 1980 end constant price

/1: Including domestic and manufacturing water supply
as well as processing water supply for palm oil
mills and rubber factories

/2: Private investment cost comprises the private
contribution to the construction cost of sewerage
systems for house connection and branch sewers.

Table 122 ESTIMATED MANPOWER REQUIREMENT FOR RECOMMENDED
WATER DEMAND AND SUPPLY BALANCE PLAN

Category	Unit: persons			
	4MP	5MP	6MP	7MP
Engineer	325	680	815	882
Technical Assistant	366	897	1,088	1,220
Technician	410	2,333	3,008	3,460
Others	518	13,161	16,897	18,946
Total Government Staff	1,619	17,071	21,808	24,508

Remarks; Manpower requirement for construction and O&M of the facilities

Table 123 ESTIMATED MANPOWER REQUIREMENT FOR WATER
DEMAND AND SUPPLY BALANCE ALTERNATIVES

Category	Unit: persons			
	4MP	5MP	6MP	7MP
<u>Alternative B1</u>				
Engineer	325	700	825	892
Technical Assistant	366	917	1,098	1,230
Technician	410	2,363	3,018	3,470
Others	518	13,211	16,937	18,986
Total Government Staff	1,619	17,191	21,878	24,578
<u>Alternative B2</u>				
Engineer	325	680	817	883
Technical Assistant	366	897	1,080	1,221
Technician	410	2,333	3,001	3,461
Others	518	13,151	16,894	18,940
Total Government Staff	1,619	17,061	21,792	24,505
<u>Alternative B3</u>				
Engineer	325	670	787	873
Technical Assistant	366	887	1,050	1,211
Technician	410	2,303	2,991	3,461
Others	518	13,111	16,844	18,910
Total Government Staff	1,619	16,971	21,672	24,455

Remarks; Manpower requirement for construction and O&M of the facilities

Table 124 ESTIMATED MANPOWER REQUIREMENT FOR RECOMMENDED
HYDROPOWER DEVELOPMENT PLAN

Category	Unit: persons			
	4MP	5MP	6MP	7MP
Engineer	0	10	17	15
Technical Assistant	0	20	34	30
Technician	0	15	23	17
Others	0	35	62	58
Total Government Staff	0	80	136	120

Remarks; Manpower requirement for construction and O&M of the facilities

Table 125 ESTIMATED MANPOWER REQUIREMENT FOR RECOMMENDED
WATER POLLUTION ABATEMENT PLAN

Category	Unit: persons			
	4MP	5MP	6MP	7MP
Engineer	29	59	77	95
Technical Assistant	29	68	96	120
Technician	29	175	349	519
Others	29	220	450	677
Total Government Staff	116	522	972	1,411

Remarks; Manpower requirement for construction and O&M of the facilities

Table 126 ESTIMATED MANPOWER REQUIREMENT FOR WATER POLLUTION ABATEMENT ALTERNATIVES

Category	Unit: persons			
	4MP	5MP	6MP	7MP
<u>Alternative P1</u>				
Engineer	20	42	39	45
Technical Assistant	20	50	50	57
Technician	20	164	207	255
Others	20	210	268	332
Total Government Staff	80	466	564	689
<u>Alternative P2</u>				
Engineer	17	37	34	41
Technical Assistant	17	45	45	52
Technician	17	150	190	238
Others	17	192	249	312
Total Government Staff	68	424	518	643

Remarks; Manpower requirement for construction and O&M of the facilities

Table 127 ESTIMATED MANPOWER REQUIREMENT FOR RECOMMENDED FLOOD MITIGATION PLAN

Category	Unit: persons			
	4MP	5MP	6MP	7MP
Engineer	26	71	114	138
Technical Assistant	47	117	179	229
Technician	69	180	261	291
Others	110	205	261	309
Total Government Staff	252	573	815	967

Remarks; Manpower requirement for construction and O&M of the facilities

Table 128

ESTIMATED MANPOWER REQUIREMENT FOR
FLOOD MITIGATION ALTERNATIVES

Unit: persons

Category	4MP	5MP	6MP	7MP
<u>Alternative F1</u>				
Engineer	29	153	209	239
Technical Assistant	53	227	321	377
Technician	72	385	498	550
Others	120	355	460	521
Total Government Staff	274	1,120	1,488	1,687
<u>Alternative F2</u>				
Engineer	26	71	114	138
Technical Assistant	47	117	179	229
Technician	69	180	261	291
Others	110	205	261	309
Total Government Staff	252	573	815	967
<u>Alternative F3</u>				
Engineer	27	98	126	154
Technical Assistant	49	160	202	258
Technician	68	249	295	345
Others	110	278	297	368
Total Government Staff	254	785	920	1,125

Remarks; Manpower requirement for construction and O&M of the facilities

Table 129

ESTIMATED MANPOWER REQUIREMENT FOR WATER
DEMAND AND SUPPLY BALANCE PLAN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Unit: persons

Category	4MP	5MP	6MP	7MP
Engineer	325	640	697	785
Technical Assistant	366	807	931	1,074
Technician	410	1,875	2,259	2,636
Others	518	10,641	13,014	14,940
Total Government Staff	1,619	13,963	16,901	19,435

Remarks; Manpower requirement for construction and O&M of the facilities

Table 130 ESTIMATED MANPOWER REQUIREMENT FOR RECOMMENDED
HYDROPOWER DEVELOPMENT PLAN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Category	Unit: persons			
	4MP	5MP	6MP	7MP
Engineer	0	8	8	16
Technical Assistant	0	16	16	32
Technician	0	12	10	21
Others	0	28	30	59
Total Government Staff	0	64	64	128

Remarks; Manpower requirement for construction and O&M of the facilities

Table 131 ESTIMATED MANPOWER REQUIREMENT FOR WATER
POLLUTION ABATEMENT UNDER THE CONDITION
OF LOWER ECONOMIC GROWTH

Category	Unit: persons			
	4MP	5MP	6MP	7MP
Engineer	27	58	67	77
Technical Assistant	27	60	76	96
Technician	27	134	251	365
Others	27	166	318	472
Total Government Staff	108	418	712	1,010

Remarks; Manpower requirement for construction and O&M of the facilities

Table 132 ESTIMATED MANPOWER REQUIREMENT FOR FLOOD MITIGATION
UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Category	Unit: persons			
	4MP	5MP	6MP	7MP
Engineer	26	71	114	138
Technical Assistant	47	117	179	229
Technician	69	180	261	291
Others	110	205	261	309
Total Government Staff	252	573	815	967

Remarks; Manpower requirement for construction and O&M of the facilities

Table 133 ESTIMATED ANNUAL EQUIVALENT OF ECONOMIC COST
FOR WATER SOURCE DEVELOPMENT BY BASIN

Basin No.	Annual Equivalents of Economic Cost (M\$10 ⁶)			
	Recommended	B1	B2	B3
(The States of Perlis, Kedah and Pulau Pinang)				
1	0.5	1.2	0.4	0.4
2	4.6	7.8	7.5	4.6
3	3.7	5.6	4.9	3.8
4	-	0.5	-	-
5	5.1	10.0	7.5	5.0
6	2.4	2.4	2.4	2.4
10	14.3	29.7	29.7	-
(Kerian and Kurau river basins)				
8	1.7	49.1	31.1	1.7
9	-	0.4	-	-
(Kinta valley)				
10	11.7	11.7	5.4	5.0
(Bernam and Tengi river basins)				
11	-	48.3	1.2	-
(Kelang valley)				
13	19.7	19.7	20.7	17.5
15	4.3	4.3	4.6	4.0
16	3.9	3.9	3.5	-
30	14.0	14.0	8.9	-
(Sepang river basin)				
30	31.2	31.2	30.0	20.6
(Linggi river basin)				
18	0.7	0.7	0.6	0.4
(Melaka, Kesang and Muar river basins)				
21	6.4	6.4	4.9	3.0
30	-	1.7	-	-
(Johor Bahru and Singapore area)				
23	0.3	0.3	0.3	0.3
24	5.2	5.5	4.1	3.9
25	3.3	3.3	3.3	2.4
(Anak Endau river basin)				
27	2.0	3.9	2.4	2.0
(Kuantan river basin)				
31	0.9	0.9	0.9	0.9
(Kemasin, Kelantan and Golok river basins)				
40	6.2	3.6	2.9	2.4
(Golok plain)				
41	1.2	-	-	-
Total	143.3	266.1	177.2	80.3

Table 134 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR D&I WATER SUPPLY BY BASIN

Basin No.	Annual Equivalents (M\$10 ⁶)				
	Recommended	Benefit B1	B2	B3	Cost
1	7.5	7.6	7.5	7.5	7.4
2	0.8	1.0	1.0	0.8	0.5
3	30.2	30.7	30.6	30.2	29.4
4	12.4	12.5	12.4	12.4	12.4
5	7.2	8.2	7.7	7.2	6.2
6	39.5	39.5	39.5	39.5	39.0
7	21.0	21.0	21.0	21.0	21.0
8	7.9	22.0	16.6	7.9	7.4
9	34.2	34.3	34.2	34.2	34.2
10	68.6	68.6	61.8	60.6	55.8
11	3.9	3.9	3.9	3.9	3.9
12	4.0	4.0	4.0	4.0	4.0
13	24.9	24.9	26.9	22.5	3.2
14	1.7	1.7	1.7	1.7	1.7
15	278.0	278.0	277.8	276.9	272.4
16	10.2	10.2	10.2	6.4	6.4
17	18.1	18.1	18.1	18.1	18.1
18	11.7	11.7	11.6	11.2	10.7
19	19.7	19.7	19.7	19.7	19.7
20	1.8	1.8	1.8	1.8	1.8
21	21.4	21.3	20.8	19.9	18.9
22	14.0	14.0	14.0	14.0	14.0
23	47.6	47.6	47.6	47.6	47.3
24	15.9	15.9	14.1	13.9	8.2
25	6.0	6.0	6.0	4.6	1.0
26	2.7	2.7	2.7	2.7	2.7
27	10.1	10.1	10.1	10.1	10.1
28	12.8	12.8	12.8	12.8	12.8
29	0.9	0.9	0.9	0.9	0.9
30	98.8	100.1	92.0	71.8	49.1
31	34.8	34.8	34.8	34.8	33.8
32	6.7	6.7	6.7	6.7	6.7
33	0.0	0.0	0.0	0.0	0.0
34	6.5	6.5	6.5	6.5	6.5
35	0.4	0.4	0.4	0.4	0.4
36	34.4	34.4	34.4	34.4	34.4
37	0.2	0.2	0.2	0.2	0.2
38	0.3	0.3	0.3	0.3	0.3
39	9.5	9.5	9.5	9.5	9.5
40	59.5	59.3	58.9	58.8	58.4
41	0.8	0.8	0.8	0.8	0.8
Total	986.6	1,004.7	981.5	938.2	871.2

Table 135 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
BENEFIT AND COST FOR MAJOR IRRIGATION
SCHEMES BY SCHEME BY BASIN

Scheme	Basin No.	Annual Equivalents (M\$10 ⁶)	
		Benefit	Cost
Muda II	1 & 3	59.5	20.2
Krian/Sg. Manik	8, 9 & 10	23.8	4.6
Trans Perak IV	10	17.6	6.8
Tg. Kerang	11 & 12	20.9	4.6
Sawah Endau	27	10.3	4.4
Rompin Endau	27 & 28	20.3	7.7
Trans Pahang	30	10.4	5.5
Besut	38	0.7	0.2
Kemasin Semerak	39	10.3	6.0
North Kelantan	40	6.9	2.6
KADA II	40	21.2	7.8
Total		201.9	70.4

Table 136 ESTIMATED ANNUAL EQUIVALENTS FOR ECONOMIC BENEFIT AND COST FOR MINOR IRRIGATION SCHEMES BY BASIN

Basin No.	Name	Annual Equivalents (M\$10 ⁶)	
		Benefit	Cost
1	Perlis	6.0	4.6
2	Pulan Langkawi	0.3	0.4
3	Kedah	7.3	6.9
4	Merbok	0.7	0.5
5	Muda	6.0	5.9
6	Perai	0.2	0.3
7	Pulan Pinang	0.6	0.1
8	Kerian	2.2	1.0
9	Kurau	0.4	0.1
10	Perak	1.5	0.5
16	Langat	0.1	0.0
18	Linggi	0.6	0.3
19	Melaka	2.7	1.5
20	Kesang	0.4	0.3
21	Muar	3.9	1.3
28	Rompin	0.1	0.1
29	Bebar	0.7	0.5
30	Pahang	10.1	6.1
31	Kuantan	0.3	0.3
32	Kemaman	0.0	0.0
34	Dungun	1.6	1.1
35	Merang	1.7	1.1
36	Trengganu	2.3	2.0
37	Seti	1.3	1.1
38	Besut	0.5	0.4
39	Kemasin	4.0	3.2
40	Kelantan	8.4	4.9
41	Golok	17.0	13.3
Total		80.9	57.8

Table 137 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
BENEFIT AND COST FOR INLAND FISHERY IN
CONSTRUCTED PONDS BY STATE

State	Annual Equivalents (M\$10 ⁶)	
	Cost	Benefit
Perlis	0.1	0.1
Kedah	0.4	0.4
P. Pinang	0.1	0.2
Perak	0.6	0.7
Selangor	0.4	0.5
N. Sembilan	0.6	0.7
Melaka	0.1	0.2
Johor	0.6	0.7
Pahang	0.7	0.9
Trengganu	0.6	0.7
Kelantan	0.6	0.7
Total	4.8	5.8

Table 138 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
 BENEFIT AND COST FOR INLAND FISHERY IN
 RESERVOIRS BY BASIN

Basin No.	Annual Equivalents (M\$10 ⁶)	
	Cost	Benefit
1	1.4	1.3
2	0.7	0.7
3	2.6	2.5
5	1.3	1.3
6	1.0	0.9
8	0.7	0.7
10	1.4	1.3
13	1.4	1.3
15	1.6	1.5
16	1.0	0.9
18	0.7	0.7
21	0.4	0.4
24	2.1	2.0
25	0.7	0.7
27	1.6	1.5
30	6.0	5.8
36	0.8	0.7
40	3.3	3.1
41	0.7	0.7
Total	29.4	28.0

Table 139 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR INLAND FISHERY IN RESERVOIRS BY BASIN FOR ALTERNATIVE B1

Basin No.	Annual Equivalents (M\$10 ⁶)	
	Cost	Benefit
1	2.0	1.9
2	1.4	1.3
3	2.7	2.6
4	0.7	0.7
5	5.0	4.8
6	1.0	0.9
8	1.4	1.3
9	0.4	0.4
10	1.5	1.4
11	1.4	1.3
13	1.4	1.3
15	1.6	1.5
16	1.0	0.9
18	0.7	0.7
21	0.4	0.4
24	2.1	2.0
25	0.7	0.7
27	1.6	1.5
30	3.0	2.9
40	0.3	0.3
Total	30.3	28.8

Table 140 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR INLAND FISHERY IN RESERVOIRS BY BASIN FOR ALTERNATIVE B2

Basin No.	Annual Equivalents (M\$10 ⁶)	
	Cost	Benefit
1	1.3	1.3
2	0.7	0.7
3	2.7	2.6
5	2.8	2.7
6	1.0	0.9
8	0.7	0.7
10	1.5	1.4
13	1.3	1.3
15	1.5	1.4
16	1.0	0.9
18	0.7	0.7
24	1.4	1.3
25	0.7	0.7
27	1.6	1.5
30	1.9	1.8
40	0.3	0.3
Peninsular Total	21.1	20.2

Table 141 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
 BENEFIT AND COST FOR INLAND FISHERY IN
 RESERVOIRS BY BASIN FOR ALTERNATIVE B3

Basin No.	Annual Equivalents (M\$10 ⁶)	
	Cost	Benefit
1	1.4	1.3
2	0.7	0.7
3	2.6	2.5
5	1.4	1.4
6	1.0	0.9
8	0.7	0.7
10	0.7	0.7
13	1.1	1.0
15	1.3	1.2
18	0.7	0.7
24	1.4	1.3
25	0.7	0.7
27	1.6	1.5
30	0.7	0.7
40	0.3	0.3
Peninsular Total	16.3	15.6

Table 142 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT FOR RESERVOIR RECREATION BY BASIN FOR RECOMMENDED PLAN AND ALTERNATIVES

	Annual Equivalents (M\$106)			
	Recommended	B1	B2	B3
1	0.2	0.2	0.2	0.2
2	0.6	1.2	0.6	0.6
3	2.3	2.4	2.4	2.3
5	1.2	2.6	2.5	1.3
6	0.9	0.9	0.9	0.9
8	0.6	1.2	0.6	0.6
10	1.8	2.0	2.0	0.9
11	-	6.9	2.3	-
13	4.5	4.5	4.3	3.5
15	1.9	1.9	1.7	1.0
18	0.3	0.3	0.3	0.3
21	0.5	0.5	0.3	0.3
24	3.9	3.9	2.6	2.6
25	1.4	1.4	1.4	1.4
27	1.7	1.7	1.7	1.7
30	6.3	3.1	1.9	0.7
36	0.4	-	-	-
40	2.3	0.3	0.3	0.3
Total	30.8	35.0	26.0	18.6

Table 143 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR HYDROPOWER PROJECTS BY BASIN

Basin No.	Project Name	Installed Capacity (MW)	Annual Equivalents of Economic Benefit and Cost (M\$10 ⁶)	
			Benefit	Cost
30	Tembeling (Upper)	110	39.4	11.6
30	Tekai & Penut	74	26.9	8.2
30	Telom Hilir	98	32.5	5.7
30	Jelai Kechil	60	18.7	6.9
30	Maran	130	38.9	11.0
30	Jelai	10	1.7	1.4
30	Tarum 1	5	0.7	1.1
36	Ulu Trengganu	100	33.2	8.3
40	Pergau	100	45.0	7.1
40	Lebir	120	30.5	16.9
40	Nenggiri	82	36.1	13.5
40	Garas (Dabong)	97	27.8	8.6
40	Kelantan barrage	40	12.8	6.6
Total		1,026	344.1	106.9

Table 144 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR RECOMMENDED WATER POLLUTION ABATEMENT PLAN BY BASIN

Basin No.	City/Town	Annual Equivalents (M\$10 ⁶)						Sub-total
		Economic Benefit			Economic Cost			
		Sew- erage	Saving in Pre- treatment	Sub- total	Sew- erage	Palm and Rubber Purifi- cation	Pre- treatment	
3		0	2	2	0	0	2	2
4	C3 Sungai Petani	2			8			
	Sub-total	2	6	8	8	0	0	8
6	C4 Kulim	4			2			
	Sub-total	4	12	16	2	0	1	3
9		0	0	0	0	0	0	0
10		0	2	2	0	1	0	1
11		0	0	0	0	0	0	0
14		0	0	0	0	0	0	0
15	C23 Shah Alam	2			4			
	C24 Petaling Jaya	23			49			
	C25 W. Persekutuan	28			56			
	Sub-total	53	0	53	109	1	0	110
16	C26 Kajang/Semenyih	1			2			
	Sub-total	1	0	1	2	0	0	2
17		0	0	0	0	0	0	0
18	C29 Seremban	2			7			
	Sub-total	2	3	5	7	1	2	10
19		0	15	15	0	0	5	5
20		0	1	1	0	0	0	0
21	C23 Segamat	1			2			
	Sub-total	1	15	16	2	1	2	5
22		0	12	12	0	0	5	5
23	C38 Kulai/Senai	2			7			
	Sub-total	2	0	2	7	0	0	7
24		0	2	2	0	1	0	1
27	C41 Kluang	2			5			
	Sub-total	2	0	2	5	1		6
28		0	1	1	0	0	0	0
30		0	1	1	0	0	1	1
31		0	2	2	0	0	2	2
32		0	0	0	0	0	0	0
39	C57 Pengkal Kalong	1			2			
	Sub-total	1	1	2	2	0	0	2
Total		68	75	143	144	6	20	170

Table 145 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
 BENEFIT AND COST FOR PUBLIC SEWERAGE SYSTEMS
 NOT AFFECTING RIVER WATER QUALITY BY BASIN

Basin No.	City/Town	Annual Equivalents (M\$10 ⁶)	
		Economic Benefit	Economic Cost
3	C2 Alor Setar	2	7
6	C5 Butterworth	3	9
	C6 Bukit Mertajam	1	4
	Sub-total	4	13
7	C8 Georgetown	6	6
9	C10 Taiping	4	13
10	C13 Ipoh	5	18
	C17 Telok Anson	1	5
	Sub-total	6	23
15	C22 Klang	4	9
17	C28 Port Dickson	5	10
19	C31 Melaka	2	7
23	C39 Johor Bahru	7	16
31	C47 Kuantan	6	12
36	C53 Kuala Trengganu	4	10
40	C55 Kota Bharu	4	14
	Total	54	140

Table 146

ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
BENEFIT AND COST FOR WATER POLLUTION
ABATEMENT PLAN AFFECTING RIVER WATER
QUALITY BY BASIN FOR ALTERNATIVE P1

Basin No.	City/Town	Annual Equivalents (M\$10 ⁶)						
		Economic Benefit			Economic Cost			
		Sew- erage	Saving in Pre- treatment	Sub- total	Sew- erage	Palm and Rubber Puri- fication	Pre- treatment	Sub- total
3		0	2	2	0	0	1	1
4	C3 Sungai Petani	2			8			
	Sub-total	2	6	8	8	0	0	8
6	C4 Kulim	4			2			
	Sub-total	4	12	16	2	0	1	3
9		0	0	0	0	0	0	0
10		0	2	2	0	1	2	3
11		0	0	0	0	0	0	0
14		0	0	0	0	0	0	0
15	C23 Shah Alam	3			5			
	C24 Petaling Jaya	34			59			
	C25 W. Persekutuan	39			70			
	Sub-total	76	115	191	134	1	31	166
16	C26 Kajang/Semenyih	1			2			
	Sub-total	1	0	1	2	0	0	2
17		0	0	0	0	0	0	0
18	C29 Seremban	3			9			
	Sub-total	3	3	6	9	1	2	12
19		0	15	15	0	0	5	5
20		0	1	1	0	0	0	0
21	C23 Segamat	1			3			
	Sub-total	1	15	16	3	2	2	7
22		0	12	12	0	0	5	5
23	C38 Kulai/Senai	3			8			
	Sub-total	3	23	26	8	0	2	10
24		0	2	2	0	1	0	1
27	C41 Kluang	2			5			
	Sub-total	2	1	3	5	1	0	6
28		0	1	1	0	0	0	0
30		0	1	1	0	0	1	1
31		0	2	2	0	0	2	2
32		0	0	0	0	0	0	0
39	C57 Pengkal Kalong	0			2			
	Sub-total	0	1	1	2	0	0	2
Total		92	215	307	173	8	56	237

Table 147 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR WATER POLLUTION ABATEMENT PLAN AFFECTING RIVER WATER QUALITY BY BASIN FOR ALTERNATIVE P2

Basin No.	City/Town	Annual Equivalents (M\$10 ⁶)						
		Economic Benefit			Economic Cost			
		Sew- erage	Saving in Pre- treatment	Sub- total	Sew- erage	Palm and Rubber Puri- fication	Pre- treatment	Sub- total
3		0	2	2	0	0	1	1
4	C3 Sungai Petani	1			8			
	Sub-total	1	6	7	8	0	0	8
6	C4 Kulim	0						
	Sub-total	0	12	12	1	0	2	3
9		0	0	0	0	0	0	0
10		0	2	2	0	0	2	2
14						0		0
15	C23 Shah Alam	3			5			
	C24 Petaling Jaya	34			59			
	C25 W. Persekutuan	38			69			
	Sub-total	75	115	190	133	1	31	165
16			0	0			0	0
17						0		0
18	C29 Seremban	3			9			
	Sub-total	3	3	6	9	1	2	12
19		0	15	15	0	0	6	6
20		0	1	1	0	0	0	0
21		0	15	15	0	1	4	5
22		0	12	12	0	0	5	5
23	C38 Kulai/Senai	3			8			
	Sub-total	3	23	26	8	0	2	10
24	C41 Kluang	1			2			
	Sub-total	1	0	1	2	1	0	3
28		0	1	1	0	0	0	0
30		0	1	1	0	0	1	1
31		0	2	2	0	0	2	2
32		0	0	0	0	0		0
39	C57 Pengkal Kalong	0			2			
	Sub-total	0	1	1	2	0	0	2
Total		83	215	298	162	6	59	227

Table 148 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
BENEFIT AND COST AND EIRR FOR FLOOD
MITIGATION PROJECTS BY BASIN

Basin No.	Basin Name	Annual Equivalents (M\$10 ⁶)		EIRR (%)
		Benefit	Cost	
1	Perlis	1.5	0.9	11.0
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	2.9	1.9	12.7
6	Perai	0.2	0.1	17.2
7	P. Pinang	1.0	1.1	7.5
8	Kurian	-	-	-
9	Kurau	0.2	0.8	0.6
10	Perak	9.5	8.2	9.1
11	Bernam	-	-	-
12	Tengi	-	-	-
13	Selangor	-	-	-
14	Buloh	-	-	-
15	Kelang	3.2	5.3	5.0
16	Langat	-	-	-
17	Sepang	-	-	-
18	Linggi	1.3	0.6	13.5
19	Melaka	1.2	0.3	24.6
20	Kesang	0.3	0.7	3.0
21	Muar	1.4	0.7	13.6
22	Batu Pahat	1.7	6.1	2.3
23	Pontian Kechil	1.2	0.7	12.7
24	Johor	0.2	0.2	9.2
25	Sedili Besar	-	-	-
26	Mersing	0.4	0.1	19.6
27	Endau	1.0	0.2	26.1
28	Rompin	-	-	-
29	Bebar	-	-	-
30	Pahang	8.7	12.6	5.0
31	Kuantan	0.5	0.7	6.0
32	Kemaman	0.4	0.4	8.1
33	Paka	-	-	-
34	Dungun	-	-	-
35	Marang	-	-	-
36	Trengganu	1.8	1.8	8.1
37	Setiu	0.1	0.4	0.5
38	Besut	2.4	2.0	9.3
39	Kemasin	-	-	-
40	Kelantan	18.4	9.6	12.4
41	Golok	-	-	-
Total		59.5	55.4	

Table 149 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST AND EIRR FOR FLOOD MITIGATION PROJECTS BY BASIN FOR ALTERNATIVE F1

Basin No.	Basin Name	Annual Equivalents (M\$10 ⁶)		EIRR (%)
		Benefit	Cost	
1	Perlis	1.7	1.1	10.8
2	P. Langkawi	-	-	-
3	Kedah	0.5	0.6	6.5
4	Merbok	-	-	-
5	Muda	3.5	3.5	7.8
6	Perai	0.2	0.1	17.2
7	P. Pinang	1.0	1.1	7.5
8	Kurian	-	-	-
9	Kurau	0.4	1.0	3.9
10	Perak	10.6	16.5	5.2
11	Bernam	0.1	0.1	6.0
12	Tengi	-	-	-
13	Selangor	0.0	0.5	NA
14	Buloh	0.1	0.4	2.2
15	Kelang	2.7	5.0	4.9
16	Langat	1.3	2.7	3.5
17	Sepang	-	-	-
18	Linggi	1.6	1.8	6.9
19	Melaka	1.7	0.9	14.3
20	Kesang	0.6	1.0	5.1
21	Muar	3.1	14.0	0.3
22	Batu Pahat	1.9	6.3	2.5
23	Pontian Kechil	1.3	0.8	12.8
24	Johor	0.8	1.5	4.4
25	Sedili Besar	-	-	-
26	Mersing	0.5	0.2	18.0
27	Endau	1.2	0.5	16.8
28	Rompin	-	-	-
29	Bebar	-	-	-
30	Pahang	10.2	54.6	NA
31	Kuantan	2.3	2.4	7.6
32	Kemaman	0.6	1.8	1.3
33	Paka	0.0	0.4	NA
34	Dungun	0.2	2.6	NA
35	Marang	-	-	-
36	Trengganu	3.4	8.2	2.9
37	Setiu	0.2	0.7	0.3
38	Besut	2.8	3.7	6.1
39	Kemasin	14.9	3.7	26.1
40	Kelantan	18.5	9.7	12.4
41	Golok	2.2	2.8	6.5
Total		90.1	150.2	

Table 150 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST AND EIRR FOR FLOOD MITIGATION PROJECTS BY BASIN FOR ALTERNATIVE F2

Basin No.	Basin Name	Annual Equivalents (M\$10 ⁶)		EIRR (%)
		Benefit	Cost	
1	Perlis	1.5	0.9	11.0
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	2.9	1.9	12.7
6	Perai	0.2	0.1	17.2
7	P. Pinang	1.0	1.1	7.5
8	Kurian	-	-	-
9	Kurau	0.2	0.8	0.6
10	Perak	9.5	8.2	9.1
11 - 14	Bernaung	-	-	-
15	Kelang	3.2	5.3	5.0
16	Langat	-	-	-
17	Sepang	-	-	-
18	Linggi	1.3	0.6	13.5
19	Melaka	1.2	0.3	24.6
20	Kesang	0.3	0.7	3.0
21	Muar	1.4	0.7	13.6
22	Batu Pahat	1.7	6.1	2.3
23	Pontian Kechil	1.9	0.7	12.7
24	Johor	0.2	0.2	9.2
25	Sedili Besar	-	-	-
26	Mersing	0.4	0.1	19.6
27	Endau	1.0	0.2	26.1
28 - 29	Rompint	-	-	-
30	Pahang	8.7	12.6	5.0
31	Kuantan	0.5	0.7	6.0
32	Kemaman	0.4	0.4	8.1
33 - 35	Paka	-	-	-
36	Trengganu	1.8	1.8	8.1
37	Setiu	0.1	0.4	0.5
38	Besut	2.4	2.0	9.3
39	Kemasin	-	-	-
40	Kelantan	18.4	9.6	12.4
41	Golok	-	-	-
	Total	60.2	55.4	

Table 151 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC
BENEFIT AND COST AND EIRR FOR FLOOD
MITIGATION PROJECTS BY BASIN FOR
ALTERNATIVE F3

Basin No.	Basin Name	Annual Equivalents (M\$10 ⁶)		EIRR (%)
		Benefit	Cost	
1	Perlis	1.7	1.1	10.8
2	P. Langkawi	-	-	-
3	Kedah	0.5	0.2	15.8
4	Merbok	-	-	-
5	Muda	2.9	2.0	12.5
6	Perai	0.2	0.1	17.2
7	P. Pinang	0.8	0.7	8.4
8	Kurian	-	-	-
9	Kurau	0.2	0.8	0.6
10	Perak	9.5	8.2	9.1
11	Bernam	0.1	0.1	6.0
12 - 13	Selangor+	-	-	-
14	Buloh	0.1	0.4	2.2
15	Kelang	2.7	5.0	4.9
16	Langat	1.3	2.7	3.5
17	Sepang	-	-	-
18	Linggi	1.6	1.8	6.9
19	Melaka	1.7	0.9	14.2
20	Kesang	0.6	1.0	5.1
21	Muar	1.4	0.7	13.1
22	Batu Pahat	1.9	6.3	2.5
23	Pontian Kechil	1.3	0.8	12.8
24	Johor	0.2	0.2	9.2
25	Sedili Besar	-	-	-
26	Mersing	0.5	0.2	18.0
27	Endau	1.2	0.5	16.8
28 - 29	Rompint+	-	-	-
30	Pahang	8.7	12.6	5.0
31	Kuantan	0.5	0.7	6.0
32	Kemaman	0.5	0.4	8.4
33 - 35	Paka+	-	-	-
36	Trengganu	1.6	0.9	12.8
37	Setiu	-	-	-
38	Besut	2.8	3.7	6.1
39	Kemasin	12.0	3.7	18.2
40	Kelantan	18.4	9.7	12.3
41	Golok	1.0	0.8	8.7
	Total	75.9	66.2	

Table 152 ESTIMATED ANNUAL EQUIVALENT OF ECONOMIC COST
FOR WATER SOURCE DEVELOPMENT BY BASIN UNDER
THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Annual Equivalent of Economic Cost (M\$10 ⁶)
(The States of Perlis, Kedah and Pulau Pinang)	
1	0.4
2	4.6
3	3.2
4	-
5	4.6
6	-
10	14.3
(Kerian and Kurau river basins)	
8	1.0
9	-
10	4.3
(Bernam and Tenggi river basins)	
11	-
(Kelang valley)	
13	18.5
15	4.6
16	3.5
30	5.0
30	20.6
(Sepang river basin)	
18	0.4
(Linggi river basin)	
(Melaka, Kesang and Muar river basins)	
21	6.0
30	-
(Johor Bahru and Singapore area)	
23	0.3
24	5.2
25	2.4
(Anak Endau river basin)	
27	2.0
(Kuantan river basin)	
31	0.9
(Kemasin, Kelantan and Golok river basins)	
40	2.4
(Golok plain)	
41	-
Total	104.2

Table 153 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT
AND COST FOR D&I WATER SUPPLY BY BASIN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Annual Equivalents (M\$10 ⁶)	
	Benefit	Cost
1	5.2	5.1
2	5.1	4.8
3	15.5	14.8
4	5.5	5.5
5	5.4	4.5
6	27.1	27.1
7	14.8	14.8
8	6.2	5.9
9	20.5	20.5
10	38.3	35.1
11	3.1	3.1
12	0.4	0.4
13	25.9	5.5
14	1.3	1.3
15	210.2	205.6
16	13.5	9.7
17	9.6	9.6
18	7.3	6.5
19	11.0	11.0
20	1.5	1.5
21	16.9	14.5
22	10.2	10.2
23	31.2	30.9
24	14.1	6.7
25	5.1	1.6
26	1.9	1.9
27	7.5	7.5
28	9.2	9.2
29	0.9	0.9
30	64.3	34.9
31	23.6	22.6
32	2.9	2.9
33	1.5	1.5
34	3.7	3.7
35	0.2	0.2
36	19.7	19.7
37	0.3	0.3
38	0.4	0.4
39	5.1	5.1
40	28.0	27.6
41	0.1	0.1
Total	674.2	594.7

Table 154 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR INLAND FISHERY IN RESERVOIRS BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Annual Equivalents (M\$10 ⁶)	
	Cost	Benefit
1	0.6	0.6
2	1.4	1.3
3	2.1	2.0
5	0.8	0.8
8	0.7	0.7
10	1.4	1.3
13	1.4	1.3
15	1.5	1.4
16	1.0	0.9
18	0.7	0.7
21	0.7	0.7
24	2.1	2.0
25	0.6	0.6
27	1.6	1.5
30	4.7	4.6
40	2.6	2.5
Total	23.9	22.9

Table 155 ESTIMATED ANNUAL EQUIVALENT OF ECONOMIC
 BENEFIT OF RESERVOIR RECREATION BY BASIN
 UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Annual Equivalent (M\$10 ⁶)
1	2.0
2	7.3
3	22.5
5	8.6
8	7.3
10	22.4
13	54.2
15	20.1
18	3.9
21	3.9
24	47.2
25	15.9
27	20.6
30	61.3
40	27.9
Total	325.1

Table 156 ESTIMATED ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR HYDROPOWER PROJECTS BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Project Name	Installed Capacity (MW)	Annual Equivalents of Economic Benefit and Cost (M\$106)	
			Benefit	Cost
30	Tembeling (Upper)	110	33.8	9.9
30	Tekai & Penut	74	19.8	6.1
30	Telom Hilir	98	23.9	4.2
30	Jelai Kechil	60	12.7	4.7
30	Maran	130	26.5	7.5
36	Ulu Trengganu	100	33.2	8.3
40	Pergau	100	41.7	6.6
40	Lebir	120	20.7	11.5
40	Nenggiri	82	30.9	11.6
40	Galas (Dabong)	97	18.9	5.9
40	Kelantan barrage	40	8.7	4.4
Total		1,011	270.8	80.7

Table 157

ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST
FOR WATER POLLUTION ABATEMENT AFFECTING RIVER
WATER QUALITY BY BASIN UNDER THE CONDITION OF
LOWER ECONOMIC GROWTH

Basin No.	City/Town	Annual Equivalents (M\$10 ⁶)						
		Economic Benefit			Economic Cost			
		Sew- erage	Saving in pre- treatment	Sub- total	Sew- erage	Palm and Rubber Purifi- cation	Pre- treatment	Sub- total
3		0	1	1	0	0	1	1
4	C3 Sungai Petani	1			4			
	Sub-total	1	3	4	4	0	0	4
6	C4 Kulim	0			1			
	Sub-total	0	11	11	1	0	1	2
9		0	0	0	0	0	0	0
10			1	1		1	0	1
11		0	0	0	0	0	0	0
14		0	0	0	0	0	0	0
15	C23 Shah Alam	2			4			
	C24 Petaling Jaya	17			42			
	C25 W. Persekutuan	20			49			
	Sub-total	39	0	39	95	1	0	96
16	C26 Kajang/Semenyih	1			2			
	Sub-total	1	0	1	2	0	0	2
17		0	0	0	0	0	0	0
18	C29 Seremban	2			6			
	Sub-total	2	2	4	6	1	2	9
19		0	12	12	0	0	5	5
20		0	1	1	0	0	0	0
21	C32 Segamat	1			2			
	Sub-total	1	13	14	2	1	2	5
22		0	10	10	0	0	3	3
23	C38 Kulai/Senai	2			5			
	Sub-total	2	0	2	5	0	0	5
24		0	2	2	0	1	0	1
27	C41 Kluang	1			4			
	Sub-total	1	0	1	4	1	0	5
28		0	1	1	0	0	0	0
30		0	0	0	0	0	0	0
31		0	2	2	0	0	1	1
32		0	0	0	0	0	0	0
39	C57 Penkal Kalong	0			1			
	Sub-total	0	0	0	1	0	0	1
Total		47	59	106	120	6	15	141

Table 158 ANNUAL EQUIVALENTS OF ECONOMIC BENEFIT AND COST FOR PUBLIC SEWERAGE SYSTEMS NOT AFFECTING RIVER WATER QUALITY BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	City/Town	Annual Equivalents (M\$10 ⁶)	
		Economic Benefit	Economic Cost
3	C2 Alor Setar	10	48
6	C5 Butterworth	25	75
	C6 Bukit Mertajam	9	32
	Sub-total	34	107
7	C8 Georgetown	57	18
9	C10 Taiping	24	94
10	C13 Ipoh	30	134
	C17 Telok Anson	6	36
	Sub-total	36	170
15	C22 Klang	39	92
16	C28 Port Dickson	23	77
19	C31 Melaka	12	51
23	C39 Johor Bahru	43	129
31	C47 Kuantan	41	90
36	C53 Kuala Trengganu	26	83
40	C55 Kota Bharu	20	80
	Total	365	1,039

Table 159 ESTIMATED ANNUAL EQUIVALENT OF ECONOMIC BENEFIT AND COST AND EIRR FOR FLOOD MITIGATION PROJECTS BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Basin Name	Annual Equivalents (M\$10 ⁶)		EIRR (%)
		Benefit	Cost	
1	Perlis	0.9	0.9	7.4
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	2.1	1.9	9.1
6	Perai	0.1	0.1	12.8
7	P. Pinang	0.7	1.1	4.8
8	Kurian	-	-	-
9	Kurau	0.1	0.8	NA
10	Perak	7.4	8.2	7.1
11	Bernam	-	-	-
12	Tengi	-	-	-
13	Selangor	-	-	-
14	Buloh	-	-	-
15	Kelang	2.2	5.3	2.6
16	Langat	-	-	-
17	Sepang	-	-	-
18	Linggi	0.8	0.6	9.7
19	Melaka	0.7	0.3	18.7
20	Kesang	0.2	0.7	0.5
21	Muar	1.2	0.7	14.7
22	Batu Pahat	1.2	6.1	NA
23	Pontian Kechil	0.8	0.7	8.8
24	Johor	0.2	0.2	8.0
25	Sedili Besar	-	-	-
26	Mersing	0.2	0.1	12.9
27	Endau	0.7	0.2	25.0
28	Rompin	-	-	-
29	Bebar	-	-	-
30	Pahang	3.3	12.6	0.4
31	Kuantan	0.3	0.7	2.3
32	Kemaman	0.4	0.4	7.8
33	Paka	-	-	-
34	Dungun	-	-	-
35	Marang	-	-	-
36	Trengganu	1.3	1.8	5.1
37	Setiu	0.1	0.4	NA
38	Besut	1.9	2.0	7.3
39	Kemasin	-	-	-
40	Kelantan	10.4	9.6	8.5
41	Golok	-	-	-
	Total	37.2	55.4	

Table 160

SAFE SUPPLY PERIOD AND SAFE RIVER MAINTENANCE
FLOW PERIOD WITH RECOMMENDED STRUCTURAL MEASURES
AND WITHOUT STRUCTURAL MEASURES IN 1990

Unit: days

Basin No.	Basin Name	Safe Supply Period		Safe Maintenance Flow Period	
		With Structure	Without Structure	With Structure	Without Structure
1	Perlis	309	230	290	205
2	Langkawi	351	285	316	265
3	Kedah	333	133	317	138
4	Merbok	365	290	365	275
5	Muda	362	270	285	200
6	Perai	365	184	365	184
7	Pinang	365	164	365	154
9	Kurau	294	184	267	164
10	Perak (Kinta)	365	332	365	307
11	Bernam	365	156	280	136
12	Tengi	365	365	365	273
13	Selangor	365	339	365	261
15	Kelang	365	194	365	189
16	Langat	365	299	365	245
17	Sepang	365	194	365	184
18	Linggi	365	248	365	192
19	Melaka	365	102	365	92
20	Kesang	365	212	365	212
21	Muar	365	143	365	132
23	Pontian Kechil	365	152	365	152
24	Johor	365	152	365	152
31	Kuantan	365	365	365	359
39	Kemasin	359	310	310	247
40	Kelantan	359	269	310	243

Table 161

SAFE SUPPLY PERIOD AND SAFE RIVER MAINTENANCE
FLOW PERIOD WITH RECOMMENDED STRUCTURAL MEASURES
AND WITHOUT STRUCTURAL MEASURES IN 2000

Unit: days

Basin No.	Basin Name	Safe Supply Period		Safe Maintenance Flow Period	
		With Structure	Without Structure	With Structure	Without Structure
1	Perlis	305	195	284	174
2	Langkawi	351	285	316	265
3	Kedah	333	133	317	133
4	Merbok	365	275	365	200
5	Muda	346	225	279	195
6	Perai	365	179	365	169
7	Pinang	365	148	365	143
9	Kurau	294	169	267	164
10	Perak (Kinta)	365	332	365	307
11	Bernam	365	156	279	131
12	Tengi	365	280	365	270
13	Selangor	365	300	365	260
15	Kelang	365	159	365	143
16	Langat	365	299	365	245
17	Selangor	365	143	365	133
18	Linggi	365	239	365	187
19	Melaka	365	87	365	72
20	Kesang	365	212	365	207
21	Muar	365	132	365	132
23	Pontian Kechil	365	152	365	147
24	Johor	365	147	365	132
31	Kuantan	365	340	365	319
39	Kemasin	344	310	300	258
40	Kelantan	344	269	300	238

Table 162 SAFE SUPPLY PERIOD AND SAFE RIVER MAINTENANCE
FLOW PERIOD WITH ALTERNATIVE STRUCTURAL MEASURES
AND WITHOUT STRUCTURAL MEASURES IN 1990

Unit: days

Basin No.	Basin Name	Safe Supply Period				Safe Maintenance Flow Period			
		B1	B2	B3	Without Structure	B1	B2	B3	Without Structure
1	Perlis	365	357	309	230	365	338	290	205
2	Plau Langkawi	365	365	351	285	365	350	316	265
3	Kedah	365	365	333	133	365	352	317	138
4	Merbok	365	365	354	290	365	360	326	275
5	Muda	365	365	362	270	365	344	285	200
6	Peral	365	350	340	184	365	337	284	184
7	Pulau Pinang	365	365	336	164	365	357	303	154
9	Kurau	365	357	294	184	365	330	267	164
10	Perak	365	365	365	332	365	365	337	307
11	Bernam	365	320	290	156	365	310	280	136
12	Tengi	365	320	290	365	365	310	280	273
13	Selangor	365	365	326	339	365	357	276	261
15	Kelang	365	365	326	194	365	357	276	189
16	Langat	365	365	326	299	365	375	276	245
17	Sepang	365	365	322	194	365	356	275	184
18	Linggi	365	365	344	248	365	355	247	192
19	Melaka	365	365	288	102	365	353	244	92
20	Kesang	365	304	256	212	365	272	224	212
21	Muar	365	304	256	143	365	272	224	132
23	Pontian Kechil	365	370	253	152	365	238	218	152
24	Johor	365	269	250	152	365	239	220	152
31	Kuantan	365	365	365	365	365	363	360	359
39	Kemasin	365	365	363	310	365	315	310	247
40	Kelantan	365	365	363	269	365	315	310	243

Table 163 SAFE SUPPLY PERIOD AND SAFE RIVER MAINTENANCE
FLOW PERIOD WITH ALTERNATIVE STRUCTURAL MEASURES
AND WITHOUT STRUCTURAL MEASURES IN 2000

Unit: days

Basin No.	Basin Name	Safe Supply Period				Safe Maintenance Flow Period			
		B1	B2	B3	Without Structure	B1	B2	B3	Without Structure
1	Perlis	365	350	305	195	365	330	284	172
2	Plau Langkawi	365	365	351	285	365	350	316	265
3	Kedah	365	365	333	133	365	353	317	133
4	Merbok	365	365	344	275	365	360	295	200
5	Muda	365	365	346	225	365	343	279	195
6	Perai	365	311	340	179	365	294	284	169
7	Pulau Pinang	365	365	326	148	365	357	300	143
9	Kurau	365	357	294	169	365	330	267	164
10	Perak	365	365	365	332	365	365	337	307
11	Bernam	365	310	294	156	365	300	279	131
12	Tengi	365	310	294	280	365	300	279	270
13	Selangor	365	365	321	300	365	357	273	260
15	Kelang	365	365	321	159	365	357	273	143
16	Langat	365	365	321	299	365	357	273	245
17	Sepang	365	365	314	143	365	356	275	133
18	Linggi	365	365	342	239	365	355	246	187
19	Melaka	365	365	276	87	365	353	238	72
20	Kesang	365	302	252	212	365	271	220	207
21	Muar	365	302	252	132	365	271	220	132
23	Pontian Kechil	365	270	250	152	365	238	218	147
24	Johor	365	268	248	147	365	239	218	132
31	Kuantan	365	365	360	340	365	342	321	319
39	Kemasin	365	361	344	310	365	303	300	258
40	Kelantan	365	361	344	269	365	303	300	238

Table 164 SURFACE AREA OF RESERVOIR CREATED
BY SOURCE FACILITIES IN 1990 AND
2000 BY PROJECT BY BASIN

Unit: km²

Basin No.	Project	Surface Area	
		1990	2000
1	Timah-Tasoh dam	11	11
2	Aver Tawar dam	0.3	0.3
	Ulu Melaka dam	0.3	0.3
3	Ahning dam	10	10
	Sari dam	0	3
	Badak-Temin dam	4	4
	Drian dam	0	3
5	Naok-Reman dams	20	20
	Beris dam	0	4
6	Mengkuang Phase I & II	2	2
8	Kerian dam	1	1
10	Kinta (B) dam	2	2
	Rui dam	6	6
13	Selangor dam	6	6
	Batan Kali dam	1	1
15	Gombak dam	0	3
18	Terip dam	4	4
21	Muar dam	0	1
	Palong dam	6	6
24	Semangor dam	22	22
	Pengeli dam	11	11
	Linggiu dam	30	30
25	Sedidi	30	30
27	Anak Endau dam	1	1
	Kemelai dam	3	3
30	Kenaboi dam	0	3
	Perting dam	0	1
	Teriang dam	7	7
	Kongkoi dam	0	2
	Gelami dam	0	2
39	Nenggiri dam	200	200
Total		377.6	399.6

Table 165 SURFACE AREA OF RESERVOIR CREATED BY SOURCE FACILITIES IN 1990 AND 2000 BY PROJECT BY BASIN FOR ALTERNATIVE B1 (1/2)

Unit: km²

Basin No.	Project	Surface Area	
		1990	2000
1	Arau dam	4	4
	Timah-Tasoh dam	0	11
2	Aver Tawar dam	0.5	0.5
	Nylor dam	0.1	0.1
	Ulu Melaka dam	0.4	0.4
3	Ahning dam	14	14
	Sari dam	0	2
	Badak-Temin dam	3	3
	Drian dam	0	2
4	4-A dam	0.7	0.7
5	Naok-Reman dams	20	20
	Beris dam	11	11
	Tawar-Muda dam	7	7
	Legong dam	3	3
	Weng dam	4	4
	Charock Teber dam	4	4
	Chiak dam	0	3
6	Mengkuang Phase I & II	2	2
8	Kerian dam	3	3
	Sira dam	2	2
9	9-A(2) dam	0	1
10	Kinta (B) dam	2	2
	Rui dam	10	10
11	Geling dam	1	1
	Bil dam	0.2	0.2
	Sungkai dam	3	3
13	Selangor dam	6	6
	Batan Kali dam	1	1
15	Gombak dam	0	3
18	Terip dam	4	4
21	Muar dam	0	1
	Palong dam	6	6
24	Semangor dam	22	22
	Pengeli dam	11	11
	Linggiu dam	30	30
25	Sedidi	30	30

Table 166 SURFACE AREA OF RESERVOIR CREATED BY
SOURCE FACILITIES IN 1990 AND 2000 BY
PROJECT BY BASIN FOR ALTERNATIVE B1 (2/2)

Unit: km²

Basin No.	Project	Surface Area	
		1990	2000
27	Anak Endau dam	4	4
	Kemelai dam	6	6
30	Kenaboi dam	0	3
	Perting dam	0	1
	Teriang dam	7	7
	Kongkoi dam	0	2
	Bera dam	48	48
	Gelami dam	0	2
39	Nenggiri dam	0	200
Total		269.9	500.9

Table 167 SURFACE AREA OF RESERVOIR CREATED BY
SOURCE FACILITIES IN 1990 AND 2000 BY
PROJECT BY BASIN FOR ALTERNATIVE B2

Unit: km²

Basin No.	Project	Surface Area	
		1990	2000
1	Timah-Tasoh dam	0	11
2	Aver Tawar dam	0.5	0.5
	Ulu Melaka dam	0.4	0.4
3	Ahning dam	10	10
	Sari dam	0	4
	Badak-Temin dam	6	6
	Drian dam	0	4
5	Naok-Reman dams	20	20
	Beris dam	5	5
	Tawar-Muda dam	7	7
	Legong dam	0	3
6	Mengkuang Phase I & II	2	2
8	Kerian dam	3	3
10	Kinta (B) dam	1	1
	Rui dam	10	10
11	Geling dam	0.5	0.5
13	Selangor dam	7	7
	Batan Kali dam	0	1
15	Gombak dam	0	3
18	Terip dam	4	4
21	Palong dam	4	4
24	Semangor dam	22	22
	Linggiu dam	30	30
25	Sedidi	30	30
27	Anak Endau dam	2	2
	Kemelai dam	4	4
30	Kenaboi dam	0	3
	Perting dam	0	1
	Teriang dam	7	7
	Gelami dam	0	2
39	Nenghiri dam	0	182
Total		171.4	389.4

Table 168 SURFACE AREA OF RESERVOIR CREATED BY
SOURCE FACILITIES IN 1990 AND 2000 BY
PROJECT BY BASIN FOR ALTERNATIVE B3

Unit: km²

Basin No.	Project	Surface Area	
		1990	2000
1	Timah-Tasoh dam	11	11
2	Aver Tawar dam	0.3	0.3
	Ulu Melaka dam	0.3	0.3
3	Ahning dam	10	10
	Sari dam	0	3
	Badak-Temin dam	4	4
	Drian dam	0	3
5	Naok-Reman dams	20	20
	Beris dam	0	2
6	Mengkuang Phase I & II	2	2
8	Kerian dam	1	1
10	Kinta (B) dam	1	1
13	Selangor dam	6	6
	Batan Kali dam	0	1
15	Gombak dam	0	2
18	Terip dam	3	3
21	Palong dam	4	4
24	Semangor dam	22	22
	Linggiu dam	30	30
25	Sedidi	22	22
27	Anak Endau dam	1	1
	Kemelai dam	3	3
30	Teriang dam	4	4
39	Nenggiri dam	0	182
Total		144.6	334.6

Table 169 SURFACE AREA OF RESERVOIR CREATED
IN 1990 AND 2000 BY HYDROPOWER
FACILITIES BY BASIN

Basin No.	Project	Surface Area (km ²)	
		1990	2000
30	Tembeling (Upper)	250	250
30	Tekai & Penut	68	68
30	Telom Hilir	-	28
30	Jelai Kechil	-	70
30	Maran	-	197
30	Jelai	-	88
30	Terum 1	-	18
36	Ulu Trengganu	46	46
40	Pergau	4	4
40	Lebir	-	247
40	Nenggiri	49	49
40	Galas (Dabong)	-	105
40	Kelantan Barrage	-	-
Total		417	1,170

Table 170 LENGTH OF RIVER STRETCH WHERE BOD CONCENTRATION IS NOT MORE THAN 5 PPM IN 2000 COMPARED WITH WITHOUT PROJECT CONDITION BY BASIN

Basin No.	Basin Name	Studied Length (km)	Length of River Stretch /1 (km)
1	Perlis	12	2/2
3	Kedah	55	45/45
4	Merbok	24	10/0
5	Muda	85	85/85
6	Perai	33	33/4
8	Kerian	40	40/40
9	Kurau	65	49/44
10	Perak	270	270/200
11	Bernam	135	135/127
12	Tengi	15	15/15
13	Selangor	84	84/84
14	Buloh	33	0/0
15	Kelang	85	10/5
16	Langat	130	130/76
17	Sepang	15	4/0
18	Linggi	45	0/0
19	Melaka	40	9/0
20	Kesang	33	3/0
21	Muar	190	118/0
22	Batu Pahat	85	45/0
23	Sekudai	38	12/0
24	Johor	103	103/14
25	Sedili Besar	70	70/70
26	Mersing	14	14/14
27	Endau	128	121/13
28	Pompri	185	185/30
29	Bebar	52	51/51
30	Pahang	400	400/400
31	Kuantan	19	19/19
32	Kemaman	35	35/17
33	Paka	22	22/22
34	Dungun	50	50/50
35	Marang	30	30/30
36	Trengganu	80	80/80
37	Setiu	15	15/15
38	Besut	35	35/35
39	Kemasin	40	23/0
40	Kelantan	165	165/165
Total		2,955	2,517/1,752

Remarks; /1: (Length of river stretch with project) / (Length of river stretch without project)

Table 171 LENGTH OF RIVER STRETCH WHERE BOD CONCENTRATION IS NOT MORE THAN 5 PPM IN 2000 COMPARED WITH WITHOUT PROJECT CONDITION BY BASIN FOR ALTERNATIVE P1

Basin No.	Basin Name	Studied Length (km)	Length of River Stretch /1 (km)
1	Perlis	12	2/2
3	Kedah	55	45/45
4	Merbok	24	10/0
5	Muda	85	85/85
6	Perai	33	33/4
8	Kerian	40	40/40
9	Kurau	65	49/44
10	Perak	270	200/200
11	Bernam	135	135/127
12	Tengi	15	15/15
13	Selangor	84	84/84
14	Buloh	33	0/0
15	Kelang	85	10/5
16	Langat	130	130/76
17	Sepang	15	4/0
18	Linggi	45	0/0
19	Melaka	40	9/0
20	Kesang	33	3/0
21	Muar	190	118/0
22	Batu Pahat	85	45/0
23	Sekudai	38	12/0
24	Johor	103	103/14
25	Sedili Besar	70	70/70
26	Mersing	14	14/14
27	Endau	128	121/13
28	Pompir	185	185/30
29	Bebar	52	51/51
30	Pahang	400	400/400
31	Kuantan	19	19/19
32	Kemaman	35	35/17
33	Paka	22	22/22
34	Dungun	50	50/50
35	Marang	30	30/30
36	Trengganu	80	80/80
37	Setiu	15	15/15
38	Besut	35	35/35
39	Kemasin	40	23/0
40	Kelantan	165	165/165
Total		2,955	2,447/1,752

Remarks; /1: (Length of river stretch with project) / (Length of river stretch without project)

Table 172 LENGTH OF RIVER STRETCH WHERE BOD CONCENTRATION IS NOT MORE THAN 5 PPM IN 2000 COMPARED WITH WITHOUT PROJECT CONDITION BY BASIN FOR ALTERNATIVE P2

Basin No.	Basin Name	Studied Length (km)	Length of River Stretch /1 (km)
1	Perlis	12	2/2
3	Kedah	55	45/45
4	Merbok	24	10/0
5	Muda	85	85/85
6	Perai	33	9/4
8	Kerian	40	40/40
9	Kurau	65	49/44
10	Perak	270	270/200
11	Bernam	135	127/127
12	Tengi	15	15/15
13	Selangor	84	84/84
14	Buloh	33	0/0
15	Kelang	85	10/5
16	Langat	130	76/76
17	Sepang	15	4/0
18	Linggi	45	0/0
19	Melaka	40	9/0
20	Kesang	33	3/0
21	Muar	190	118/0
22	Batu Pahat	85	45/0
23	Sekudai	38	12/0
24	Johor	103	103/14
25	Sedili Besar	70	70/70
26	Mersing	14	14/14
27	Endau	128	107/13
28	Pompir	185	30/30
29	Bebar	52	51/51
30	Pahang	400	400/400
31	Kuantan	19	19/19
32	Kemaman	35	17/17
33	Paka	22	22/22
34	Dungun	50	50/50
35	Marang	30	30/30
36	Trengganu	80	80/80
37	Setiu	15	15/15
38	Besut	35	35/35
39	Kemasin	40	15/0
40	Kelantan	165	165/165
Total		2,955	2,236/1,752

Remarks; /1: (Length of river stretch with project)/
(Length of river stretch without project)

Table 273 BENEFICIAL EFFECTS OF FLOOD MITIGATION
PROJECTS IN 1990 BY BASIN

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	34	25	37
2-4	P. Langkawi†	-	-	-
5	Muda	48	43	88
6	Perai	-	-	-
7	P. Pinang	1	6	1
8	Kurian	-	-	-
9	Kurau	13	3	25
10	Perak	-	23	5
11-14	Bernam†	-	-	-
15	Kelang	20	126	29
16-17	Langat†	-	-	-
18	Linggi	27	41	30
19	Melaka	-	-	-
20	Kesang	7.5	2	10
21	Muar	-	-	-
22	Batu Pahat	24	5	42
23	Pontian Kechil	25	19	8
24-29	Johor†	-	-	-
30	Pahang	-	35	20
31	Kuantan	-	-	-
32	Kemaman	-	14	20
33-36	Paka†	-	-	-
37	Setiu	9	2	6
38	Besut	-	-	-
39	Kemasin	-	50	62
40	Kelantan	5	40	50
41	Golok	-	-	-
	Total	213.5	434	433

Table 174 BENEFICIAL EFFECTS OF FLOOD MITIGATION PROJECTS
IN 1990 BY BASIN FOR ALTERNATIVE F1

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	46	31	49
2-4	P. Langkawi+	-	-	-
5	Muda	53	44	92
6	Perai	-	-	-
7	P. Pinang	1	6	1
8	Kurian	-	-	-
9	Kurau	23	14	42
10	Perak	-	66	177
11-14	Bernam+	-	-	-
15	Kelang	19	41	94
16	Langat	36	38	181
17	Selangor	-	-	-
18	Linggi	83	56	78
19	Melaka	5	54	43
20	Kesang	7.5	2	10
21	Muar	46	9	57
22	Batu Pahat	24	4	42
23	Pontian Kechil	30	21	14
24-29	Johor+	-	-	-
30	Pahang	105	58	1,038
31-35	Kuantan+	-	-	-
36	Trengganu	39	75	73
37	Setiu	24	3	36
38	Besut	30	17	86
39	Kemasin	-	102	258
40	Kelantan	15	88	176
41	Golok	41	28	145
	Total	627.5	757	2,692

Table 175 BENEFICIAL EFFECTS OF FLOOD MITIGATION PROJECTS
IN 1990 BY BASIN FOR ALTERNATIVE F2

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	34	25	37
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	48	43	88
6	Perai	-	-	-
7	P. Pinang	1	6	1
8	Kurian	-	-	-
9	Kurau	13	3	25
10	Perak	-	23	5
11-14	Bernam+	-	-	-
15	Kelang	20	126	29
16	Langat	-	-	-
17	Sepang	-	-	-
18	Linggi	27	41	30
19	Melaka	-	-	-
20	Kesang	7.5	2	10
21	Muar	-	-	-
22	Batu Pahat	24	5	42
23	Pontian Kechil	25	19	8
24	Johor	-	-	-
25	Sedili Besar	-	-	-
26	Mersing	-	-	-
27	Endau	-	-	-
28-29	Rompint+	-	-	-
30	Pahang	-	35	20
31	Kuantan	-	-	-
32	Kemaman	-	14	20
33-35	Paka+	-	-	-
36	Trengganu	-	-	-
37	Setiu	9	2	6
38	Besut	-	-	-
39	Kemasin	-	50	62
40	Kelantan	5	40	50
41	Golok	-	-	-
	Total	213.5	434	433

Table 176 BENEFICIAL EFFECTS OF FLOOD MITIGATION PROJECTS
IN 1990 BY BASIN FOR ALTERNATIVE F3

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	46	31	49
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	48	43	88
6	Perai	-	-	-
7	P. Pinang	-	-	-
8	Kurian	-	-	-
9	Kurau	13	3	25
10	Perak	-	23	5
11	Bernam	-	-	-
12-14	Selangor+	-	-	-
15	Kelang	19	41	94
16	Langat	36	38	181
17	Sepang	-	-	-
18	Linggi	83	56	78
19	Melaka	5	54	42
20	Kesang	7.5	2	10
21	Muar	-	-	-
22	Batu Pahat	24	4	42
23	Pontian Kechil	30	21	14
24-29	Johor+	-	-	-
30	Pahang	-	35	20
31	Kuantan	-	-	-
32	Kemaman	-	14	20
33-35	Paka+	-	-	-
36	Trengganu	-	-	-
37	Setiu	-	-	-
38	Besut	30	17	86
39	Kemasin	-	102	258
40	Kelantan	5	88	176
41	Golok	10	20	59
	Total	356.5	592	1,247

Table 177 BENEFICIAL EFFECTS OF FLOOD MITIGATION
PROJECTS IN 2000 BY BASIN

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	34	25	37
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	75	54	121
6	Perai	4	3	5
7	P. Pinang	2	12	2
8	Kurian	-	-	-
9	Kurau	13	3	25
10	Perak	-	256	925
11-14	Bernam+	-	-	-
15	Kelang	36	215	36
16	Langat	-	-	-
17	Sepang	-	-	-
18	Linggi	41	53	43
19	Melaka	-	52	37
20	Kesang	38	20	91
21	Muar	53	45	38
22	Batu Pahat	93	28	260
23	Pontian Kechil	25	19	8
24	Johor	-	5	1
25	Sedili Besar	-	-	-
26	Mersing	6	23	9
27	Endau	11	18	8
28-29	Rompint+	-	-	-
30	Pahang	-	63	29
31	Kuantan	6	27	22
32	Kemaman	-	14	20
33-35	Paka+	-	-	-
36	Trengganu	29	78	97
37	Setiu	9	2	6
38	Besut	33	55	185
39	Kemasin	-	116	144
40	Kelantan	65	406	737
41	Golok	-	-	-
Total		573	1,592	2,886

Table 178 BENEFICIAL EFFECTS OF FLOOD MITIGATION PROJECTS
IN 2000 BY BASIN FOR ALTERNATIVE F1

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	46	31	49
2	P. Langkawi	-	-	-
3	Kedah	30.5	16	14
4	Merbok	-	-	-
5	Muda	139	79	157
6	Perai	4	3	5
7	P. Pinang	2	12	2
8	Kurian	-	-	-
9	Kurau	23	14	42
10	Perak	37.5	340	754
11	Bernam	11	8	17
12	Tengi	-	-	-
13	Selangor	18	9	84
14	Buloh	24	25	88
15	Kelang	73	267	143
16	Langat	128	120	555
17	Sepang	-	-	-
18	Linggi	103	70	94
19	Melaka	32	66	76
20	Kesang	68	33	109
21	Muar	266	76	257
22	Batu Pahat	109	31	290
23	Pontian Kechil	30	21	14
24	Johor	58	34	58
25	Sedili Besar	-	-	-
26	Mersing	9	26	15
27	Endau	37	33	57
28	Rompin	-	-	-
29	Bebar	-	-	-
30	Pahang	547	328	2,677
31	Kuantan	56	50	165
32	Kemaman	36	23	70
33	Paka	12	-	24
34	Dungun	50	8	162
35	Marang	-	-	-
36	Trengganu	162	145	303
37	Setiu	24	3	36
38	Besut	66	62	238
39	Kemasin	-	267	599
40	Kelantan	65	407	777
41	Golok	73	51	266
	Total	2,339	2,658	8,197

Table 179 BENEFICIAL EFFECTS OF FLOOD MITIGATION PROJECTS
IN 2000 BY BASIN FOR ALTERNATIVE F2

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	34	25	37
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	75	54	121
6	Perai	4	3	5
7	P. Pinang	2	12	2
8	Kurian	-	-	-
9	Kurau	13	3	25
10	Perak	-	256	925
11	Bernam	-	-	-
12	Tengi	-	-	-
13	Selangor	-	-	-
14	Buloh	-	-	-
15	Kelang	36	215	36
16	Langat	-	-	-
17	Sepang	-	-	-
18	Linggi	41	53	43
19	Melaka	-	52	37
20	Kesang	38	20	91
21	Muar	53	45	38
22	Batu Pahat	93	28	260
23	Pontian Kechil	25	19	8
24	Johor	-	5	1
25	Sedili Besar	-	-	-
26	Mersing	6	23	9
27	Endau	11	18	8
28	Rompin	-	-	-
29	Bebar	-	-	-
30	Pahang	-	63	29
31	Kuantan	6	27	22
32	Kemaman	-	14	20
33	Paka	-	-	-
34	Dungun	-	-	-
35	Marang	-	-	-
36	Trengganu	29	78	97
37	Setiu	9	2	6
38	Besut	33	55	185
39	Kemasin	-	116	144
40	Kelantan	65	406	777
41	Golok	-	-	-
	Total	573	1,592	2,926

Table 180 BENEFICIAL EFFECTS OF FLOOD MITIGATION PROJECTS
IN 2000 BY BASIN FOR ALTERNATIVE F3

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	46	31	49
2	P. Langkawi	-	-	-
3	Kedah	15.5	12	8
4	Merbok	-	-	-
5	Muda	75	54	121
6	Perai	4	3	5
7	P. Pinang	2	12	2
8	Kurian	-	-	-
9	Kurau	13	3	25
10	Perak	-	256	925
11	Bernam	11	8	17
12-13	Selangor+	-	-	-
14	Buloh	24	25	88
15	Kelang	73	267	143
16	Langat	128	120	555
17	Sepang	-	-	-
18	Linggi	103	70	94
19	Melaka	32	66	75
20	Kesang	68	33	109
21	Muar	53	45	38
22	Batu Pahat	109	31	290
23	Pontian Kechil	30	21	14
24	Johor	-	5	1
25	Sedili Besar	-	-	-
26	Mersing	9	26	15
27	Endau	37	33	57
28-29	Rompin+	-	-	-
30	Pahang	-	63	29
31	Kuantan	6	27	22
32	Kemaman	-	14	20
33-35	Paka+	-	-	-
36	Trengganu	5	35	32
37	Setiu	-	-	-
38	Besut	66	62	238
39	Kemasin	-	267	599
40	Kelantan	65	407	777
41	Golok	10	20	59
	Total	984.5	2,016	4,407

Table 181 SAFE SUPPLY PERIOD AND SAFE RIVER MAINTENANCE
FLOW WITH/WITHOUT RECOMMENDED STRUCTURAL
MEASURES UNDER THE CONDITION OF LOWER
ECONOMIC GROWTH IN 1990

Unit: days

Basin No.	Basin Name	Safe Supply Period		Safe Maintenance Flow Period	
		With Structure	Without Structure	With Structure	Without Structure
1	Perlis	310	230	292	210
2	Langkawi	351	285	316	265
3	Kedah	334	138	317	139
4	Merbok	365	290	365	275
5	Muda	362	270	285	200
6	Perai	365	184	365	184
7	Pinang	365	169	365	159
9	Kurau	294	184	267	169
10	Perak (Kinta)	365	332	365	307
11	Bernam	365	156	281	136
12	Tengi	365	365	365	339
13	Selangor	365	340	365	290
15	Kelang	365	199	365	189
16	Langat	365	299	365	245
17	Sepang	365	199	365	189
18	Linggi	365	253	365	202
19	Melaka	365	112	365	92
20	Kesang	365	212	365	212
21	Muar	365	143	365	132
23	Pontian Kechil	365	152	365	152
24	Johor	365	152	365	152
31	Kuantan	365	365	365	359
39	Kemasin	360	315	312	264
40	Kelantan	360	269	312	243

Table 182 SAFE SUPPLY PERIOD AND SAFE RIVER MAINTENANCE
FLOW WITH/WITHOUT RECOMMENDED STRUCTURAL
MEASURES UNDER THE CONDITION OF LOWER
ECONOMIC GROWTH IN 2000

Unit: days

Basin No.	Basin Name	Safe Supply Period		Safe Maintenance Flow Period	
		With Structure	Without Structure	With Structure	Without Structure
1	Perlis	309	200	290	190
2	Langkawi	351	285	316	265
3	Kedah	333	133	317	133
4	Merbok	365	285	365	275
5	Muda	347	225	279	195
6	Perai	365	184	365	174
7	Pinang	365	154	365	148
9	Kurau	294	184	268	169
10	Perak (Kinta)	365	332	365	307
11	Bernam	365	156	280	136
12	Tengi	365	365	365	339
13	Selangor	365	334	365	280
15	Kelang	365	189	365	143
16	Langat	365	300	365	251
17	Sepang	365	189	365	174
18	Linggi	365	245	365	187
19	Melaka	365	92	365	87
20	Kesang	365	212	365	207
21	Muar	365	132	365	132
23	Pontian Kechil	365	152	365	152
24	Johor	365	152	365	137
31	Kuantan	365	359	365	334
39	Kemasin	344	311	304	261
40	Kelantan	344	269	304	243

Table 183 SURFACE AREA OF RESERVOIR CREATED
BY SOURCE FACILITIES IN 1990 AND
2000 BY PROJECT BY BASIN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Unit: km²

Basin No.	Project	Surface Area	
		1990	2000
1	Timah-Tasoh dam	0	11
2	Aver Tawar dam	0.3	0.3
	Ulu Melaka dam	0.3	0.3
3	Ahning dam	10	10
	Sari dam	0	3
	Badak-Temin dam	4	4
5	Naok-Reman dams	20	20
8	Kerian dam	0.5	0.5
10	Kinta (B) dam	1	1
	Rui dam	6	6
13	Selangor dam	6	6
	Batan Kali dam	1	1
15	Gombak dam	0	3
18	Terip dam	3	3
21	Palong dam	6	6
24	Semangor dam	22	22
	Pengeli dam	11	11
	Linggiu dam	30	30
25	Sedidi	0	22
27	Anak Endau dam	1	1
	Kemelai dam	3	3
30	Kenaboi dam	0	3
	Teriang dam	4	4
39	Nenggiri dam	0	200
Total		129.1	371.1

Table 184 SURFACE AREA OF RESERVOIR CREATED
IN 1990 AND 2000 BY HYDROPOWER
FACILITIES BY BASIN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Project	Surface Area (km ²)	
		1990	2000
30	Tembeling (Upper)	250	250
30	Tekai & Penut	68	68
30	Telom Hilir	-	28
30	Jelai Kechil	-	70
30	Maran	-	197
36	Ulu Trengganu	46	46
40	Pergau	4	4
40	Lebir	-	247
40	Nenggiri	49	49
40	Galas (Dabong)	-	105
40	Kelantan Barrage	-	-
Total		417	1,064

Table 185 LENGTH OF RIVER STRETCH WHERE BOD CONCENTRATION IS NOT MORE THAN 5 PPM IN 2000 COMPARED WITH WITHOUT PROJECT CONDITION BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Basin Name	Studied Length (km)	Length of River Stretch ^{/1} (km)
1	Perlis	12	4/3
3	Kedah	55	55/55
4	Merbok	24	23/10
5	Muda	85	85/85
6	Perai	33	22/4
8	Kerian	40	40/40
9	Kurau	65	65/45
10	Perak	270	270/200
11	Bernam	135	135/100
12	Tengi	15	15/15
13	Selangor	84	84/84
14	Buloh	33	0/0
15	Kelang	85	9/5
16	Langat	130	130/27
17	Sepang	15	4/0
18	Linggi	45	0/0
19	Melaka	40	10/0
20	Kesang	33	5/0
21	Muar	190	187/0
22	Batu Pahat	85	48/0
23	Sekudai	38	13/0
24	Johor	103	103/17
25	Sedili Besar	70	70/70
26	Mersing	14	14/14
27	Endau	128	128/16
28	Pompin	185	185/97
29	Bebar	52	52/52
30	Pahang	400	400/400
31	Kuantan	19	19/19
32	Kemaman	35	35/18
33	Paka	22	22/22
34	Dungun	50	50/50
35	Marang	30	30/30
36	Trengganu	80	80/80
37	Setiu	15	15/15
38	Besut	35	35/35
39	Kemasin	40	40/17
40	Kelantan	165	165/165
Total		2,955	2,647/1,790

Remarks; ^{/1}: (Length of river stretch with project)/
(Length of river stretch without project)

Table 186

BENEFICIAL EFFECTS OF FLOOD MITIGATION
PROJECTS IN 1990 BY BASIN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	34	25.3	37
2-4	P. Langkawi	-	-	-
5	Muda	48	42.6	88
6	Perai	-	-	-
7	P. Pinang	1	5.2	1
8	Kurian	-	-	-
9	Kurau	13	2.9	25
10	Perak	-	22.8	5
11-14	Bernam+	-	-	-
15	Kelang	20	119.5	29
16-17	Langat+	-	-	-
18	Linggi	27	37.1	30
19	Melaka	-	-	-
20	Kesang	7.5	1.6	10
21	Muar	-	-	-
22	Batu Pahat	24	4.4	42
23	Pontian Kechil	25	17.2	8
24-29	Johor+	-	-	-
30	Pahang	-	34.7	20
31	Kuantan	-	-	-
32	Kemaman	-	14.0	20
33-36	Paka+	-	-	-
37	Setiu	9	2.6	6
38	Besut	-	-	-
39	Kemasin	-	49.7	62
40	Kelantan	5	39.9	50
41	Golok	-	-	-
	Total	213.5	419.5	433

Table 187

BENEFICIAL EFFECTS OF FLOOD MITIGATION
PROJECTS IN 2000 BY BASIN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Basin Name	Length of Improved River Stretch (km)	Number of Protected People (10 ³)	Area Relieved (km ²)
1	Perlis	34	25.3	37
2	P. Langkawi	-	-	-
3	Kedah	-	-	-
4	Merbok	-	-	-
5	Muda	75	54.0	121
6	Perai	4	3.0	5
7	P. Pinang	2	10.4	2
8	Kurian	-	-	-
9	Kurau	13	2.9	25
10	Perak	-	264.8	925
11-14	Bernam+	-	-	-
15	Kelang	36	203.7	36
16	Langat	-	-	-
17	Sepang	-	-	-
18	Linggi	41	47.8	43
19	Melaka	-	52.1	37
20	Kesang	38	19.4	91
21	Muar	53	45.4	38
22	Batu Pahat	93	28.0	260
23	Pontian Kechil	25	17.2	8
24	Johor	-	4.7	1
25	Sedili Besar	-	-	-
26	Mersing	6	21.6	9
27	Endau	11	19.9	8
28-29	Rompint+	-	-	-
30	Pahang	-	62.9	29
31	Kuantan	6	26.4	22
32	Kemaman	-	14.0	20
33-35	Paka+	-	-	-
36	Trengganu	29	76.0	97
37	Setiu	9	2.6	6
38	Besut	33	51.3	185
39	Kemasin	-	115.5	144
40	Kelantan	65	401.0	777
41	Golok	-	-	-
Total		573	1,569.9	2,926

Table 188 NUMBER OF PEOPLE SERVED BY PROPOSED
PUBLIC WATER SUPPLY PROJECTS IN 1990
AND 2000 BY CITY/RURAL BY BASIN (1/5)

Unit: 10³ persons

Basin No.	City/town/Rural		No. of People Served	
			1990	2000
1	C1	Kangar	17.1	26.0
		Rural	152.5	171.1
		Total	169.6	197.1
2 3	C101 C2 C102 C103	Rural	34.2	38.0
		Jitra	24.3	41.0
		Alor Setar	76.5	100.0
		Guar Chempedak	9.9	15.0
		Yen	8.1	13.0
		Rural	570.9	625.0
		Total	689.7	929.0
4	C3	Sungai Petani	55.8	79.0
		Rural	90.1	98.6
		Total	145.9	177.6
5	C104	Tikan Batu	8.1	14.0
		Rural	312.1	334.6
		Total	320.2	348.6
6	C4 C5 C109 C6 C110	Kulim	36.0	54.0
		Butterworth	103.0	121.0
		Kg. Pmtg. Kuching	14.4	20.0
		Bukit Mertajam	29.7	38.0
		Perai	11.7	15.0
		Rural	362.0	367.9
		Total	556.8	615.9
7	C8 C105 C106 C107 C108	Georgetown	262.0	294.0
		Air Itam	48.6	65.0
		Tg. Tokong	16.2	21.0
		Gelugor	18.0	25.0
		Tg. Bunga	12.6	17.0
		Rural	188.8	187.0
		Total	546.2	609.0
8		Rural	46.1	47.1
9	C112 C10	Bagan Serai	9.9	13.0
		Taiping	247.0	313.0
		Rural	390.6	471.9
		Total	647.5	797.9

Remarks; Sum of the population served by State PWDs,
Waterworks Departments, Water Authorities and RESP

Table 189 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC WATER SUPPLY PROJECTS IN 1990 AND 2000 BY CITY/RURAL BY BASIN (2/5)

Unit: 10³ persons

Basin No.	City/town/Rural	No. of People Served		
		1990	2000	
10	C11	Kuala Kangsar	14.4	18.0
	C12	Sg. Siput Utara	25.2	33.0
	C13	Ipoh	377.0	446.0
	C14	Batu Gajah	10.8	14.0
	C15	Kampar	24.3	30.0
	C111	Baru Mambang	9.9	13.0
	C113	Jelapang	9.0	12.0
	C17	Telok Anson	53.1	69.0
	C18	Tapah	9.9	12.0
		Rural	693.6	567.4
		Total	1,227.2	1,214.4
11		Rural	228.7	224.4
12		Rural	23.0	25.7
13	C21	Kuala Kubu Baru	11.7	16.0
		Rural	208.9	186.7
		Total	220.6	202.7
14	C114	S. Buloh	8.1	13.0
		Rural	49.9	54.3
		Total	58.0	67.3
15	C22	Klang	359.0	613.0
	C23	Shah Alam	59.4	141.0
	C24	Petaling Jaya	484.0	927.0
	C25	W. Persekutuan	1,419.0	2,039.0
	C116	Ampang	13.5	18.0
	C117	Serdang Baru	18.9	25.0
		Rural	312.8	285.8
	Total	2,666.6	4,048.8	
16	C26	Kajang	38.7	58.0
	C115	Semenyih	10.8	14.0
		Rural	325.2	302.3
		Total	374.7	374.3
17	C28	Port Dickson	38.7	64.0
		Rural	60.5	66.8
		Total	99.2	130.8
18	C29	Seremban	210.0	290.0
		Rural	162.1	195.9
		Total	372.1	485.9

Remarks; Sum of the population served by State PWDs, Waterworks Departments, Water Authorities and RESP

Table 190 NUMBER OF PEOPLE SERVED BY PROPOSED
PUBLIC WATER SUPPLY PROJECTS IN 1990
AND 2000 BY CITY/RURAL BY BASIN (3/5)

Unit: 10³ persons

Basin No.	City/twon/Rural	No. of People Served		
		1990	2000	
19	C119	Tampin	10.8	14.0
	C31	Melaka	88.2	112.0
	C120	Kelebang	9.9	13.0
	C121	Bukit Baru	19.8	26.0
		Rural	258.4	260.5
		Total	387.1	425.5
20	C33	Tangkak	14.4	19.0
		Rural	89.5	97.7
		Total	103.9	116.7
21	C30	Kuala Pilah	12.6	16.0
	C32	Segamat	57.6	104.0
	C122	Labis	12.6	17.0
	C125	Jemetah	9.0	12.0
	C34	Muar	69.3	90.0
	C145	PT9	8.1	10.0
		Rural	346.4	361.4
	Total	515.6	610.4	
22	C35	Batu Pahat	79.2	114.0
	C123	Yong Peng	10.8	14.0
		Rural	223.7	267.6
		Total	313.7	395.6
23	C37	Pontian Kechil	39.6	75.0
	C124	Pekan Nanas	9.9	13.0
	C38	Kulai	42.3	78.0
	C39	Johor Bahru	439.0	686.0
	C127	Senai	9.0	15.0
	C128	Kelapa Sawit	8.1	12.0
	C129	Masai	10.8	22.0
		Rural	169.4	208.7
	Total	728.1	1,109.7	
24	C126	Ulu Tiram	10.8	20.0
	C40	Kota Tinggi	19.8	34.0
		Rural	107.9	112.0
		Total	138.5	166.0
25		Rural	46.7	45.4
26	C42	Mersing	22.5	41.0
		Rural	7.1	8.7
		Total	29.6	49.7

Remarks; Sum of the population served by State PWDs,
Waterworks Departments, Water Authorities and RESP

Table 191 NUMBER OF PEOPLE SERVED BY PROPOSED
PUBLIC WATER SUPPLY PROJECTS IN 1990
AND 2000 BY CITY/RURAL BY BASIN (4/5)

Unit: 10³ persons

Basin No.	City/town/Rural	No. of People Served			
		1990	2000		
27	C41	Kluang	60.3	84.0	
	C151	PT15	20.7	23.0	
		Rural	86.2	90.8	
		Total	167.2	197.8	
28	C139	PT3	7.2	10.0	
	C141	PT5	11.7	17.0	
	C142	PT6	29.7	42.0	
	C143	PT7	7.2	10.0	
	C146	PT10	9.0	10.0	
	C147	PT11	11.7	15.0	
	C148	PT12	22.5	25.0	
	C149	PT13	7.2	11.0	
	C150	PT14	21.6	24.0	
		Rural	5.8	3.9	
	Total	133.6	167.9		
29	C140	PT4	8.1	12.0	
		Rural	2.1	1.4	
		Total	10.2	13.4	
30	C118	Bahau	11.7	16.0	
	C137	PT1	27.9	31.0	
	C138	PT2	10.8	16.0	
	C144	PT8	17.1	21.0	
	C152	PT16	9.9	14.0	
	C153	PT17	10.8	12.0	
	C154	PT18	9.0	10.0	
	C155	PT19	10.8	12.0	
	C156	PT20	29.7	33.0	
	C130	Mentakab	11.7	18.0	
	C45	Temerloh	16.2	22.0	
	C131	Teriang	10.8	17.0	
	C46	Bentong	24.3	30.0	
	C48	Jerantut	9.9	17.0	
	C49	Raub	27.0	38.0	
	C50	Kuala Lipis	10.8	14.0	
		Rural	450.7	481.9	
		Total	699.1	802.9	
	31	C47	Kuantan	333.0	653.0
			Rural	16.2	15.6
Total			349.2	668.6	
32	C51	Chukai	19.8	28.0	
		Rural	68.3	53.0	
		Total	88.1	81.0	

Remarks; Sum of the population served by State PWDs,
Waterworks Departments, Water Authorities and RESP

Table 192 NUMBER OF PEOPLE SERVED BY PROPOSED
PUBLIC WATER SUPPLY PROJECTS IN 1990
AND 2000 BY CITY/RURAL BY BASIN (5/5)

Unit: 10³ persons

Basin No.	City/town/Rural	No. of People Served		
		1990	2000	
33	Rural	5.2	0.9	
34	C52	Dungun	46.8	84.0
		Rural	10.7	2.0
		Total	57.5	86.0
35	Rural	37.3	35.2	
36	C132	Ulu Trengganu	9.0	17.0
	C53	Kuala Trengganu	377.0	611.0
		Rural	63.7	43.8
		Total	449.7	671.8
37	Rural	43.3	25.9	
38	Rural	70.6	42.2	
39	C56	Peringat	12.6	23.0
	C57	Pengkak Kalong	25.9	56.0
	C134	Kadok	50.4	101.0
		Rural	207.9	216.0
		Total	296.8	396.0
40	C135	Gua Musang	7.0	17.0
	C54	Tanah Merah	9.1	18.0
	C55	Kota Bharu	309.6	567.0
	C58	Pasir Mas	12.6	23.0
	C133	Kuala Krai	18.2	46.0
		Rural	330.0	300.3
	Total	686.5	971.3	
41	C136	Rantau Panjang	5.6	12.0
		Rural	109.0	91.7
		Total	114.6	103.7
Grand Total		13,898.4	17,718.1	

Remarks; Sum of the population served by State PWDs,
Waterworks Departments, Water Authorities and RESP

Table 193 NUMBER OF FARM HOUSEHOLDS BENEFITED BY
PROPOSED MAJOR IRRIGATION DEVELOPMENT
IN 1990 AND 2000

Basin No.	Name of Scheme	Total Development Area (ha) <u>/1</u>	Benefited Farms	
			1990	2000
1 & 3	Muda II	93,291	17,353	74,633
8, 9 & 10	Krian & Sg. Manik	26,916	21,533	21,533
10	Trans Perak IV	11,334	4,770	6,066
11 & 12	Tg. Karang	15,441	12,353	12,353
27	Sawa Endau	8,092	2,826	3,659
27 & 28	Rompin Endau	12,951	5,375	6,671
30	Trans Pahang	13,354	3,742	8,174
38	Besut	536	429	429
39	Kemasin Semarak	8,904	7,123	7,123
40	North Kelantan	11,700	9,360	9,360
40	KADA II	29,893	11,957	23,915
Total		232,412	96,821	173,916

Remarks; /1: Total incremental area to be developed during
4MP through 7MP

Table 194 NUMBER OF FARM HOUSEHOLDS BENEFITED BY
PROPOSED MINOR IRRIGATION DEVELOPMENT
IN 1990 AND 2000

Basin No.	Name of Basin	Total Development Area (ha) /1	Benefited Farms	
			1990	2000
1	Perlis	8,968	5,727	7,174
2	Pulau Langkawi	428	342	342
3	Kedah	14,133	5,354	11,306
4	Merbok	976	781	781
5	Muda	11,464	5,492	9,170
6	Perai	458	366	366
7	Pulau Pinang	304	204	243
8	Kerian	1,477	779	1,181
9	Kurau	157	126	126
10	Perak	1,004	803	803
11-15	Bernam+	-	-	-
16	Langat	60	36	49
17	Selangor	-	-	-
18	Linggi	632	459	506
19	Melaka	2,976	2,012	2,382
20	Kesang	404	323	323
21	Muar	4,472	3,089	3,577
22-27	Batu Pahat+	-	-	-
28	Rompin	69	55	55
29	Bebar	648	266	266
30	Pahang	13,286	6,293	8,692
31	Kuantan	316	130	130
32	Kemaman	72	58	58
33	Paka	-	-	-
34	Dungun	1,435	999	1,149
35	Marang	2,775	1,055	2,221
36	Trengganu	3,352	2,333	2,682
37	Seti	2,345	946	1,876
38	Besut	789	631	631
39	Kemasin	6,096	1,465	4,878
40	Kelantan	8,465	3,386	6,772
41	Golok	25,638	10,255	20,510
Total		113,199	53,765	88,249

Remarks; /1: Total development area during 4MP through 7MP

Table 195 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC SEWERAGE SYSTEMS AFFECTING RIVER WATER QUALITY IN 1990 AND 2000 BY SYSTEM BY BASIN

Basin No.	City/Town	Number of Served Population (10 ³)	
		1990	2000
4	C3 Sungai Petani	50	79
6	C4 Kulim	26	54
15	C23 Shah Alam	40	141
	C24 Petaling Jaya	218	927
	C25 W. Persekutuan	560	1,890
	Sub-total	818	2,958
16	C26 Kajang/Semenyih	15	58
18	C29 Seremban	95	291
21	C32 Segamat	32	104
23	C38 Kulai/Senai	24	79
27	C41 Kluang	27	67
39	C57 Pengkal Kalong	32	57
Total		1,119	3,747

Table 196: NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC SEWERAGE SYSTEMS NOT AFFECTING RIVER WATER QUALITY IN 1990 AND 2000 BY SYSTEM BY BASIN

Basin No.	City/Town	Number of Served Population (10 ³)	
		1990	2000
3	C2 Alor Setar	43	61
6	C5 Butterworth	36	97
	C6 Bukit Mertajam	12	31
	Sub-total	48	128
7	C8 Georgetown	10	62
9	C10 Taiping	111	250
10	C13 Ipoh	170	357
	C17 Telok Anson	27	56
	Sub-total	197	413
15	C22 Klang	72	307
17	C28 Port Dickson	26	52
19	C31 Melaka	49	90
23	C39 Johor Bahru	176	549
31	C47 Kuantan	200	523
36	C53 Kuala Trengganu	189	367
40	C55 Kota Bahru	241	454
Total		1,362	3,256

Table 197 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC SEWERAGE SYSTEMS IN 1990 AND 2000 BY SYSTEM BY BASIN FOR ALTERNATIVE P1

Basin No.	City/Town	Number of Served Population (10 ³)	
		1990	2000
4	C3 Sungai Petani	56	79
6	C4 Kulim	20	54
15	C23 Shah Alam	66	141
	C24 Petaling Jaya	484	927
	C25 K.L.	1,270	1,890
	Sub-total	1,820	2,958
16	C26 Kajang Chua	26	58
18	C29 Seremban	210	290
21	C32 Segamat	51	104
23	C38 Kulai	47	78
27	C41 Keluang	47	67
39	C57 Pangkal Kalong	7	56
Total		2,284	3,744

Table 198 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC SEWERAGE SYSTEMS IN 1990 AND 2000 BY SYSTEM BY BASIN FOR ALTERNATIVE P2

Basin No.	City/Town	Number of Served Population (10 ³)	
		1990	2000
4	C3 Sungai Petani	31	79
6	C4 Kulim	2	38
15	C23 Shah Alam	66	141
	C24 Petaling Jaya	484	927
	C25 W. Persekutuan	1,198	1,889
	Sub-total	1,748	2,957
18	C29 Seremban	210	290
23	C38 Kurai/Senai	47	78
27	C41 Kluang	7	34
39	C57 Pengkal Kalong	0	45
Total		2,045	3,521

Table 199 POPULATION SERVED BY PROPOSED FLOOD
FORECASTING AND WARNING SYSTEM
IN 1990 AND 2000 BY BASIN

Unit: 10³ persons

Basin No.	Basin Name	1990	2000
1	Perlis	9.0	9.0
5	Muda	10.2	10.2
7	P. Pinang	5.5	5.5
10	Perak/ <u>1</u>	162.9	162.9
13	Selangor	4.4	4.4
15	Kelang	113.2	113.2
16	Langat	20.6	20.6
18	Linggi	14.6	14.6
19	Melaka	25.2	25.2
21	Muar	14.2	14.2
23	Sekudai	9.2	9.2
	Tebrau	5.8	5.8
24	Johor	4.4	4.4
30	Pahang/ <u>1</u>	99.1	99.1
31	Kuantan	8.5	8.5
32	Kemaman	6.7	6.7
34	Dungun	2.6	2.6
36	Trengganu/ <u>1</u>	20.5	20.5
38	Besut/ <u>1</u>	15.1	15.1
39	Kemasin/Semarak	7.1	7.1
40	Kelantan/ <u>1</u>	213.5	213.5
41	Golok	12.7	12.7
	Total	785.0	785.0

Remarks; 1: Additional flood forecasting stations be recommended.

Table 200 NUMBER OF PEOPLE TO BE REMOVED FOR
CONSTRUCTION OF SOURCE FACILITIES
BY 2000 BY FACILITIES BY BASIN

Unit: Persons

Basin No.	Name of Facilities	Number of People to be removed
1	Timah-Tasoh dam	50
2	Aver Tawar dam	50
	Ulu Melaka dam	50
3	Ahning dam	50
	Sari dam	50
	Durian dam	50
	Badak-Temin dam	50
5	Naok-Reman dams	50
	Beris dam	50
6	Mengkuang Phase I & II	50
8	Kerian dam	50
10	Kinta (B) dam	50
	Rui dam	50
13	Selangor dam	50
	Batan Kali dam	50
15	Gombak dam	250
18	Terip dam	50
21	Muar dam	50
	Palong dam	50
24	Semangar dam	100
	Linggiu dam	50
	Pengeli dam	50
25	Sedili dam	100
27	Anak Endau dam	50
	Kemelai dam	50
30	Perting dam	50
	Kanaboi dam	50
	Kong Koi dam	50
	Teriang dam	50
	Gelami dam	150
40	Nenggiri dam	1,500
Total		3,400

Table 2C1 NUMBER OF PEOPLE TO BE REMOVED FOR
CONSTRUCTION OF SOURCE FACILITIES
BY 2000 BY FACILITIES BY BASIN
BY ALTERNATIVE (1/2)

Unit: Persons

Basin No.	Name of Facilities	Number of People to be removed		
		B1	B2	B3
1	Arau dam	50	-	-
	Timah-Tasoh	50	50	50
2	Aver Tawar dam	50	50	50
	Nylor dam	50	-	-
	Ulu Melaka dam	50	50	50
3	Ahning dam	50	50	50
	Sari dam	50	50	50
	Badak-Temin dam	50	50	50
	Durian dam	50	50	50
4	4-A dam	50	-	-
5	Naok-Reman dams	50	50	50
	Beris dam	50	50	50
	Tawar-Muda dam	50	50	-
	Legong dam	50	50	-
	Weng dam	50	-	-
	Charock Teber dam	50	-	-
	Chiak dam	50	-	-
6	Mengkuang Phase I & II	50	50	50
8	Kerian dam	50	50	50
	Sira dam	50	-	-
9	9-A(2) dam	50	-	-
10	Rui dam	50	50	-
	Kinta (B) dam	50	50	50
11	Geling dam	50	50	-
	Bil dam	50	-	-
	Sungkai dam	50	-	-
13	Selangor dam	50	50	50
	Batan Kali dam	50	50	50
15	Gombak dam	250	250	250
18	Terip dam	50	50	50
21	Muar dam	50	-	-
	Palong dam	50	50	50
24	Semangor dam	100	100	100
	Linggiu dam	50	50	50
	Pengeri dam	50	-	-
25	Sedili dam	100	100	100

Table 202 NUMBER OF PEOPLE TO BE REMOVED FOR
CONSTRUCTION OF SOURCE FACILITIES
BY 2000 BY FACILITIES BY BASIN
BY ALTERNATIVE (2/2)

Unit: Persons

Basin No.	Name of Facilities	Number of People to be removed		
		B1	B2	B3
27	Anak Endau dam	50	50	50
	Kemelai dam	50	50	50
30	Kenaboi dam	50	50	-
	Perting dam	50	50	-
	Teriang dam	50	50	50
	Kongkoi dam	50	-	-
	Bera dam	50	-	-
	Gelami dam	150	150	-
40	Nenggiri dam	1,500	1,500	1,500
Total		4,250	3,400	2,950

Table 203 NUMBER OF PEOPLE TO BE REMOVED FOR
CONSTRUCTION OF HYDROPOWER PROJECTS
BY 2000 BY FACILITIES BY BASIN

Basin No.	Project	Number of People to be removed
30	Tembeling (Upper)	500
30	Tekai & Penut	100
30	Telom Hilir	100
30	Jelai Kechil	100
30	Meran	5,000
30	Jelai	100
30	Terum 1	100
36	Ulu Trengganu	100
40	Pergau	50
40	Lebir	1,000
40	Nenggiri	1,000
40	Galas (Dabong)	10,000
40	Kelantan Barrage	6,000
		24,150

Table 204 NUMBER OF PEOPLE TO BE REMOVED FOR
CONSTRUCTION OF FLOOD MITIGATION
PROJECTS BY 2000 BY BASIN

Basin No.	Basin Name	People Removed
1	Perlis	200
2	P. Langkawi	-
3	Kedah	-
4	Merbok	-
5	Muda	4,800
6	Perai	100
7	P. Pinang	100
8	Kurian	-
9	Kurau	100
10	Perak	3,800
11	Bernam	-
12	Tengi	-
13	Selangor	-
14	Buloh	-
15	Kelang	1,600
16	Langat	-
17	Sepang	-
18	Linggi	100
19	Melaka	700
20	Kesang	100
21	Muar	900
22	Batu Pahat	100
23	Pontian Kechil	1,100
24	Johor	500
25	Sedili Besar	-
26	Mersing	400
27	Endau	600
28	Rompin	-
29	Bebar	-
30	Pahang	2,300
31	Kuantan	700
32	Kemaman	-
33	Paka	-
34	Dungun	-
35	Marang	-
36	Trengganu	4,400
37	Setiu	100
38	Besut	1,100
39	Kemasin	-
40	Kelantan	26,200
41	Golok	-
	Total	50,000

Table 205 NUMBER OF PEOPLE TO BE REMOVED FOR CONSTRUCTION OF FLOOD MITIGATION PROJECTS BY 2000 BY BASIN BY ALTERNATIVE

Basin No.	Basin Name	People Removed		
		F1	F2	F3
1	Perlis	200	200	200
2	P. Langkawi	-	-	-
3	Kedah	1,400	-	500
4	Merbok	-	-	-
5	Muda	9,100	4,800	4,800
6	Perai	100	100	100
7	P. Pinang	100	100	100
8	Kurian	-	-	-
9	Kurau	100	100	100
10	Perak	26,800	3,800	3,800
11	Bernam	100	-	100
12	Tengi	-	-	-
13	Selangor	100	-	-
14	Buloh	100	-	100
15	Kelang	5,600	1,600	5,600
16	Langat	2,600	-	2,600
17	Sepang	-	-	-
18	Linggi	1,100	100	1,100
19	Melaka	900	700	900
20	Kesang	100	100	100
21	Muar	1,400	900	900
22	Batu Pahat	100	100	100
23	Pontian Kechil	1,500	1,100	1,100
24	Johor	700	500	500
25	Sedili Besar	-	-	-
26	Mersing	400	400	400
27	Endau	900	600	900
28	Rompin	-	-	-
29	Bebar	-	-	-
30	Pahang	45,800	2,300	2,300
31	Kuantan	1,500	700	700
32	Kemaman	1,900	-	1,200
33	Paka	-	-	-
34	Dungun	2,500	-	-
35	Marang	-	-	-
36	Trengganu	19,600	4,400	2,700
37	Setiu	700	100	100
38	Besut	2,300	1,100	2,300
39	Kemasin	100	-	-
40	Kelantan	44,300	26,200	26,200
41	Golok	400	-	200
	Total	172,500	50,000	59,700

Table 206 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC WATER SUPPLY PROJECTS IN 1990 AND 2000 BY CITY/RURAL BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (1/5)

Unit: 10³ persons

Basin No.	City/town/Rural	No. of People Served		
		1990	2000	
1	C1	Kangar	16.2	20.9
		Rural	151.9	177.3
		Total	168.1	198.2
2		Rural	34.8	39.4
3	C101	Jirta	23.4	32.3
	C2	Alor Setar	72.0	78.9
	C102	Gura Chempedak	9.9	11.4
	C103	Yen	8.1	9.5
		Rural	573.4	647.2
		Total	686.8	779.3
4	C3	Sungai Petani	53.1	62.7
		Rural	90.2	102.3
		Total	143.3	165.0
5	C104	Tikan Batu	7.2	10.5
		Rural	312.0	340.3
		Total	319.2	350.8
6	C4	Kulim	34.2	41.8
	C5	Butterworth	87.3	101.0
	C6	Bukit Mertajam	27.9	29.5
	C109	Kg. Pmtg Kuching	13.5	15.2
	C110	Perai	10.8	12.4
		Rural	368.1	412.9
	Total	541.8	612.8	
7	C8	Georgetown	248.0	243.0
	C105	Air Itam	45.9	51.3
	C106	Tg. Tokong	15.3	17.1
	C107	Gelugor	17.1	20.0
	C108	Tg. Bunga	12.6	13.3
		Rural	195.3	224.1
	Total	534.2	568.8	
8		Rural	45.6	47.8
9	C10	Taiping	233.0	259.0
	C112	Bagan Serai	9.9	10.5
		Rural	376.8	390.6
		Total	619.7	660.1

Remarks; Sum of the population served by State PWDs, Waterworks Departments, Water Authorities and RESP

Table 207 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC WATER SUPPLY PROJECTS IN 1990 AND 2000 BY CITY/RURAL BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (2/5)

Unit: 10³ persons

Basin No.	City/town/Rural	No. of People Served		
		1990	2000	
10	C11	Kuala Kangsar	13.5	14.3
	C12	Sg. Siput Utara	24.3	26.6
	C13	Ipoh	357.0	370.0
	C14	Batu Gajah	9.9	10.5
	C15	Kampar	22.5	23.8
	C17	Telok Anson	50.4	54.2
	C18	Tapah	9.0	9.5
	C111	Baru Mambang	9.9	10.5
		Rural	729.0	779.3
	Total	1,225.5	1,298.7	
11		Rural	230.6	254.6
12		Rural	22.9	26.0
13	C21	Kuala Kubu Baru	10.8	12.4
		Rural	233.5	334.2
		Total	244.3	346.6
14	C114	S. Buloh	8.1	10.5
		Rural	50.4	58.9
		Total	58.5	69.4
15	C22	Klang	340.0	508.0
	C23	Shah Alam	55.8	117.0
	C24	Petaling Jaya	458.0	768.0
	C25	W. Persekutuan	1,343.0	1,691.0
	C116	Ampang	12.6	14.3
	C117	Serdang Baru	18.0	20.0
		Rural	346.4	485.7
	Total	2,573.8	3,604.0	
16	C26	Kajang	36.0	45.6
	C115	Semenyih	9.9	11.4
		Rural	360.5	518.0
		Total	370.4	529.4
17	C28	Port Dickson	36.9	50.4
		Rural	59.9	69.0
		Total	96.8	119.4
18	C29	Seremban	198.0	240.0
		Rural	153.6	161.6
		Total	351.6	401.6

Remarks; Sum of the population served by State PWDs, Waterworks Departments, Water Authorities and RESP

Table 208 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC WATER SUPPLY PROJECTS IN 1990 AND 2000 BY CITY/RURAL BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (3/5)

Unit: 10³ persons

Basin No.	City/twon/Rural	No. of People Served		
		1990	2000	
19	C31	Melaka	83.7	88.4
	C119	Tampin	9.9	11.4
	C120	Kelebang	9.0	10.5
	C121	Bukit Baru	18.9	20.9
		Rural	264.1	287.0
		Total	385.6	418.2
20	C33	Tangkak	13.5	15.2
		Rural	89.9	99.3
		Total	103.4	114.5
21	C30	Kuala Pilah	11.7	12.4
	C32	Segamat	54.9	82.7
	C34	Muar	65.7	70.3
	C122	Labis	11.7	13.3
	C125	Jementah	8.1	9.5
	C145	Pt 9	7.2	8.6
		Rural	362.6	451.5
		Total	521.9	648.3
22	C35	Batu Pahat	74.7	89.3
	C123	Yong Peng	9.9	11.4
		Rural	229.6	306.6
		Total	239.5	318.0
23	C37	Pontian Kechil	36.9	58.9
	C38	Kulai	39.6	61.8
	C39	Johor Bahru	416.0	569.0
	C124	Pekan Nasas	9.0	9.5
	C127	Senai	9.0	11.4
	C129	Masai	10.8	17.1
		Rural	176.0	231.2
		Total	697.3	958.9
24	C40	Kota Tinggi	18.9	26.6
	C126	Ulu Tiram	10.8	15.2
		Rural	120.4	179.3
		Total	131.2	194.5
25		Rural	52.6	81.3
26	C42	Mersing	21.6	32.3
		Rural	7.2	9.0
		Total	28.8	41.3

Remarks; Sum of the population served by State PWDs, Waterworks Departments, Water Authorities and RESP

Table 209 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC WATER SUPPLY PROJECTS IN 1990 AND 2000 BY CITY/RURAL BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (4/5)

Unit: 10³ persons

Basin No.	City/town/Rural	No. of People Served		
		1990	2000	
27	C41	Kluang	56.7	65.6
	C151	Pt 15	18.9	20.0
		Rural	96.3	142.3
		Total	115.2	162.3
28	C139	Pt 3	6.3	8.6
	C141	Pt 5	10.8	14.3
	C142	Pt 6	27.0	36.1
	C143	Pt 7	6.3	8.6
	C146	Pt 10	8.1	8.6
	C147	Pt 11	10.8	13.3
	C148	Pt 12	20.7	21.9
	C149	Pt 13	6.3	9.5
	C150	Pt 14	19.8	20.9
		Rural	17.6	31.5
	Total	133.7	173.3	
29	C140	Pt 4	7.2	10.5
		Rural	6.4	11.6
		Total	13.6	22.1
30	C45	Temerloh	15.3	17.1
	C46	Bentong	22.5	23.8
	C48	Jerantut	9.9	13.3
	C49	Ranb	26.1	29.5
	C50	Kuala Lipis	9.9	11.4
	C118	Bahau	10.8	12.4
	C130	Mentakab	10.8	14.3
	C131	Teriang	9.9	13.3
	C137	Pt 1	25.5	26.6
	C138	Pt 2	9.9	13.3
	C144	Pt 8	15.3	18.0
	C152	Pt 16	9.0	12.4
	C153	Pt 17	9.9	10.5
	C154	Pt 18	8.1	8.6
	C155	Pt 19	9.9	10.5
	C156	Pt 20	27.0	28.5
	Rural	490.9	646.7	
	Total	720.7	910.2	
31	C47	Kuantang	316.0	541.0
		Rural	15.4	13.5
		Total	331.4	554.5

Remarks; Sum of the population served by State PWDs, Waterworks Departments, Water Authorities and RESP

Table 210 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC WATER SUPPLY PROJECTS IN 1990 AND 2000 BY CITY/RURAL BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH (5/5)

Unit: 10³ persons

Basin No.	City/town/Rural	No. of People Served		
		1990	2000	
32	C51	Chukai	18.9	22.8
		Rural	50.5	41.8
		Total	69.4	64.6
33		Rural	11.1	12.5
34	C52	Dungun	44.1	65.6
		Rural	22.5	85.3
		Total	66.6	90.9
35		Rural	28.8	25.7
36	C53	Kuala Trengganu	357.0	506.0
	C132	Ulu Trengganu	8.1	13.3
		Rural	103.8	128.5
		Total	468.9	647.8
37		Rural	40.2	36.3
38		Rural	65.7	59.2
39	C56	Peringat	12.8	17.1
	C57	Pengkal Kalong	26.3	41.4
	C134	Kadok	12.0	16.2
		Rural	206.9	225.7
		Total	258.0	300.4
40	C54	Tanah Merah	9.8	13.5
	C55	Kota Bharu	293.4	446.5
	C58	Pasir Mas	12.8	17.1
	C133	Kuala Krai	18.8	34.2
	C135	Gua Musang	7.5	12.6
		Rural	339.7	380.3
	Total	682.0	904.2	
41		Rural	117.4	133.7
Grand Total			13,550.9	16,944.6

Remarks; Sum of the population served by State PWDs, Waterworks Departments, Water Authorities and RESP

Table 211 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC SEWERAGE SYSTEMS AFFECTING RIVER WATER QUALITY IN 1990 AND 2000 BY SYSTEM BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	City/Town	Number of Served Population (10 ³)	
		1990	2000
4	C3 Sungai Petani	35	66
6	C4 Kulim	15	44
15	C23 Shah Alam	34	117
	C24 Petaling Jaya	183	768
	C25 W. Persekutuan	455	1,542
	Sub-total	672	2,427
16	C26 Kajang/Semenyih	12	43
18	C29 Seremban	79	240
21	C32 Segamat	28	88
23	C38 Kulai/Senai	20	65
27	C41 Kluang	19	48
39	C57 Pengkal Kalong	21	46
Total		901	3,067

Table 212 NUMBER OF PEOPLE SERVED BY PROPOSED PUBLIC SEWERAGE SYSTEMS NOT AFFECTING RIVER WATER QUALITY IN 1990 AND 2000 BY SYSTEM BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	City/Town	Number of Served Population (10 ³)	
		1990	2000
3	C2 Alor Setar	28	50
	C5 Butterworth	29	66
	C6 Bukit Mertajam	9	20
	Sub-total	66	136
7	C8 Georgetown	0	0
9	C10 Taiping	70	169
10	C13 Ipoh	107	240
	C17 Telok Anson	11	37
	Sub-total	118	277
15	C22 Klang	68	254
17	C28 Port Dickson	10	34
19	C31 Melaka	33	61
	C39 Johor Bahru	125	370
31	C47 Kuantan	142	352
36	C53 Kuala Trengganu	143	329
40	C55 Kota Bahru	130	305
Total		905	2,287

Table 213 POPULATION SERVED BY PROPOSED FLOOD FORECASTING AND WARNING SYSTEMS IN 1990 AND 2000 BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH.

Unit: 10³ persons

Basin No.	Basin Name	1990	2000
1	Perlis	9.2	9.2
5	Muda	10.3	10.3
7	P. Pinang	5.4	5.4
10	Perak/ <u>1</u>	168.0	168.0
13	Selangor	4.2	4.2
15	Kelang	107.0	107.0
16	Langat	19.4	19.4
18	Linggi	14.4	14.4
19	Melaka	24.5	24.5
21	Muar	14.0	14.0
23	Sekudai	9.1	9.1
	Tebrau	5.7	5.7
24	Johor	4.4	4.4
30	Pahang/ <u>1</u>	98.2	98.2
31	Kuantan	8.4	8.4
32	Kemaman	6.5	6.5
34	Dungun	2.5	2.5
36	Trengganu/ <u>1</u>	19.9	19.9
38	Besut/ <u>1</u>	14.7	14.7
39	Kemasin/Semarak	7.0	7.0
40	Kelantan/ <u>1</u>	211.0	211.0
41	Golok	12.6	12.6
	Total	776.4	776.4

Remarks; 1: Additional flood forecasting stations be recommended.

Table 214

NUMBER OF PEOPLE TO BE REMOVED FOR
CONSTRUCTION OF SOURCE FACILITIES IN
2000 BY FACILITIES BY BASIN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Unit: Persons

Basin No.	Name of Facilities	Number of People to be removed
1	Timah-Tasoh dam	50
2	Ulu Melaka dam Aver Tawar dam	50 50
3	Ahning dam Sari dam Badak--Temin dam	50 50 50
5	Naok--Reman dams	50
8	Kerian dam	50
10	Rui dam Kinta (B) dam	50 50
13	Selangor dam Batan Kali dam	50 50
15	Gombak dam	250
18	Terip dam	50
21	Palong dam	50
24	Semangor dam Linggiu dam Pengiri dam	100 50 50
25	Sedili dam	100
27	Anak Endau dam Kemelai dam	50 50
30	Teriang dam Kenaboi dam	50 50
40	Nenggiri dam	1,500
Total		2,950

Table 215 NUMBER OF PEOPLE TO BE REMOVED FOR CONSTRUCTION OF HYDROPOWER PROJECTS IN 2000 BY FACILITIES BY BASIN UNDER THE CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Project	Number of People to be removed
30	Tembeling (Upper)	500
30	Tekai & Penut	100
30	Telom Hilir	100
30	Jelai Kechil	100
30	Meran	5,000
36	Ulu Trengganu	100
40	Pergau	50
40	Lebir	1,000
40	Nenggiri	1,000
40	Galas (Dabong)	10,000
40	Kelantan Barrage	6,000
		23,950

Table 216 NUMBER OF PEOPLE TO BE REMOVED FOR
CONSTRUCTION OF FLOOD MITIGATION
PROJECTS BY 2000 BY BASIN UNDER THE
CONDITION OF LOWER ECONOMIC GROWTH

Basin No.	Basin Name	People Removed
1	Perlis	200
2	P. Langkawi	-
3	Kedah	-
4	Merbok	-
5	Muda	4,900
6	Perai	100
7	P. Pinang	100
8	Kurian	-
9	Kurau	100
10	Perak	4,100
11	Bernam	-
12	Tengi	-
13	Selangor	-
14	Buloh	-
15	Kelang	1,400
16	Langat	-
17	Sepang	-
18	Linggi	100
19	Melaka	700
20	Kesang	100
21	Muar	900
22	Batu Pahat	100
23	Pontian Kechil	1,000
24	Johor	700
25	Sedili Besar	-
26	Mersing	300
27	Endau	700
28	Rompin	-
29	Bebar	-
30	Pahang	2,800
31	Kuantan	600
32	Kemaman	-
33	Paka	-
34	Dungun	-
35	Marang	-
36	Trengganu	4,300
37	Setiu	100
38	Besut	1,600
39	Kemasin	-
40	Kelantan	25,400
41	Golok	-
	Total	50,300

Table 217 BENEFICIAL AND ADVERSE EFFECTS OF RECOMMENDED WATER DEMAND AND SUPPLY BALANCE PLAN IN PERLIS/KEDAH/P. PINANG

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Irrigation	(M\$10 ⁶) 62
D&I water supply	(M\$10 ⁶) 122
Fish culture	(M\$10 ⁶) 8
Reservoir recreation	(M\$10 ⁶) 6
Total	(M\$10 ⁶) 198
1.2 Economic Cost	
Irrigation	(M\$10 ⁶) 30
D&I water supply	(M\$10 ⁶) 116
Fish culture	(M\$10 ⁶) 8
Dams, barrages & diversion facilities	(M\$10 ⁶) 31
Total	(M\$10 ⁶) 185
1.3 EIRR	(%) 10
2. Environmental Quality	
2.1 Beneficial Effect	
Safe maintenance flow period (2000)	See Table
Surface area of lake created	(km ²) 58
2.2 Adverse Effect	
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site) 11
3. Social Well-being	
3.1 Beneficial Effect	
Number of farm households benefited by proposed irrigation in 2000	(10 ³) 75
Number of people served by proposed public water supply in 2000	(10 ³) 2,814
Safe supply period (2000)	See Table
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ²) 5
Remarks;	All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.

Table 218 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER POLLUTION ABATEMENT
PLAN IN PERLIS/KEDAH/P. PINANG

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 15
Saving in pre-treatment for D&I water supply	(M\$10 ⁶) 20
Total	(M\$10 ⁶) 35
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 35
Private purification facilities /2	(M\$10 ⁶) 1
Pre-treatment for D&I water supply	(M\$10 ⁶) 2
Total	(M\$10 ⁶) 38
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 314 km)	(km) 305/237 ^{/1}
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 314 km)	(km) 264/221 ^{/1}
2.2 Adverse Effect	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 555
3.2 Adverse Effect	

Remarks; /1: (Length of river stretch with Project) /
(Length of river stretch without Project)
and including the river stretch in the State of Perak.
/2: Including the rubber factories and palm oil mills
in such part of the State of Perak as located in
Basin 8 and 9.

Table 219 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN IN
PERLIS/KEDAH/P. PINANG

Item		Recommended Plan
1. National Economic Development		
1.1 Economic Benefit		
Damage reduction	(M\$10 ⁶)	5.6
1.2 Economic Cost		
Flood mitigation work	(M\$10 ⁶)	4.0
1.3 EIRR	(%)	10
2. Environmental Quality		
2.1 Beneficial Effect		
Length of improved stretch	(km)	116
2.2 Adverse Effect		
		-
3. Social Well-Being		
3.1 Beneficial Effect		
Number of protected people by proposed facilities in 2000	(10 ³)	93
Population served by proposed flood warning system in 2000	(10 ³)	25
Area relieved from flood hazards	(10 ³ ha)	16
3.2 Adverse Effect		
Number of people to be removed for construction of facilities	(10 ³)	5

Table 220

BENEFICIAL AND ADVERSE EFFECTS OF RECOMMENDED
WATER DEMAND AND SUPPLY BALANCE PLAN IN PERAK

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Irrigation	(M\$10 ⁶) 16
D&I water supply	(M\$10 ⁶) 128
Fish culture	(M\$10 ⁶) 2
Reservoir recreation	(M\$10 ⁶) 2
Total	(M\$10 ⁶) 148
1.2 Economic Cost	
Irrigation	(M\$10 ⁶) 5
D&I water supply	(M\$10 ⁶) 114
Fish culture	(M\$10 ⁶) 2
Dams, barrages & diversion facilities	(M\$10 ⁶) 13
Total	(M\$10 ⁶) 134
1.3 EIRR	(%) 10
2. Environmental Quality	
2.1 Beneficial Effect	
Safe maintenance flow period (2000)	See Table
Surface area of lake created	(km ²) 9
2.2 Adverse Effect	
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site) 3
3. Social Well-being	
3.1 Beneficial Effect	
Number of farm households benefited by proposed irrigation in 2000	(10 ³) 29
Number of people served by proposed public water supply in 2000	(10 ³) 2,110
Safe supply period (2000)	See Table
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ²) 1
Remarks; All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.	

Table 221 BENEFICIAL AND ADVERSE EFFECTS
OF RECOMMENDED WATER POLLUTION
ABATEMENT PLAN IN PERAK

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 10
Saving in pre-treatment for D&I water supply	(M\$10 ⁶) 2
Total	(M\$10 ⁶) 12
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 35
Private purification facilities/ ²	(M\$10 ⁶) 1
Pre-treatment for D&I water supply	(M\$10 ⁶) 1
Total	(M\$10 ⁶) 37
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 510 km)	(km) 510/487/ ¹
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 510 km)	(km) 494/411/ ¹
2.2 Adverse Effect	
-	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 662
3.2 Adverse Effect	
-	
Remarks; ¹ : (Length of river stretch with Project) / (Length of river stretch without Project) and including the river stretch in the State of P.Pinang and Selangor.	
² : Including the rubber factories and palm oil mills in such part of the State of P.Pinang and Selangor as located in Basin 8, 9 and 11.	

Table 222 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN
IN PERAK

Item		Recommended Plan
1. National Economic Development		
1.1 Economic Benefit		
Damage reduction	(M\$10 ⁶)	9.7
1.2 Economic Cost		
Flood mitigation work	(M\$10 ⁶)	8.9
1.3 EIRR	(%)	8.5
2. Environmental Quality		
2.1 Beneficial Effect		
Length of improved stretch	(km)	13
2.2 Adverse Effect		
3. Social Well-Being		
3.1 Beneficial Effect		
Number of protected people by proposed facilities in 2000	(10 ³)	259
Population served by proposed flood warning system in 2000	(10 ³)	163
Area relieved from flood hazards	(10 ³ ha)	95
3.2 Adverse Effect		
Number of people to be removed for construction of facilities	(10 ³)	4

Table 223 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER DEMAND AND SUPPLY
BALANCE PLAN IN SELANGOR

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Irrigation	(M\$10 ⁶) 0
D&I water supply	(M\$10 ⁶) 316
Fish culture	(M\$10 ⁶) 4
Reservoir recreation	(M\$10 ⁶) 6
Total	(M\$10 ⁶) 326
1.2 Economic Cost	
Irrigation	(M\$10 ⁶) 0
D&I water supply	(M\$10 ⁶) 271
Fish culture	(M\$10 ⁶) 4
Dams, barrages & diversion facilities	(M\$10 ⁶) 42
Total	(M\$10 ⁶) 317
1.3 EIRR	(%) 10
2. Environmental Quality	
2.1 Beneficial Effect	
Safe maintenance flow period (2000)	See Table
Surface area of lake created	(km ²) 10
2.2 Adverse Effect	
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site) 3
3. Social Well-being	
3.1 Beneficial Effect	
Number of farm households benefited by proposed irrigation in 2000	(10 ³) 12
Number of people served by proposed public water supply in 2000	(10 ³) 4,845
Safe supply period (2000)	See Table
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ²) 4
Remarks;	All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.

Table 224 BENEFICIAL AND ADVERSE EFFECTS
OF RECOMMENDED WATER POLLUTION
ABATEMENT PLAN IN SELANGOR

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 58
Saving in pre-treatment for D&I water supply	(M\$10 ⁶) 0
Total	(M\$10 ⁶) 58
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 120
Private purification facilities ^{/2}	(M\$10 ⁶) 2
Pre-treatment for D&I water supply	(M\$10 ⁶) 0
Total	(M\$10 ⁶) 122
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 497 km)	(km) 428/371 ^{/1}
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 497 km)	(km) 378/307 ^{/1}
2.2 Adverse Effect	
-	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 3,472
3.2 Adverse Effect	
-	
Remarks; ^{/1} : (Length of river stretch with Project) / (Length of river stretch without Project) and including the river stretch in the State of Perak and N.Sembilan.	
^{/2} : Including the rubber factories and palm oil mills in such part of the State of Perak and N.Sembilan as located in Basin 11, 16 and 17	

Table 225 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN
IN SELANGOR

Item		Amount
1. National Economic Development		
1.1 Economic Benefit		
Damage reduction	(M\$10 ⁶)	3.2
1.2 Economic Cost		
Flood mitigation work	(M\$10 ⁶)	5.3
1.3 EIRR	(%)	5.0
2. Environmental Quality		
2.1 Beneficial Effect		
Length of improved stretch	(km)	36
2.2 Adverse Effect		-
3. Social Well-Being		
3.1 Beneficial Effect		
Number of protected people by proposed facilities in 2000	(10 ³)	216
Population served by proposed flood warning system in 2000	(10 ³)	138
Area relieved from flood hazards	(10 ³ ha)	3
3.2 Adverse Effect		
Number of people to be removed for construction of facilities	(10 ³)	2

Table 226

BENEFICIAL AND ADVERSE EFFECTS OF RECOMMENDED
WATER DEMAND AND SUPPLY BALANCE PLAN IN
N. SEMBILAN/MELAKA/NORTHWEST JOHOR

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Irrigation	(M\$10 ⁶) 5
D&I water supply	(M\$10 ⁶) 118
Fish culture	(M\$10 ⁶) 4
Reservoir recreation	(M\$10 ⁶) 2
Total	(M\$10 ⁶) 129
1.2 Economic Cost	
Irrigation	(M\$10 ⁶) 2
D&I water supply	(M\$10 ⁶) 72
Fish culture	(M\$10 ⁶) 4
Dams, barrages & diversion facilities	(M\$10 ⁶) 39
Total	(M\$10 ⁶) 117
1.3 EIRR	(%) 10
2. Environmental Quality	
2.1 Beneficial Effect	
Safe maintenance flow period (2000)	See Table
Surface area of lake created	(km ²) 18
2.2 Adverse Effect	
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site) 6
3. Social Well-being	
3.1 Beneficial Effect	
Number of farm households benefited by proposed irrigation in 2000	(10 ³) 9
Number of people served by proposed public water supply in 2000	(10 ³) 1,792
Safe supply period (2000)	See Table
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ²) 4

Remarks; All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.

Table 227 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER POLLUTION ABATEMENT
PLAN IN N. SEMBILAN/MELAKA/NORTHWEST
JOHOR

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 10
Saving in pre-treatment for D&I water supply	(M\$10 ⁶) 35
Total	(M\$10 ⁶) 45
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 26
Private purification facilities /2	(M\$10 ⁶) 2
Pre-treatment for D&I water supply	(M\$10 ⁶) 11
Total	(M\$10 ⁶) 39
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 853 km)	(km) 797/550 ^{/1}
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 853 km)	(km) 664/476 ^{/1}
2.2 Adverse Effect	
-	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 537
3.2 Adverse Effect	
-	

Remarks; /1: (Length of river stretch with Project)/
(Length of river stretch without Project)
and including the river stretch in the State
of Selangor, and Pahang.

/2: Including the rubber factories and palm oil mills
in such part of the State of Selangor, Johor and
Pahang as located in Basin 16, 17, 20, 21 and 30.

Table 228

BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN IN
N. SEMBILAN/MELAKA/NORTHWEST JOHOR

Item		Amount
1. National Economic Development		
1.1 Economic Benefit		
Damage reduction	(M\$10 ⁶)	4.0
1.2 Economic Cost		
Flood mitigation work	(M\$10 ⁶)	2.0
1.3 EIRR	(%)	13
2. Environmental Quality		
2.1 Beneficial Effect		
Length of improved stretch	(km)	113
2.2 Adverse Effect		--
3. Social Well-Being		
3.1 Beneficial Effect		
Number of protected people by proposed facilities in 2000	(10 ³)	159
Population served by proposed flood warning system in 2000	(10 ³)	42
Area relieved from flood hazards	(10 ³ ha)	19
3.2 Adverse Effect		
Number of people to be removed for construction of facilities	(10 ³)	2

Table 229 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER DEMAND AND SUPPLY
BALANCE PLAN IN JOHOR

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Irrigation	(M\$10 ⁶) 10
D&I water supply	(M\$10 ⁶) 101
Fish culture	(M\$10 ⁶) 4
Reservoir recreation	(M\$10 ⁶) 5
Total	(M\$10 ⁶) 120
1.2 Economic Cost	
Irrigation	(M\$10 ⁶) 4
D&I water supply	(M\$10 ⁶) 87
Fish culture	(M\$10 ⁶) 4
Dams, barrages & diversion facilities	(M\$10 ⁶) 11
Total	(M\$10 ⁶) 106
1.3 EIRR	(%) 10
2. Environmental Quality	
2.1 Beneficial Effect	
Safe maintenance flow period (2000)	See Table
Surface area of lake created	(km ²) 93
2.2 Adverse Effect	
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site) 6
3. Social Well-being	
3.1 Beneficial Effect	
Number of farm households benefited by proposed irrigation in 2000	(10 ³) 4
Number of people served by proposed public water supply in 2000	(10 ³) 2,487
Safe supply period (2000)	See Table
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ²) 3
Remarks; All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.	

Table 230 BENEFICIAL AND ADVERSE EFFECTS
OF RECOMMENDED WATER POLLUTION
ABATEMENT PLAN IN JOHOR

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 12
Saving in pre-treatment for D&I water supply	(M\$10 ⁶) 33
Total	(M\$10 ⁶) 45
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 30
Private purification facilities ^{/2}	(M\$10 ⁶) 3
Pre-treatment for D&I water supply	(M\$10 ⁶) 8
Total	(M\$10 ⁶) 41
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 846 km)	(km) 812/444 ^{/1}
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 846 km)	(km) 671/182 ^{/1}
2.2 Adverse Effect	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 798
3.2 Adverse Effect	

Remarks; /1: (Length of river stretch with Project) / (Length of river stretch without Project) and including the river stretch in the State of N.Sembilan, Melaka and Pahang

/2: Including the rubber factories and palm oil mills in such part of the State of N.Sembilan, Melaka and Pahang as located in Basin 20, 21, 27 and 28.

Table 231 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN
IN JOHOR

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Damage reduction	(M\$10 ⁶) 5.1
1.2 Economic Cost	
Flood mitigation work	(M\$10 ⁶) 7.6
1.3 EIRR	(%) 5.8
2. Environmental Quality	
2.1 Beneficial Effect	
Length of improved stretch	(km) 154
2.2 Adverse Effect	-
3. Social Well-Being	
3.1 Beneficial Effect	
Number of protected people by proposed facilities in 2000	(10 ³) 102
Population served by proposed flood warning system in 2000	(10 ³) 31
Area relieved from flood hazards	(10 ³ ha) 31
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ³) 3

Table 232 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER DEMAND AND SUPPLY
BALANCE PLAN IN PAHANG

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Irrigation	(M\$10 ⁶) 38
D&I water supply	(M\$10 ⁶) 99
Fish culture	(M\$10 ⁶) 6
Reservoir recreation	(M\$10 ⁶) 5
Total	(M\$10 ⁶) 148
1.2 Economic Cost	
Irrigation	(M\$10 ⁶) 18
D&I water supply	(M\$10 ⁶) 98
Fish culture	(M\$10 ⁶) 6
Dams, barrages & diversion facilities	(M\$10 ⁶) 3
Total	(M\$10 ⁶) 125
1.3 EIRR	(%) 10
2. Environmental Quality	
2.1 Beneficial Effect	
Safe maintenance flow period (2000)	See Table
Surface area of lake created	(km ²) 8
2.2 Adverse Effect	
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site) 3
3. Social Well-being	
3.1 Beneficial Effect	
Number of farm households benefited by proposed irrigation in 2000	(10 ³) 15
Number of people served by proposed public water supply in 2000	(10 ³) 1,619
Safe supply period (2000)	See Table
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ²) 2

Remarks; All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.

Table 233

BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER POLLUTION
ABATEMENT PLAN IN PAHANG

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 6
<u>Saving in pre-treatment for D&I water supply</u>	<u>(M\$10⁶) 20</u>
Total	(M\$10 ⁶) 26
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 12
Private purification facilities/ <u>2</u>	(M\$10 ⁶) 2
<u>Pre-treatment for D&I water supply</u>	<u>(M\$10⁶) 4</u>
Total	(M\$10 ⁶) 18
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 974 km)	(km) 974/750 ^{/1}
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 974 km)	(km) 894/534 ^{/1}
2.2 Adverse Effect	
-	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 522
3.2 Adverse Effect	
-	
Remarks; <u>/1</u> : (Length of river stretch with Project)/ (Length of river stretch without Project) and including the river stretch in the State of N.Sembilan and Johor.	
<u>/2</u> : Including the rubber factories and palm oil mills in such part of the State of N.Sembilan and Johor as located in Basin 21, 27 and 28.	

Table 234 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN
IN PAHANG

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Damage reduction	(M\$10 ⁶) 9.1
1.2 Economic Cost	
Flood mitigation work	(M\$10 ⁶) 13.3
1.3 EIRR	(%) 5.0
2. Environmental Quality	
2.1 Beneficial Effect	
Length of improved stretch	(km) 6
2.2 Adverse Effect	-
3. Social Well-Being	
3.1 Beneficial Effect	
Number of protected people by proposed facilities in 2000	(10 ³) 90
Population served by proposed flood warning system in 2000	(10 ³) 108
Area relieved from flood hazards	(10 ³ ha) 5
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ³) 3

Table 235 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER DEMAND AND SUPPLY
BALANCE PLAN IN TRENGGANU

Item		Amount
1. National Economic Development		
1.1 Economic Benefit		
Irrigation	(M\$10 ⁶)	6
D&I water supply	(M\$10 ⁶)	49
Fish culture	(M\$10 ⁶)	1
Reservoir recreation	(M\$10 ⁶)	1
Total	(M\$10 ⁶)	57
1.2 Economic Cost		
Irrigation	(M\$10 ⁶)	4
D&I water supply	(M\$10 ⁶)	49
Fish culture	(M\$10 ⁶)	1
Dams, barrages & diversion facilities	(M\$10 ⁶)	0
Total	(M\$10 ⁶)	54
1.3 EIRR	(%)	10
2. Environmental Quality		
2.1 Beneficial Effect		
Safe maintenance flow period (2000)		See Table
Surface area of lake created	(km ²)	-
2.2 Adverse Effect		
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site)	-
3. Social Well-being		
3.1 Beneficial Effect		
Number of farm households benefited by proposed irrigation in 2000	(10 ³)	9
Number of people served by proposed public water supply in 2000	(10 ³)	943
Safe supply period (2000)		See Table
3.2 Adverse Effect		
Number of people to be removed for construction of facilities	(10 ²)	-
Remarks; All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.		

Table 236

BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER POLLUTION ABATEMENT
PLAN IN TRENGGANU

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 4
Saving in pre-treatment for D&I water supply	(M\$10 ⁶) 0
Total	(M\$10 ⁶) 4
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 10
Private purification facilities	(M\$10 ⁶) 0
Pre-treatment for D&I water supply	(M\$10 ⁶) 0
Total	(M\$10 ⁶) 10
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 267 km)	(km) 267/267/ <u>1</u>
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 267 km)	(km) 267/249/ <u>1</u>
2.2 Adverse Effect	
-	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 367
3.2 Adverse Effect	
-	

Remarks; 1: (Length of river stretch with Project)/
(Length of river stretch without Project)

Table 237

BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN
IN TRENGGANU

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Damage reduction	(M\$10 ⁶) 4.8
1.2 Economic Cost	
Flood mitigation work	(M\$10 ⁶) 4.5
1.3 EIRR	(%) 8.4
2. Environmental Quality	
2.1 Beneficial Effect	
Length of improved stretch	(km) 71
2.2 Adverse Effect	
-	
3. Social Well-Being	
3.1 Beneficial Effect	
Number of protected people by proposed facilities in 2000	(10 ³) 148
Population served by proposed flood warning system in 2000	(10 ³) 45
Area relieved from flood hazards	(10 ³ ha) 31
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ³) 6

Table 238

BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER DEMAND AND SUPPLY
BALANCE PLAN IN KELANTAN

Item		Amount
1. National Economic Development		
1.1 Economic Benefit		
Irrigation	(M\$10 ⁶)	55
D&I water supply	(M\$10 ⁶)	71
Fish culture	(M\$10 ⁶)	5
Reservoir recreation	(M\$10 ⁶)	2
Total	(M\$10 ⁶)	133
1.2 Economic Cost		
Irrigation	(M\$10 ⁶)	31
D&I water supply	(M\$10 ⁶)	70
Fish culture	(M\$10 ⁶)	5
Dams, barrages & diversion facilities	(M\$10 ⁶)	7
Total	(M\$10 ⁶)	113
1.3 EIRR	(%)	10
2. Environmental Quality		
2.1 Beneficial Effect		
Safe maintenance flow period (2000)		See Table
Surface area of lake created	(km ²)	200
2.2 Adverse Effect		
Possible reduction in kind of fish immediately downstream of dams and barrages	(nos. of site)	3
3. Social Well-being		
3.1 Beneficial Effect		
Number of farm households benefited by proposed irrigation in 2000	(10 ³)	73
Number of people served by proposed public water supply in 2000	(10 ³)	1,392
Safe supply period (2000)		See Table
3.2 Adverse Effect		
Number of people to be removed for construction of facilities	(10 ²)	1
Remarks; All effects by proposed hydropower project are not shown except irrigation, D&I water supply and lake recreation benefit.		

Table 239

BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED WATER POLLUTION
ABATEMENT PLAN IN KELANTAN

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Sewerage	(M\$10 ⁶) 5
Saving in pre-treatment for D&I water supply	(M\$10 ⁶) 1
Total	(M\$10 ⁶) 6
1.2 Economic Cost	
Sewerage	(M\$10 ⁶) 16
Private purification facilities	(M\$10 ⁶) 0
Pre-treatment for D&I water supply	(M\$10 ⁶) 0
Total	(M\$10 ⁶) 16
2. Environmental Quality	
2.1 Beneficial Effects	
Length of river stretch where BOD concentration is not more than 10 mg/lit in 2000 compared with without project condition (Study length = 205 km)	(km) 205/182 ^{/1}
Length of river stretch where BOD concentration is not more than 5 mg/lit in 2000 compared with without project condition (Study length = 205 km)	(km) 188/165 ^{/1}
2.2 Adverse Effect	
-	
3. Social Well-Being	
3.1 Beneficial Effects	
Number of people served by proposed sewerage system in 2000	(10 ³) 510
3.2 Adverse Effect	
-	
Remarks; <u>/1</u> : (Length of river stretch with Project)/ (Length of river stretch without Project)	

Table 240 BENEFICIAL AND ADVERSE EFFECTS OF
RECOMMENDED FLOOD MITIGATION PLAN
IN KELANTAN

Item	Amount
1. National Economic Development	
1.1 Economic Benefit	
Damage reduction	(M\$10 ⁶) 24.7
1.2 Economic Cost	
Flood mitigation work	(M\$10 ⁶) 9.3
1.3 EIRR	(%) 16.2
2. Environmental Quality	
2.1 Beneficial Effect	
Length of improved stretch	(km) 65
2.2 Adverse Effect	-
3. Social Well-Being	
3.1 Beneficial Effect	
Number of protected people by proposed facilities in 2000	(10 ³) 522
Population served by proposed flood warning system in 2000	(10 ³) 233
Area relieved from flood hazards	(10 ³ ha) 92
3.2 Adverse Effect	
Number of people to be removed for construction of facilities	(10 ³) 26