

TABLES

Table II-1 Population Projection for Sungai Petani

Objective Projection Area	Projected By	Item of Projection	1991	1995	1998	2000	2005	2010	2015	2020
State (Kedah)	Statistic Dept. (1)	Population AAGR (%/year)	1,371,300	1,482,100 2	1,554,778	1,605,200 1.6	1,719,600 1.4	1,842,000 1.4	1,970,000 1.4	2,107,500 1.4
District (Kuala Muda District)	Statistic Dept. (1)	Population AAGR (%/year)	268,100	293,500 2.3		319,100 1.7	344,400 1.5	368,000 1.3	392,500 1.3	418,000 1.3
Sungai Petani Metropolitan Centre	National Water Resources Study (2)	Population AAGR (%/year)	119,957	132,467 2.7		149,880 2.5	169,412 2.5	189,489 2.3	209,628 2.0	228,225 1.7
Administrative Area MPSP	Structure Plan (3)	Population AAGR (%/year)	255,091	372,451 9.9		559,309 8.5	740,006 5.8	870,682 3.3		
Study Area Sungai Petani Town	Local Plan (4)	Population AAGR (%/year)	120,128	181,099 10.8		271,875 8.5	369,655 6.3	433,436 3.2		
Study Area	This Study	Population AAGR (%/year)	120,128	146,016 5.0	173,727 5.4	191,534 5.0	233,030 4.0	276,767 3.5	320,849 3.0	371,952 3.0

Source :

- (1) Statistics Department
- (2) National Water Resources Study
- (3) Majlis Perbandaran Sungai Petani Structure Plan
- (4) Sungai Petani Local Plan

Note :

- (1) MPSP = Sungai Petani Municipal Council
- (2) AAGR = Annual Average Growth Ratio

Table II-2 Population Projection for Melaka

Objective Projection Area	Projected By	Item of Projection	1991	1995	1998	2000	2005	2010	2015	2020	
State (Melaka)	Statistic Dept.	Population	540,200	571,000	582,001	598,900	625,500	652,900	683,000	713,400	
		AAGR (%/year)		1.4	1.0	1.0	0.9	0.9	0.9	0.9	0.9
	ISIS	Population				697,000	750,500	804,000	863,500	923,000	
		AAGR (%/year)					1.5	1.4	1.4	1.4	1.3
District (Melaka Tengah)	Structure Plan	Population		571,700		647,980	742,089	845,207			
		AAGR (%/year)									
	Statistic Dept.	Population	316,800	337,700	344,516	355,000	373,100	388,800	405,900	423,100	
		AAGR (%/year)		1.6	1.0	1.0	1.0	1.0	0.8	0.9	0.8
Melaka Town	ISIS	Population	344,221			425,170		506,520			
		AAGR (%/year)				2.4		1.8			
	Structure Plan	Population		355,389		389,754	422,839	500,000			
		AAGR (%/year)				1.9	1.6	3.4			
Local Plans	Population	262,682	288,586	319,308	362,000	425,200	493,000				
	AAGR (%/year)		2.4	5.2	4.3	3.3	3.0				
Study Area	This Study	Population	77,927	83,812	91,247	98,699	106,067	113,247	120,130		
		AAGR (%/year)		1.8		2.9	1.6	1.5	1.3	1.2	
Study Area	This Study	Population	266,007	292,476	323,859	367,323	431,192	499,744	550,875		
		AAGR (%/year)		2.4	5.2	4.3	3.3	3.0	2.0	1.5	

Note : ISIS = Institute of Strategic and International Studies
AAGR = Annual Average Growth Ratio

Table II-3 Employment Projections for Sungai Petani

	1998	2000	2005	2010	2015	2020
Population of Study Area	173,727	191,534	233,030	276,767	320,849	371,952
Working Age Group (%)	60.8	61.6	66.0	66.2	65.9	65.5
LFPR (%)	62.0	62.0	62.3	62.6	63.0	65.0
Total Employed	65,788	73,151	95,817	114,696	133,207	158,359
Total Workers (industry)	22,980	25,603	38,327	45,878	53,283	63,343
Industrial Workforce (%)	35.1	35.0	40.0	40.0	40.0	40.0
Total Workers Commercial	22,921	29,260	38,327	51,613	66,603	79,179
Commercial Workforce (%)	35.0	40.0	40.0	45.0	50.0	50.0
Total Workers (Other)	19,587	18,288	19,163	17,204	13,321	15,836
Other Workforce (%)	29.9	25.0	20.0	15.0	10.0	10.0

Note : LFPR = Labor Force Participation Rate

Table II-4 Employment Projections for Melaka

	1997	2000	2005	2010	2015	2020
Population of Study Area	323,859	367,323	431,192	499,744	550,876	593,766
Working Age Group (%)	62.4	62.4	65.7	66.0	65.8	65.4
LFPR (%)	64.9	64.9	66.0	67.0	68.0	68.9
Total Employed	134,635	148,757	186,973	220,987	246,484	267,555
Total Workers (industry)	51,656	59,503	80,399	99,444	110,918	120,400
Industrial Workforce (%)	38.3	40.0	43.0	45.0	45.0	45.0
Total Workers Commercial	53,854	62,478	82,268	101,654	113,383	123,075
Commercial Workforce (%)	40.0	42.0	44.0	46.0	46.0	46.0
Total Workers (Other)	29,216	26,776	24,307	19,889	22,184	24,080
Other Workforce (%)	21.7	18.0	13.0	9.0	9.0	9.0

Note : LFPR = Labor Force Participation Rate

Table II-5 Present Land Use (Sungai Petani)

River Basin	Sub-Basin No.	Total Area (ha)	Area for Each Land Use Category (ha)										
			Residential	Commercial	Industry	Institutional	Recreation	Natural	Paddy	Dry Crop	Road	Others	
Lalang	LA- 1	229								229			
	LA- 2	253								253			
	LA- 3	347							1	320		26	
	LA- 4	273								273			
	LA- 5	114							6	107			
	LA- 6	288	1		22				18	245		3	
	LA- 7	118	65		51	0					2		
	LA- 8	239	117			1	80			41			
	LA- 9	317	9	57	14	14			5	133	45	39	
	LA- 10	180	19		15	6				117	23		
	LA- 11	95	1						15	70	8		
sub total		2,453	213	57	102	22	80	45		1,789	77	68	
Tukang	TU- 1	135	105	12			5	6		2	6		
	TU- 2	145		0	20					115	9		
	TU- 3	49		2					47				
	TU- 4	18	2		0	1				14	1		
	TU- 5	209	29			179					1		
	TU- 6	89	1	6		59			16	5	1		
	TU- 7	148	16	16	18	1				109	4		
sub total		792	137	37	38	245	6	16	47	245	22		
Layar Besar	LB- 1	66	52	0			6			9			
	LB- 2	132	17				98			2	2		
	LB- 3	94	54	0			14			21	4		
	LB- 4	85	2				3		23	27	1		
sub total		377	124	1		121		37	29	59	7		
Che Bima	CB-1 1	125	19				4			95	1	5	
	CB-1 2	119	10						14	93	1	1	
	CB-1 3	83	29						35	11	8		
sub total		326	58			4		49	198	10	7		
S. Petani	PE- 1	160	38			6					117		
	PE- 2	28		0		25				3			
	PE- 3	143				109			1	33			
	PE- 4	141	1			134				4	1		
	PE- 5	41				6				18	1		
	PE- 6	96	21	9			20			17	27		
	PE- 7	132				26				106			
	PE- 8	78	11	0		27		17		9	7	6	
	PE- 9	48	3							28	17		
	PE- 10	82	13			1		19		3	44	2	
	PE- 11	62	45	1				2		6	7	3	
	PE- 12	155	81			22		8			43	2	
	PE- 13	76	25	0				4		2	43	3	
	PE- 14	113	76	0				0		7	11	19	
	PE- 15	32	27	1								4	
	PE- 16	90	79					1	2			5	
	PE- 17	55	21					5	1	1	21	6	
	PE- 18	46	26	0				0	1	0	13	6	
	PE- 19	198	64	1				2		1	114	15	1
	PE- 20	121	69	1				3	4	2	19	10	13
	PE- 21	21	18								0	3	
	PE- 22	43	24					0			19		
	PE- 23	71	56	2				0			0	13	
	PE- 24	118	70	2				30	2		1	9	5
	PE- 25	114	54	0				2		7	37	11	3
	PE- 26	108	83	8				10			6		
	PE- 27	45	8	16				0		0		14	6
	PE- 28	146	13			122						10	
	PE- 29	130	116	5				6		2		1	1
	PE- 30	91	21	5				39	7			19	
	PE- 31	39	19	7				1	0	5		7	
	PE- 32	270	176	8		71		7			9		
	PE- 33	195	99					18	1	2	56	10	8
	PE- 34	484	124	11				1		233	54	62	
sub total		3,772	1,483	75	548	195	18	255	220	720	230	28	
Pasir	PA- 1	76				39					36		
	PA- 2	361	18	62		54				227			
	PA- 3	136	73	3			7			50	4		
	PA- 4	240	75			46				46	61		
	PA- 5	105	92	6							7		
	PA- 6	144	119			15	10						
	PA- 7	391	157	1		12	4		24	46	147		
	PA- 8	227	55	2			10			18	142	0	
	PA- 9	176	139	1			16			2	19		
	PA- 10	488	15							173	299		
sub total		2,343	743	75	166	46		199	76	967	71		
grand total		10,063	2,758	245	853	634	103	601	570	3,789	415	97	

Table II-6 Present Land Use (Melaka)

River Basin	Sub-basin	Sub-Basin No.	Total Area (ha)	Area for Each Land Use Category (ha)									
				Residential	Commercial	Industry	Institutional	Recreation	Natural	Paddy/Dry Crop	Road	Others	
Leleh	Udang	UD- 1	385	79	1		0			290		9	5
		UD- 2	734	99		135	4		234	171	15	75	
	S. Gajah	UD- 3	402	252		74	0			43	10	23	
		GA- 1	583	18					39	494	9	24	
		GA- 2	134							124	4	5	
		GA- 3	102	28						49	5	19	
	Leleh	GA- 4	67	5						54	8	1	
		LE- 1	1,075	137	4	3	1			633	12	286	
	Sub-total			3,481	618	5	212	5	-	563	1,567	74	438
	Malim	Ayer Salak	AS- 1	848	5		219	2			469	10	143
AS- 2			337	20	1	24	0		74	8	210		
AS- 3			315	5	0	12	1		215	10	72		
AS- 4			168	16	2	4			105	7	35		
AH- 1			953	14	3	33	1		762	9	131		
Ayer Hitam		AH- 2	262	25		28			125	7	78		
		AH- 3	150	11					74	5	60		
		AH- 4	104	14	6		3		33	10	38		
		AH- 5	224	49				6	71	5	93		
		AH- 6	210	4			3		167	5	30		
Malim		MA- 1	464	34		132	0		153	9	136		
		MA- 2	226	42	3		3		137	4	37		
		MA- 3	276	23	1				198	6	47		
		MA- 4	416	100	4	48		1	155	10	97		
		MA- 5	240	49	0	1			151	9	29		
Sub-total			5,193	411	19	502	13	6	2,890	115	1,236		
Melaka (1)	Melaka	UM- 1	497	29		2	112			312	15	27	
		UM- 2	361	139	1	18	15		115	8	65		
		UM- 3	42	4	0	14				4	20		
Sub-total			900	167	5	20	141	-	-	427	28	113	
Melaka (2)	Melaka	ME- 1	80	8	2	10	2				6	51	
		ME- 2	389	84	3	10	37	5		87	20	142	
		ME- 3	225	67	9	31	6	2		19	8	85	
		ME- 4	86	40			8			1	4	32	
		ME- 5	236	49	4	63	37	1		48	8	26	
		ME- 6	240	109	7		27	1		71	10	15	
		ME- 7	45	25	5		4	2		5	3	1	
		ME- 8	183	70	18		1			64	8	22	
		ME- 9	225	64	6	1	1			135	11	8	
		ME- 10	143	81	3					40	7	13	
		ME- 11	52	18	4					15	6	8	
		ME- 12	33	15	2					5	3	8	
		ME- 13	51	23	3					13	5	8	
		ME- 14	43	19	8		6			6	3	0	
		ME- 15	86	44	18		5			3	7	9	
		ME- 16	100	33	3		18			2	9	34	
		ME- 17	110	23	43		1				5	38	
Sub-total			2,326	771	138	115	154	9	-	515	124	500	
Cheng	S. Bangsal	SB- 1	129	29		4				47	6	43	
		SB- 2	140	6		5			119	5	5		
	Arang	AR- 1	289	8					260	9	12		
		AR- 2	216	12	0	1	0	1	149	5	48		
		AR- 3	178	44					111	7	17		
	Jenuang	JN- 1	685						676	9			
		JN- 2	280		2	0			270	6	2		
		JN- 3	1,281	18	3	49			1,208	2			
		JN- 4	263	13		3	0		185	4	57		
	Cheng	CH- 1	229	19	2	1	8		100	10	90		
Sub-total			3,691	149	7	63	9	1	-	3,124	64	274	
Putat	Putat	PU- 1	231				5			54	9	163	
		PU- 2	68	2				28		4	7	27	
		PU- 3	91	5			58			14	6	9	
		PU- 4	203				16		26		12	149	
		PU- 5	100	1			38				3	59	
		PU- 6	336	111	3	109	50				5	58	
		PU- 7	366	77	29	66	4	47		50	7	86	
		PU- 8	560	233	1		43	22		45		215	
		PU- 9	356	116		10	16	85		1	7	121	
Sub-total			2,310	543	32	185	229	207	-	168	57	887	
Minor Basin		CD- 1	97	24	31		2		6		8	25	
		CD- 2	44	30	3		0				4	7	
		CD- 3	214	106	3	3		0		67	5	29	
		CD- 4	371	116	3	0	0	6		205	10	31	
		CD- 5	87	29						41	8	9	
		CD- 6	56	22						20	6	7	
		CD- 7	245	20						203	8	13	
		CD- 8	77	1		60				6	3	7	
		CD- 9	66			61					4		
Sub-total			1,256	348	40	125	3	12	-	542	57	128	
grand total			19,157	3,007	246	1,221	556	236	563	9,233	518	3,577	

Table II-7 Projected Land Use in the Year of 2020 (Sungai Petani)

River Basin	Sub-Basin No.	Total Area (ha)	Area for Each Land Use Category (ha)									
			Residential	Commercial	Industry	Institutional	Recreation	Natural	Paddy	Dry Crop	Road	Others
Lalang	LA- 1	229	59	2	69	0	77					23
	LA- 2	253	48	4	122	13	44					22
	LA- 3	347	151	105		18	26					46
	LA- 4	273	82	16	42	11	77					45
	LA- 5	114	46		47		10					11
	LA- 6	288	6	182	3	4	36					56
	LA- 7	118	86		13		3					17
	LA- 8	239	10	18		2	196					13
	LA- 9	317		153	73	29	12					51
	LA- 10	180	35	41	80							24
	LA- 11	95	45		25			24				
	sub total	2,453	567	522	475	77	480	24				308
Tukang	TU- 1	135	109	12		2						12
	TU- 2	145	66	16	44	15						3
	TU- 3	49	37	1		4						6
	TU- 4	18	5		7	2						4
	TU- 5	209	37	1		171						
	TU- 6	89	7	2	4	67						9
	TU- 7	148	112	20	1	1						13
	sub total	792	374	52	56	262						48
Layar Besar	LB- 1	66	59			7						
	LB- 2	132	44			84						3
	LB- 3	94	71			16						7
	LB- 4	85	70									15
	sub total	377	245			108						24
Che Bima	CB-1 1	125	118									7
	CB-1 2	119	113									5
	CB-1 3	83	79									4
	sub total	326	310									16
S. Petani	PE- 1	160	80		68							12
	PE- 2	28	25									3
	PE- 3	143	19		112							12
	PE- 4	141	14		114							13
	PE- 5	41	41									8
	PE- 6	96	59	9		20						7
	PE- 7	132	78		26	6		14				7
	PE- 8	78	40		5	15						17
	PE- 9	48	48									
	PE- 10	82	58			20	1					3
	PE- 11	62	56			6						
	PE- 12	155	145		8							3
	PE- 13	76	73			1						2
	PE- 14	113	92	5			4					12
	PE- 15	32	27			1						3
	PE- 16	90	80	0		1						9
	PE- 17	55	42			9						3
	PE- 18	46	37	2		0		2				4
	PE- 19	198	153					30				15
	PE- 20	121	101		5							14
	PE- 21	21	16	1				3				1
	PE- 22	43	43									
	PE- 23	71	50	4				6				11
	PE- 24	118	67	8			33					10
	PE- 25	114	92	4			6					12
	PE- 26	108	27	43		20		2				17
	PE- 27	45	8	17		0			6			13
	PE- 28	146	20	4	110							12
	PE- 29	130	105	2	17	1						5
	PE- 30	91	13	24		13		28				14
	PE- 31	39	0	23		0		5				10
	PE- 32	270	121	28	89	9						24
	PE- 33	195	149	21		18		6				
	PE- 34	484	153	126				56	77			72
	sub total	3,772	2,134	322	554	181	142	97				342
Pasir	PA- 1	76	49		26							
	PA- 2	361	292	14	54							
	PA- 3	136	71	50	10	6						
	PA- 4	240	32	7	141							60
	PA- 5	105	85	7								13
	PA- 6	144	122		8	1						12
	PA- 7	391	303	31	13	2		11				30
	PA- 8	227	162	26		9		30				
	PA- 9	176	154		12							10
	PA- 10	488	229	80				105				74
	sub total	2,343	1,499	215	265	18	145					200
grand total		10,063	5,130	1,111	1,350	647	622	266	-	-		938

Table II-8 Projected Land Use in the Year of 2020 (Melaka)

River Basin	Sub-basin	Sub-Basin No.	Total Area (ha)	Area for Each Land Use Category (ha)									
				Residential	Commercial	Industry	Institutional	Recreation	Natural	Paddy/Crop	Road	Others	
Leleh	Udang	UD- 1	385	26	0		347					7	5
		UD- 2	734	330	38	141	11		185		15	12	8
	S. Gajah	UD- 3	402	245	3	76	4				12	1	1
		GA- 1	583	420	2				39		119	2	1
		GA- 2	134	8							124	1	1
		GA- 3	102	54			1				43	3	2
	Leleh	GA- 4	67	16							49	1	1
		LE- 1	1,075	614	23	7	15				373	21	15
Sub-total			3,481	1,713	67	224	378	8	224	763	62	43	
Malim	Ayer Salak	AS- 1	848	217		534					47	30	20
		AS- 2	337	131		173	2				18	18	13
		AS- 3	315	112	10	89	1				87	10	7
	Ayer Hitam	AS- 4	168	125	3	5			1		34	1	
		AH- 1	953	778		88	1		1		64	12	9
		AH- 2	262	141		74					29	11	6
		AH- 3	150	85							51	9	7
		AH- 4	104	53		3	3				26	13	5
	Malim	AH- 5	224	182	6	7	6				3	14	6
		AH- 6	210	16			3		19		168	5	
		MA- 1	464	144	37	218	32		11		23	23	
		MA- 2	226	158	1		3		4		47	13	
		MA- 3	276	124			6		12		126	7	
		MA- 4	416	230	25	46			26			89	
		MA- 5	240	126	2		11		11		84	17	
Sub-total			5,193	2,622	83	1,237	56	84	-	765	273	73	
Melaka (1)	Melaka	UM- 1	497			316	106				62	12	1
		UM- 2	361	165	18	80	33					22	43
		UM- 3	42	25	4							12	1
Sub-total			900	190	22	397	139	-	-	62	45	45	
Melaka (2)	Melaka	ME- 1	80	29	10	32						4	5
		ME- 2	389	129	13		17				123	20	87
		ME- 3	225	156	8	27	6					4	24
		ME- 4	86	65	9		7					2	3
		ME- 5	236	97	4	54	37		0		3	24	17
		ME- 6	240	155	5		38					18	24
		ME- 7	45	24	7		8					4	3
		ME- 8	183	122	18		3		1			23	17
		ME- 9	225	189	6		3					16	12
		ME- 10	143	89	7		16					18	12
		ME- 11	52	37	2		3					5	4
		ME- 12	33	18	2		5					5	3
		ME- 13	51	40	1							6	4
		ME- 14	43	16	15		3					5	3
		ME- 15	86	43	23		6					9	6
		ME- 16	100	25	25		28		11			7	5
		ME- 17	110	66	66		10		9			14	10
Sub-total			2,326	1,235	219	113	190	22	-	126	183	239	
Cheng	S. Bangsal	SB- 1	129	103								19	8
		SB- 2	140	21	51	10	38		15			3	2
	Arang	AR- 1	289	54							227	7	2
		AR- 2	216	204	1		3					4	5
		AR- 3	178	94	48		5		21			6	4
	Jenuang	JN- 1	685	0		64					613	4	3
		JN- 2	280			115					162	2	1
		JN- 3	1,281	186	27	92	25				906	27	18
	Cheng	JN- 4	263	55	10	142	43					8	5
		CH- 1	229	56	1	86	24		3		1	24	35
Sub-total			3,691	773	137	509	138	40	-	1,909	103	83	
Putat	Putat	PU- 1	231		11		9				205	4	2
		PU- 2	68	3	5	1	13				42	3	2
		PU- 3	91	66	1		6				16	1	1
		PU- 4	203				2				165	2	1
		PU- 5	100	12			15				68	3	2
		PU- 6	336	145	3	107	12		16			38	13
		PU- 7	366	90	36	94	10		46		50	13	28
		PU- 8	560	331			26		25			38	115
		PU- 9	356	270		1	22					26	35
Sub-total			2,310	917	56	203	115	570	41	83	126	200	
Minor Basin		CD- 1	97	30			9					7	17
		CD- 2	44	26	3							12	4
		CD- 3	214	165	6							20	23
		CD- 4	371	328	15		4					7	17
		CD- 5	87	77	8							2	2
		CD- 6	56	50								5	5
		CD- 7	245	127				6		4		103	4
		CD- 8	77	3		71							3
		CD- 9	66			65							1
Sub-total			1,256	805	65	135	51	20	-	103	75	0	
grand total			19,157	8,255	649	2,818	1,066	743	265	3,811	868	682	