

**2.3.1 THAI MUANG RESORT DEVELOPMENT
PROJECT**

1. GENERAL CONTEXT

1.1 VILLAGE PROFILE

The village profile data were obtained by mean of interviews with village leaders.

1) TAMBON KHOK KLOI

Changwat Pang Nga
Amphoe Takua Thung

1. POPULATION

- 1) Total Population 11,200 persons
- 2) No. of Villages (Muban) 12 villages
- 3) No. of Households 2,000 - 3,000 households
- 4) Religion Buddhism 85% / Moslem 15% / Others %

2. MAJOR LAND USE

- 1) Total Area of Tambon rai (96 k.sq.m)
- 2) Composition of Land Use
 - a. Rubber 80%
 - b. Coconuts 20%
 - c. Forest %
 - d. Rice Field %
 - e. Dry Field %
 - f. Mining %
 - g. Others %

3. EMPLOYMENT

- 1) Agriculture %
- 2) Fishery %
- 3) Mining %
- 4) Commercial and Service %
- 5) Others 10%
 - Rubber 60%
 - Coconuts 20%

4. LAND OWNERSHIP

- 1) Governmental Land (Central / Local) 8,000 rai
- 2) Private Properties 80,000 rai
- 3) Open or Public Land

5. LAND PRICE

- 1) Beach Front 300,000 - 400,000 Bath/rai
- 2) Town or Village Center 200,000 Bath/rai

REMARKS

- 1) Potential and Constraints of Tourism Development
- 2) On - going / Planning Projects
- 3) Water and Other Tourist Infrastructure
- 4) Other

Village	No. of Households	No. of Voters
1	301	780
2	362	1,137
3	174	568
4	163	475
5	112	342
6	99	265
7	120	440
8	115	573
9	87	240
10	94	236
11	30	178
12	77	207

Source: Interviewed by Study Team

2) TAMBON NA TNAY

Changwat Pang Nga
Amphoe Thai Muang

1. POPULATION

- 1) Total Population 6,000 persons
- 2) No. of Villages (Muban) 9 villages
- 3) No. of Households 1,200 households
- 4) Religion Buddhism 70% / Moslem 30% / Others %

2. MAJOR LAND USE
- 1) Total Area of Tambon rai (km)
- 2) Composition of Land Use
- | | |
|---------------|------------------------------|
| a. Rubber | 20% |
| b. Coconuts | 5% |
| c. Forest | % |
| d. Rice Field | 60% |
| e. Dry Field | % |
| f. Mining | 10%: Not used for mining now |
| g. Others | % |
3. EMPLOYMENT
- | | |
|---------------------------|--|
| 1) Agriculture | 60-70% |
| 2) Fishery | quite a few % about 10 households (No pier is available) |
| 3) Mining | % |
| 4) Commercial and Service | small% |
| 5) Others | 10% |
| rice field | 30-40% |
4. LAND OWNERSHIP
- | | |
|--|--|
| 1) Governmental Land (Central / Local) | |
| 2) Private Properties | 80% Most of the land is belong to private. |
| 3) Open or Public Land | A place near mountain side has a national park, belongs to Royal Forestry. |
5. LAND PRICE
- | | |
|---------------------------|--------------------------|
| 1) Beach Front | 20,000 - 30,000 Bath/rai |
| 2) Town or Village Center | 40,000-50,000 Bath/rai |

REMARKS

- 1) Potential and Constraints of Tourism Development
- 2) On - going / Planning Projects: There is no projects.
- 3) Water and Other Tourist Infrastructure Piped water is just starting from Klokai irrigation.
- 4) Other
 Very small water fall (Rumpui) is exist in Tambon.
 Electricity is enough for local usage.
 Source: Interviewed by Study Team

3) TAMBON THAI MUANG

Changwer Pang Nga
 Amphone Thai Muang

1. POPULATION
- | | |
|----------------------------|-------------------------------------|
| 1) Total Population | 9,841 persons |
| 2) No. of Villages (Muban) | 8 villages |
| 3) No. of Households | 1,618 households |
| 4) Religion | Buddism 95% / Moslim 5% / Others -% |
2. MAJOR LAND USE
- 1) Total Area of Tambon 45,975 rai (km)
- 2) Composition of Land Use
- | | | | |
|-----------------|-------|------------|----------------------|
| a. Rubber} | | | |
| b. Coconuts} | 7.7% | 3,652 rai | |
| c. Forest | 63.5% | 30,419 rai | Others are also |
| d. Rice Field | 1.17% | 560 rai | Public 2.5% 1,200 ri |
| e. Dry Field % | | | |
| f. Mining % | | | |
| g. Others 25.7% | | 12,302 rai | |
3. EMPLOYMENT
- | | | |
|---------------------------|---|---------------------------------|
| | | Main Occupations are following; |
| 1) Agriculture | % | 1. Rubber |
| 2) Fishery | % | 2. Tin Mining |
| 3) Mining | % | 3. Employee |
| 4) Commercial and Service | % | |
| 5) Others | % | |
4. LAND OWNERSHIP
- | | |
|--|-----------|
| 1) Governmental Land (Central / Local) | |
| 2) Private Properties | |
| 3) Open or Public Land | 1,200 rai |
5. LAND PRICE
- | | | |
|---------------------------|------------------------|--------------------|
| 1) Beach Front | 100,000 Bath/rai | (63 bath/sq m) |
| 2) Town or Village Center | 40,000-50,000 Bath/rai | (25-31 bath/sq m.) |

REMARKS

- 1) Potential and Constraints of Tourism Development
- 2) On - going / Planning Projects
- 3) Water and Other Tourist Infrastructure
- 4) Other: More detailed data are available on HM3008, HM3012

Source: Interviewed by Study Team

2. LAND USE PLAN

2.1 MARKET FRAMEWORK FOR THE LAND USE PLANNING OF THE RESORT DEVELOPMENT IN PHANG NGA SOUTHWEST

1) ESTIMATION OF TOURIST VISITORS

Based on the "specific marketing targets for distribution of Required Room" in the Phuket cluster, a detailed analysis of the tourist flow to the Phang Nga Southwest Coastal area was made for land use planning. (See TABLE 2-30, 2-31, and 2-33)

a. The number of hotel guests on an average and peak day was calculated as follows;

- Number of hotel guests on an average day number of rooms projected x 1.8 (double
- Number of hotel guests on a peak day number of rooms projected x 1.8 x 100%

The table below show the number of hotel rooms projected and hotel guests of each tourist area on an average and on a peak day.

b. The number of tourist visitors who stay in certain tourist area to visit the other tourist area(s) on average and peak days is calculated by using the following chart. The tables before show the cross matrix of the tourist in-flow and out-flow among the tourist areas in the Phuket cluster by Phases.

TABLE 2-30 THAI MUANG RESORT PROJECT AREA ASSUMPTION

ROOM PROJECTION															
	1991			1996			2001			BEYOND			G. TOTAL		
	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL
PHT SOUTH	6,770	3,824	10,594	7,387	4,058	11,445	8,034	4,469	12,503	8,034	4,469	12,503	30,225	16,820	47,045
PHT NORTH	2,078	11	2,089	4,472	225	4,697	5,818	300	6,118	5,818	300	6,118	17,786	836	18,622
PHT TOWN	853	1,034	1,887	853	1,034	1,887	879	1,034	1,913	879	1,034	1,913	3,464	4,136	7,600
PHT OTHERS	126	183	309	126	183	309	126	183	309	126	183	309	504	732	1,236
PNG BAY	90	56	146	90	56	146	415	81	496	415	81	496	1,010	274	1,284
PNG WEST	0	0	0	1,460	508	1,968	4,815	553	5,368	4,815	553	5,368	11,090	1,612	12,702
PNG TOWN	0	403	403	0	403	403	0	403	403	0	403	403	0	1,612	1,612
KRABI	102	480	582	307	972	1,279	945	2,582	3,527	945	2,582	3,527	2,299	6,618	8,915
TOTAL	10,019	5,991	16,010	14,695	7,437	22,132	20,832	9,605	30,437	20,832	9,605	30,437	66,378	32,638	99,016

GUESTS EST. (AV)															
	1991			1996			2001			BEYOND			G. TOTAL		
	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL
PHT SOUTH	7,312	4,130	11,442	7,978	4,383	12,361	8,877	4,827	13,503	8,877	4,827	13,503	32,643	18,166	50,809
PHT NORTH	2,244	12	2,256	4,830	243	5,073	6,067	324	6,391	6,067	324	6,391	19,209	903	20,112
PHT TOWN	921	1,117	2,038	921	1,117	2,038	949	1,117	2,066	949	1,117	2,066	3,741	4,467	8,208
PHT OTHERS	136	198	334	136	198	334	136	198	334	136	198	334	544	791	1,335
PNG BAY	97	60	158	97	60	158	448	87	536	448	87	536	1,091	296	1,387
PNG WEST	0	0	0	1,577	546	2,123	5,200	597	5,797	5,200	597	5,797	11,977	1,741	13,718
PNG TOWN	0	435	435	0	435	435	0	435	435	0	435	435	0	1,741	1,741
KRABI	110	518	629	332	1,050	1,381	1,021	2,789	3,809	1,021	2,789	3,809	2,483	7,145	9,628
TOTAL	10,821	6,470	17,291	15,671	8,032	23,903	22,499	10,373	32,872	22,499	10,373	32,872	71,688	35,249	106,937

GUEST EST. (PK)															
	1991			1996			2001			BEYOND			G. TOTAL		
	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL	HIGH	LOW	TOTAL
PHT SOUTH	12,186	6,883	19,069	13,297	7,304	20,301	14,461	8,044	22,505	14,461	8,044	22,505	54,405	30,276	84,681
PHT NORTH	3,740	20	3,760	8,050	405	8,455	10,112	540	10,652	10,112	540	10,652	32,015	1,505	33,520
PHT TOWN	1,535	1,861	3,397	1,535	1,861	3,397	1,582	1,861	3,443	1,582	1,861	3,443	8,235	7,445	15,680
PHT OTHERS	227	329	556	227	329	556	227	329	556	227	329	556	907	1,318	2,225
PNG BAY	162	101	263	162	101	263	747	146	893	747	146	893	1,818	493	2,311
PNG WEST	0	0	0	2,628	911	3,539	8,667	995	9,662	8,667	995	9,662	19,992	2,902	22,894
PNG TOWN	0	725	725	0	725	725	0	725	725	0	725	725	0	2,902	2,902
KRABI	184	864	1,048	553	1,750	2,302	1,701	4,848	6,349	1,701	4,848	6,349	4,138	11,909	16,047
TOTAL	18,034	10,784	28,818	26,451	13,387	39,838	37,498	17,289	54,787	37,498	17,289	54,787	119,480	58,748	178,229

2) ESTIMATION OF LOCAL VISITORS (See TABLE 2-32)

The number of local visitors, who live in nearby provinces to visit the Phang Nga Resort area on average and peak days was calculated as follows;

a. Thai Muang

- 100% of the population in Phang Nga Province will visit the resort once a year
- 20% of the population in Phuket and Krabi Provinces will visit the resort once a year.
- Visitors share in Thai Muang area : 20%
- Number of the local visitors on an average day:
= (a + b) x 20% / 365 days
- Number of the local visitors on a peak days
= (a + b) x 20% x 1.08*

*) 12% (70% of the local visitors will be concentrated during peak 6 months) x 90% (70% of the above visitors will be concentrated on Saturday and Sunday) = 1.08

b. Khok Kloi

- 100% of the population in Phang Naga Province will visit the resort once a year
- 20% of the population in Phuket and Krabi Provinces will visit the resort once a year.
- Visitors share in Khok Kloi;
= 80%
- Number of the local visitors on an average day:
= (a + b) x 80% / 365 days
- Number of the local visitors on a peak days
= (a + b) x 80% x 1.08*

*) 12% (70% of the local visitors will be concentrated during peak 6 months) x 90% (70% of the above visitors will be concentrated on Saturday and Sunday) = 1.08

The Tables below show the results of the calculation:

TABLE 2-31 ESTIMATION OF LOCAL VISITORS

O.D. TRIP RATIO - PEAK DAY									
YEAR 1991									
DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	
ORIGIN									
PHT SOUTH	0.00	0.03	0.20	0.01	0.08	0.01	0.01	0.08	
PHT NORTH	0.15	0.00	0.18	0.01	0.08	0.01	0.01	0.05	
PHT TOWN	0.18	0.01	0.00	0.01	0.10	0.01	0.01	0.10	
PHT OTHERS	0.10	0.01	0.20	0.00	0.08	0.01	0.01	0.08	
PNG BAY	0.05	0.01	0.10	0.01	0.00	0.01	0.01	0.01	
PNG WEST	0.13	0.01	0.15	0.01	0.18	0.00	0.01	0.05	
PNG TOWN	0.05	0.01	0.05	0.01	0.15	0.03	0.00	0.01	
KRABI	0.05	0.01	0.05	0.01	0.08	0.01	0.01	0.00	

NO. OF TOURIST VISITORS - PEAK DAY									
YEAR 1991									
DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	TOTAL
ORIGIN									
PHT SOUTH	0	477	3,814	95	1,430	95	95	1,430	7,437
PHT NORTH	564	0	658	19	282	47	19	188	1,777
PHT TOWN	594	42	0	17	340	17	17	340	1,367
PHT OTHERS	56	3	111	0	42	7	3	42	263
PNG BAY	13	1	26	1	0	3	3	1	50
PNG WEST	0	0	0	0	0	0	0	0	0
PNG TOWN	36	4	36	4	109	18	0	4	210
KRABI	52	5	52	5	79	5	5	0	204
TOTAL	1,316	532	4,698	141	2,281	193	142	2,005	11,308

O.D. TRIP RATIO - PEAK DAY									
YEAR 1996									
DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	
ORIGIN									
PHT SOUTH	0.00	0.04	0.20	0.01	0.09	0.03	0.01	0.09	
PHT NORTH	0.15	0.00	0.18	0.01	0.09	0.06	0.01	0.06	
PHT TOWN	0.18	0.03	0.01	0.01	0.11	0.04	0.01	0.11	
PHT OTHERS	0.10	0.01	0.20	0.00	0.09	0.03	0.01	0.09	
PNG BAY	0.05	0.01	0.10	0.01	0.00	0.08	0.01	0.01	
PNG WEST	0.13	0.01	0.15	0.01	0.19	0.00	0.01	0.06	
PNG TOWN	0.05	0.01	0.05	0.01	0.16	0.13	0.00	0.01	
KRABI	0.05	0.01	0.08	0.01	0.09	0.01	0.01	0.00	

NO. OF TOURIST VISITORS - PEAK DAY									
YEAR 1998									
DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	TOTAL
ORIGIN									
PHT SOUTH	0	773	4,120	103	1,803	515	103	1,803	9,219
PHT NORTH	1,268	0	1,480	42	740	528	42	528	4,629
PHT TOWN	594	85	42	17	382	127	17	382	1,647
PHT OTHERS	56	7	111	0	49	14	3	49	288
PNG BAY	13	3	26	1	0	20	3	3	70
PNG WEST	442	44	531	18	664	0	44	221	1,964
PNG TOWN	36	9	36	4	118	91	0	9	303
KRABI	115	29	173	12	201	29	12	0	570
TOTAL	2,525	950	6,519	196	3,956	1,324	224	2,995	18,690

O.D. TRIP RATIO - PEAK DAY									
YEAR 2001									
DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	
ORIGIN									
PHT SOUTH	0.00	0.04	0.21	0.01	0.09	0.01	0.01	0.10	
PHT NORTH	0.15	0.00	0.19	0.01	0.09	0.05	0.01	0.08	
PHT TOWN	0.18	0.01	0.00	0.01	0.11	0.03	0.01	0.13	
PHT OTHERS	0.10	0.01	0.21	0.00	0.09	0.01	0.01	0.10	
PNG BAY	0.05	0.01	0.11	0.01	0.00	0.06	0.01	0.03	
PNG WEST	0.13	0.01	0.16	0.01	0.19	0.00	0.01	0.08	
PNG TOWN	0.05	0.01	0.06	0.01	0.16	0.11	0.00	0.03	
KRABI	0.05	0.01	0.06	0.01	0.09	0.11	0.01	0.00	

NO. OF TOURIST VISITORS - PEAK DAY									
YEAR 2001									
DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	TOTAL
ORIGIN									
PHT SOUTH	0	844	4,782	113	1,969	281	113	2,251	10,352
PHT NORTH	1,598	0	1,997	53	932	533	53	799	5,985
PHT TOWN	603	43	0	17	387	86	17	430	1,584
PHT OTHERS	56	7	118	0	49	7	3	56	295
PNG BAY	45	11	100	4	0	56	11	22	250
PNG WEST	1,208	121	1,570	48	1,812	0	121	725	5,604
PNG TOWN	36	9	45	4	118	82	0	18	312
KRABI	317	79	397	32	556	714	32	0	2,127
TOTAL	3,862	1,114	9,011	271	5,822	1,759	349	4,301	26,489

O.D. TRIP RATIO - AVERAGE DAY

YEAR 1991

DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI
PHT SOUTH	0.00	0.03	0.20	0.01	0.08	0.01	0.01	0.08
PHT NORTH	0.15	0.00	0.18	0.01	0.08	0.01	0.01	0.05
PHT TOWN	0.18	0.01	0.00	0.01	0.10	0.01	0.01	0.10
PHT OTHERS	0.10	0.01	0.20	0.00	0.08	0.01	0.01	0.08
PNG BAY	0.05	0.01	0.10	0.01	0.00	0.01	0.01	0.01
PNG WEST	0.13	0.01	0.15	0.01	0.18	0.00	0.01	0.05
PNG TOWN	0.05	0.01	0.05	0.01	0.15	0.03	0.00	0.01
KRABI	0.05	0.01	0.05	0.01	0.08	0.01	0.01	0.00

NO. OF TOURIST VISITORS - AVERAGE DAY

YEAR 1991

DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	TOTAL
PHT SOUTH	0	286	2,288	57	858	57	57	858	4,462
PHT NORTH	338	0	395	11	169	28	11	113	1,066
PHT TOWN	357	25	0	10	204	10	10	204	820
PHT OTHERS	33	2	67	0	25	4	2	25	158
PNG BAY	8	1	16	1	0	2	2	1	30
PNG WEST	0	0	0	0	0	0	0	0	0
PNG TOWN	22	2	22	2	65	11	0	2	126
KRABI	31	3	31	3	47	3	3	0	123
TOTAL	790	319	2,819	85	1,369	116	85	1,203	6,785

O.D. TRIP RATIO - AVERAGE DAY

YEAR 1996

DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI
PHT SOUTH	0.00	0.04	0.20	0.01	0.09	0.03	0.01	0.09
PHT NORTH	0.15	0.00	0.18	0.01	0.09	0.06	0.01	0.06
PHT TOWN	0.18	0.03	0.01	0.01	0.11	0.04	0.01	0.11
PHT OTHERS	0.10	0.01	0.20	0.00	0.09	0.03	0.01	0.09
PNG BAY	0.05	0.01	0.10	0.01	0.00	0.08	0.01	0.01
PNG WEST	0.13	0.01	0.15	0.01	0.19	0.00	0.01	0.06
PNG TOWN	0.05	0.01	0.05	0.01	0.16	0.13	0.00	0.01
KRABI	0.05	0.01	0.06	0.01	0.09	0.01	0.01	0.00

O.D. TRIP RATIO - AVERAGE DAY

YEAR 1996

DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	TOTAL
PHT SOUTH	0	429	2,288	57	1,001	286	57	1,001	5,120
PHT NORTH	338	0	395	11	197	141	11	141	1,235
PHT TOWN	357	51	25	10	229	76	10	229	988
PHT OTHERS	33	4	67	0	29	8	2	29	173
PNG BAY	8	2	16	1	0	12	2	2	42
PNG WEST	0	0	0	0	0	0	0	0	0
PNG TOWN	22	5	22	2	71	54	0	5	182
KRABI	31	8	47	3	55	8	3	0	156
TOTAL	790	499	2,860	85	1,583	586	85	1,408	7,896

O.D. TRIP RATIO - AVERAGE DAY

YEAR 2001

DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI
PHT SOUTH	0.00	0.04	0.21	0.01	0.09	0.01	0.01	0.10
PHT NORTH	0.15	0.00	0.19	0.01	0.09	0.05	0.01	0.08
PHT TOWN	0.18	0.01	0.00	0.01	0.11	0.03	0.01	0.13
PHT OTHERS	0.10	0.01	0.21	0.00	0.09	0.01	0.01	0.10
PNG BAY	0.05	0.01	0.11	0.01	0.00	0.06	0.01	0.03
PNG WEST	0.13	0.01	0.16	0.01	0.19	0.00	0.01	0.08
PNG TOWN	0.05	0.01	0.06	0.01	0.16	0.11	0.00	0.03
KRABI	0.05	0.01	0.06	0.01	0.09	0.11	0.01	0.00

O.D. TRIP RATIO - AVERAGE DAY

YEAR 2001

DESTINATION	PHT SOUTH	PHT NORTH	PHT TOWN	PHT OTHERS	PNG BAY	PNG WEST	PNG TOWN	KRABI	TOTAL
PHT SOUTH	0	506	2,869	68	1,182	169	68	1,350	6,211
PHT NORTH	959	0	1,198	32	559	320	32	479	3,579
PHT TOWN	362	26	0	10	232	52	10	258	950
PHT OTHERS	33	4	71	0	29	4	2	33	177
PNG BAY	27	7	60	3	0	33	7	13	150
PNG WEST	725	72	942	29	1,087	0	72	435	3,363
PNG TOWN	22	5	27	2	71	49	0	11	187
KRABI	190	48	238	19	333	429	19	0	1,276
TOTAL	2,317	669	5,406	163	3,493	1,055	210	2,580	15,894

3) ESTIMATION OF NEIGHBORING VISITORS

The number of neighboring visitors who live in nearby villages to visit the Phang Nga Resort area on average and peak days was calculated as follows;

a. Thai Muang

- 100% of the populations in Ampoe Thai Muang and Takua Thung will visit the resort once a year
- 20% of the populations in the other Ampoe(s) in Phang Nga Province will visit the resort once a year.
- Visitors share in Thai Muang area
= 40%
- Number of the neighboring visitors on an average day.
(a + b) x 40% / 365 days
- Number of the neighboring visitors on a peak day;
=(a + b) x 40% x 1.08*

*) 12% (70% of the local visitors will be concentrated during peak 6 months) x
90% (70% of the above visitors will be concentrated on Saturday and Sunday) =
1.08

b. Khok Kloi

- 100% of the populations in Ampoe Thai Muang and Takua Thung will visit the resort once a year
- 20% of the populations in the other Ampoe(s) in Phang Nga Province will visit the resort once a year.
- Visitors share in Khok Kloi
= 60%
- Number of the neighboring visitors on an average day.
(a + b) x 60% / 365 days
- Number of the neighboring visitors on a peak day;
=(a + b) x 60% x 1.08*

The tables below show the results of the calculation

TABLE 2-32 ESTIMATION OF NEIGHBORING VISITORS

THAI MUANG LOCAL VISITORS					KHOK KLOI LOCAL VISITORS				
	1991	1996	2001	2006		1991	1996	2001	2006
PHUKET	164,000	178,000	189,000	199,000	PHUKET	164,000	178,000	189,000	199,000
20%X20%	6,560	7,120	7,560	7,960	20%X20%	26,240	28,480	30,240	31,840
PHANG NGA	223,000	248,000	268,000	286,000	PHANG NGA	223,000	248,000	268,000	286,000
100%X20%	44,600	49,600	53,600	57,200	100%X20%	178,400	198,400	214,400	228,800
KRABI	311,000	359,000	401,000	436,000	KRABI	311,000	359,000	401,000	436,000
20%X20%	12,440	14,360	16,040	17,440	20%X20%	49,760	57,440	64,160	69,760
TOTAL	63,600	71,080	77,200	82,600	TOTAL	254,400	284,320	308,800	330,400

NBG VISITORS					NBG VISITORS				
	1991	1996	2001	2006		1991	1996	2001	2006
THAI MUANG	40,000	45,000	48,000	51,000	THAI MUANG	40,000	45,000	48,000	51,000
AX100%X40%	16,000	18,000	19,200	20,400	AX100%X40%	24,000	27,000	28,800	30,600
TAKUA THUNG	40,000	45,000	48,000	52,000	TAKUA THUNG	40,000	45,000	48,000	52,000
AX100%X40%	16,000	18,000	19,200	20,800	AX100%X40%	24,000	27,000	28,800	31,200
OTHERS	143,000	158,000	172,000	183,000	OTHERS	143,000	158,000	172,000	183,000
AX100%X40%	11,440	12,640	13,760	14,640	AX100%X40%	17,160	18,960	20,640	21,960
TOTAL	43,440	48,640	52,160	55,840	TOTAL	65,160	72,960	78,240	83,760

4) ESTIMATION OF TOTAL USERS

The following table show the results of the calculation for the total users of Thai Muang and Khok Kloi resort areas on average and peak day.

TABLE 2-33 ESTIMATION OF TOTAL USERS

TOURIST VISITORS - THAI MUANG/KHOK KLOI				
YEAR	1991	1996	2001	2006
GUEST HIGH(AV)	0	1,577	5,200	5,200
GUEST HIGH(PK)	0	2,628	8,667	8,667
GUEST LOW(AV)	0	546	597	597
GUEST LOW(PK)	0	911	995	995
GUEST ALL(AV)	0	2,123	5,797	5,797
GUEST ALL(PK)	0	3,539	9,662	9,662
TRT VISIT(AV)	116	586	1,055	1,055
TRT VISIT(PK)	193	1,324	1,759	1,759
LCL VISIT(AV)	174	195	212	226
LCL VISIT(PK)	69	77	83	89
NGB VISIT(AV)	1,428	1,599	1,715	1,836
NGB VISIT(PK)	2,346	2,627	2,817	3,015
TLE VISIT(AV)	1,718	2,380	2,982	3,117
TLE VISIT(PK)	2,607	4,027	4,659	4,863
TLE USERS(AV)	1,718	4,503	8,779	8,915
TLE USERS(PK)	2,607	7,566	14,321	14,526

2.2 LAND USE AREA REQUIREMENT FOR THE RESORT DEVELOPMENT IN PHANG NGA SOUTHWEST COAST

This study aims to calculate the minimum area requirement for the land use planning of development area. The minimum area requirements by each land use item are examined based on the following assumptions and calculation methods:

1) HOTEL ACCOMMODATION

a. Accommodation site area is calculated based on the No. of rooms or units per hector density by type of accommodation as follows;

- Hotel Type 40 rooms/ha
- Villa Type 10 units/ha

2) COMMERCIAL

Commercial floor and site areas are calculated by the following methods:

a. Assumption of the tourist's expenditure for commercial services taking in the commercial areas outside the hotel sites are made as follows;

- a) 20% of the hotel quests projected x 300 Bahts/day
- b) 20% of the losmen quests projected x 200 Bahts/day
- c) 60% of the tourist visitors projected x 100 Bahts/day
- d) 80% of the local and neighboring visitors projected x 50 Bahts/day
- e) Sum of a) - d)(A)

b. Sales per unit area

- a) The share of wages in gross sales is assumed as 20%.
- b) The average of wages of employee is estimated as 3,750 Bahts/Month
- c) The floor area per employee is assumed as 8 sq.m.

The sales per unit area per day is calculated as
 $3,750 \times 12 / 20\% / 365 = 77.05 \text{ Bahts/sq.m/employee/day}$ (B)

c. Calculation of the total area required for all users

(A) / (B)(C)

d. Calculation of the total site area requirement

(C) / 0.25 (building coverage ratio)(D)

3) ADMINISTRATION AND PUBLIC SERVICE

Administration and public services floor and site areas are calculated as follows:

a. Assumption of the users is made as follows:

- a) No. of hotel quests on peak day
- b) No. of total visitors x 50%
- c) Total users = a + b(A)

b. Calculation of the total floor area required is made as follow

(A) x 0.2 sq.m.(B)

c. Calculation of the total site area requirement;

(B) x 0.25 (building coverage ratio)

Note: Administration and public services include administration office, medical care, nursery, baby-sitter, dentist, post office, fire station, etc.

4. RECREATION, CULTURE AND SPORTS

Recreation, culture and sports floor and site areas are calculated as follows:

a. Assumption of the participation ratio to these activities of the tourists;

- a) All guests projected (= no. of beds projected)
- b) 50% of the tourist visitors projected on a peak day
- c) 10% of the local and neighboring visitors projected on a peak day

b. Calculation of the floor area required for all users;

Number of all users in an average day x 0.6 sq.m.*1)(A)

c. Calculation of the site area requirement;

(A) x 0.05*1) (building coverage ratio)(B)

Note: Recreation, culture and sports include cinema, multi-purpose hall, open air theater, library, youth center, dancing night club, playground, basketball, volleyball, tennis, sports hall, swimming pool, horseback riding, mini-golf, etc.

5) PUBLIC PARKING AREA IS CALCULATED AS FOLLOWS

a. Assumption of type of vehicles by type of users;

b. Calculation of parking area requirement;

- a) Number of the tourist visitors x (A)
- b) Number of the local/Neighboring visitors x (B)
- c) Number of the hotel guests x (C)

c. Calculation of the parking area

= (A) + (B) + (C)

6) BEACH

Calculation of the area requirement is based on the following standards for beach capacity*1);

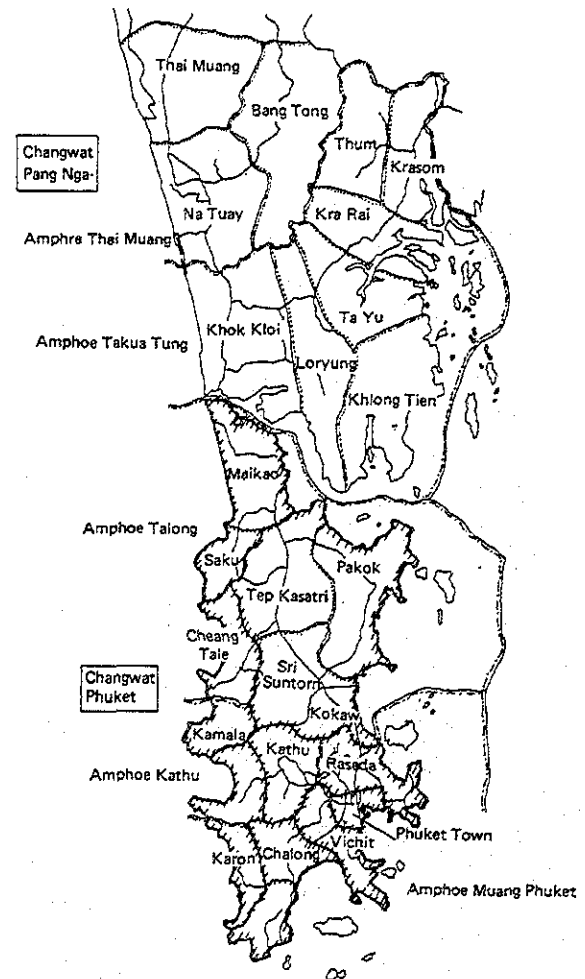
- a) No. of total users on a peak day x 20 sq.m / 2 (rotation) for Khok Kloi
- b) No. of total users on a peak day x 30 sq. m / 2 (rotation) for Thai Muang

TABLE 2-34 AREA REQUIREMENT BY BEACH AREA TYPE (FLOOR AREA)

m ² per person	persons per meter of coast			meter of coast per person		
	Depth of beach			depth of beach		
	20m	33m	55m	20m	33m	55m

Notes: *1) The source of these standards is "Tourism and Recreation Development-A handbook of physical planning" by Fred Lawson and Manuel Baud-Bovy. Hotel guests and losmen guests using the accommodations in the resort area which is the subject of the area calculation study. Visitor refers to the tourist visitors who are the guests of a hotel or losmen in another tourist areas including resorts and towns and local visitors who are the people of Lombok in general and the neighboring people who live in the adjacent area to the resort area.

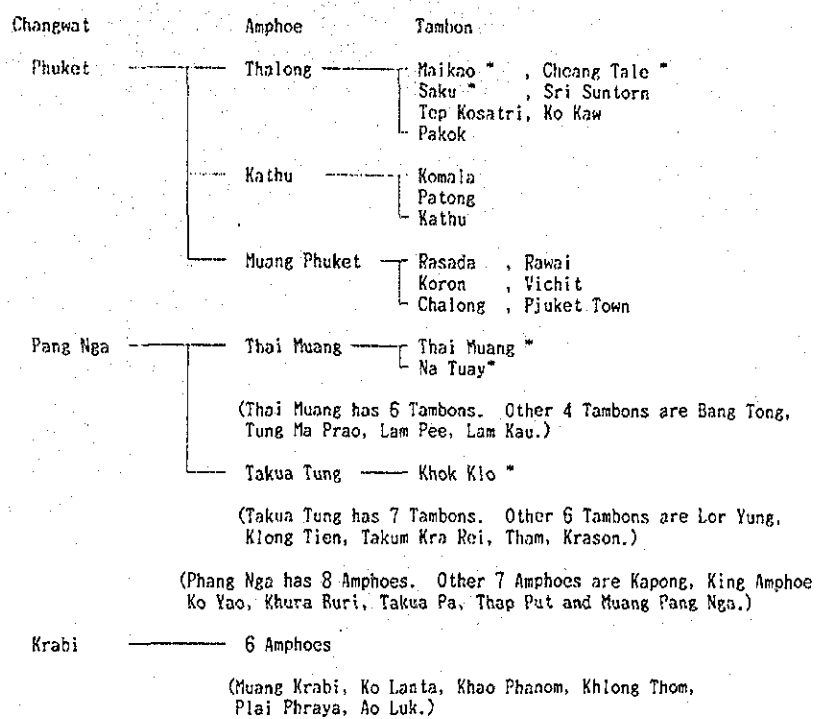
BOUNDARY MAP OF EACH TAMBON



Legend
 - - - - - boundary of Amphoe
 - - - - - boundary of Tambon
 = = = = = road
 / / / / / DTCP Planning boundary

Population Profile of Study Area

1) Name list of Tambon, Amphoe, Changwat



2) Population Estimation of Amphoe

Changwat, Amphoe, Tambon	Year	1980 (CENSUS)	1987 (NSO)	1991 (Estimation)	1996	2000	2001	2006	2011	2015
Phuket		130,896	151,716	164,000	178,000	187,000	189,000	199,000	207,000	212,000
Muang Phuket		79,456	92,000	99,000	108,000	114,000	115,000	121,000	126,000	129,000
Kathu		12,621	15,000	16,000	17,000	18,000	18,000	19,000	19,000	20,000
Thalong		38,915	45,000	49,000	53,000	56,000	56,000	59,000	62,000	63,000
Cheang Tale		9,000	10,400	11,300	12,200	12,900	12,900	13,600	14,300	14,600
Saku		3,300	3,800	4,200	4,500	4,800	4,800	5,000	5,200	5,400
Maikao		6,900	8,000	8,700	9,400	9,900	9,900	10,400	11,000	11,200
Phang Nga		170,299	202,067	223,000	248,000	264,000	268,000	286,000	301,000	313,000
Muang Phang Nga		25,810	31,000	34,000	38,000	40,000	41,000	43,000	46,000	48,000
Kapong		10,007	12,000	13,000	15,000	16,000	16,000	17,000	18,000	18,000
King Amphoe Ko Yao		8,197	10,000	11,000	12,000	13,000	13,000	14,000	14,000	15,000
Khura Buri		11,915	14,000	16,000	17,000	18,000	19,000	20,000	21,000	22,000
Takua Thung		30,659	36,000	40,000	45,000	48,000	48,000	52,000	54,000	56,000
Khok Kloi			10,100	11,200	12,500	13,500	13,500	14,500	15,200	15,700
Takua Pa		37,944	45,000	49,000	54,000	58,000	59,000	63,000	67,000	70,000
Thap Put		15,108	18,000	20,000	22,000	23,000	24,000	25,000	27,000	28,000
Thai Muang		30,659	36,000	40,000	45,000	48,000	48,000	51,000	54,000	56,000
Thai Muang			9,841	10,900	12,300	13,100	13,100	13,900	14,700	15,300
Na Tuay			8,600	9,600	10,800	11,500	11,500	12,200	12,900	13,400
Krabi		216,167	272,365	311,000	359,000	392,000	401,000	436,000	465,000	487,000

*1 Village Profile
 *2 D.T.C.P. data (1984) shows population of Saku and Maikao Community. It divided each Tambon according to the proportion of no. of voters of each Tambon.
 *3 It comes from Population of Changwat divided by same proportion of 1980's census.
 *4 It is calculated by the no. of voters.
 *5 Tambon Thai Muang data

TABLE 2-35 THAI MUANG LAND USE AREA REQUIREMENT (FLOOR AREA)

THAI MUANG (AVERAGE DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	124,100	379,780	379,780
COMMERCIAL	202	1,774	4,644	4,631
BEACH	0	0	0	0
RECREATION	49	1,202	3,308	3,295
PUBLIC/ADMINISTRATION	40	401	1,095	1,092
PUBLIC PARKING	0	0	0	0
TOTAL	291	127,477	388,827	388,798

THAI MUANG (PEAK DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	124,100	379,780	379,780
COMMERCIAL	543	3,429	7,989	8,023
BEACH	0	0	0	0
RECREATION	105	1,993	5,364	5,369
PUBLIC/ADMINISTRATION	106	743	1,874	1,881
PUBLIC PARKING	0	0	0	0
TOTAL	753	130,266	395,006	395,053

TABLE 2-36 THAI MUANG LAND USE AREA REQUIREMENT (SITE AREA)

THAI MUANG (AVERAGE DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	365,000	1,117,000	1,117,000
COMMERCIAL	810	7,096	18,575	18,525
BEACH	1,065	46,229	136,516	135,766
RECREATION	977	24,047	66,155	65,893
PUBLIC/ADMINISTRATION	159	1,604	4,382	4,369
PUBLIC PARKING	1,717	8,697	18,783	18,792
TOTAL	4,728	452,673	1,361,411	1,360,346

THAI MUANG (PEAK DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	365,000	1,117,000	1,117,000
COMMERCIAL	2,170	13,718	31,954	32,092
BEACH	2,626	49,836	134,109	134,222
RECREATION	2,101	39,869	107,287	107,377
PUBLIC/ADMINISTRATION	422	2,974	7,494	7,524
PUBLIC PARKING	3,865	18,524	32,524	32,715
TOTAL	11,184	489,920	1,430,369	1,430,930

TABLE 2-37 KHOK KLOI LAND USE AREA REQUIREMENT (FLOOR AREA)

KHOK KLOI (AVERAGE DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	43,010	379,780	379,780
COMMERCIAL	417	786	1,179	1,213
BEACH	0	0	0	0
RECREATION	56	595	888	907
PUBLIC/ADMINISTRATION	89	213	311	318
PUBLIC PARKING	0	0	0	0
TOTAL	562	44,603	382,158	382,218

KHOK KLOI (PEAK DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	43,010	379,780	379,780
COMMERCIAL	1,517	2,255	2,963	3,090
BEACH	0	0	0	0
RECREATION	188	790	1,246	1,261
PUBLIC/ADMINISTRATION	306	535	710	736
PUBLIC PARKING	0	0	0	0
TOTAL	2,012	46,591	384,699	384,868

TABLE 2-38 KHOK KLOI LAND USE AREA REQUIREMENT (SITE AREA)

KHOK KLOI (AVERAGE DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	365,000	1,117,000	1,117,000
COMMERCIAL	1,669	3,142	4,715	4,854
BEACH	922	922	18,978	19,053
RECREATION	1,120	11,893	17,757	18,130
PUBLIC/ADMINISTRATION	355	852	1,244	1,274
PUBLIC PARKING	1,644	2,719	3,619	3,753
TOTAL	5,709	384,529	1,163,314	1,164,064

KHOK KLOI (PEAK DAY)	1991 sq.m.	1996 sq.m.	2001 sq.m.	2006 sq.m.
ACCOMMODATION	0	365,000	1,117,000	1,117,000
COMMERCIAL	6,070	9,020	11,851	12,361
BEACH	3,137	13,169	20,766	21,025
RECREATION	3,765	15,803	24,920	25,229
PUBLIC/ADMINISTRATION	1,224	2,141	2,841	2,944
PUBLIC PARKING	5,473	6,118	6,637	7,101
TOTAL	19,669	411,251	1,184,015	1,185,661

TABLE 2-39 THAI MUANG PUBLIC PARKING FOR VISITORS

THAI MUANG	TOURIST VISITORS			LOCAL & NEIGHBOURING VISITORS			HOTEL GUESTS		
	SHARE	FORMULA	PS/P	SHARE	FORMULA	PS/P	SHARE	FORMULA	PS/P
TYPE OF VEHICLES									
1) PRIVATE CAR(4 persons)	10%	10 % / 4 persons	0.02500	20%	20 % / 4 persons	0.05000	5%	5 % / 4 persons	0.01250
2) HIRED CAR(2 persons)	55%	55 % / 2 persons	0.27500	5%	5 % / 2 persons	0.02500	10%	10 % / 2 persons	0.05000
3) CHARTERED BUS(40 persons)	10%	10 % / 40 persons	0.00250	10%	10 % / 40 persons	0.00250	0%	0 % / 40 persons	0.00000
4) ROUTE BUS(-)	25%	10 % / 40 persons	0.00625	50%	50 % / 40 persons	0.01250	30%	30 % / 40 persons	0.00750
5) WALKING	0%	-	-	0%	-	-	70%	-	0.70000
REQUIRED PARKING SPACE	1)+2)=(a)		0.3	1)+2)=(a)		0.075	1)+2)=(a)		0.0625
FOR SEDAN	(a) x 30 sq.m.=(b)		9.00000	(a) x 30 sq.m.=(b)		2.25000	(a) x 30 sq.m.=(b)		1.87500
	3)=(c)		-	3)=(c)		-	3)=(c)		-
FOR BUS	(c) x 150 sq.m.		0.30000	(c) x 150 sq.m.		0.30000	(c) x 150 sq.m.		0.00000
TOTAL	(b)+(c)		9.30000	(b)+(c)		2.55000	(b)+(c)		1.87500

Note: PS/P Parking Space per Person

TABLE 2-40 KHOK KLOI PUBLIC PARKING FOR VISITORS

KHOK KLOI	TOURIST VISITORS			LOCAL & NEIGHBOURING VISITORS			HOTEL GUESTS		
	SHARE	FORMULA	PS/P	SHARE	FORMULA	PS/P	SHARE	FORMULA	PS/P
TYPE OF VEHICLES									
1) PRIVATE CAR(4 persons)	10%	10 % / 4 persons	0.02500	10%	10 % / 4 persons	0.02500	5%	10 % / 4 persons	0.01250
2) HIRED CAR(2 persons)	30%	30 % / 2 persons	0.15000	5%	5 % / 2 persons	0.02500	5%	5 % / 2 persons	0.02500
3) CHARTERED BUS(40 persons)	20%	20 % / 40 persons	0.00500	10%	10 % / 40 persons	0.00250	0%	10 % / 40 persons	0.00000
4) ROUTE BUS(-)	50%	50 % / 40 persons	0.01250	60%	60 % / 40 persons	0.01500	20%	60 % / 40 persons	0.00500
5) WALKING	0%	-	-	0%	-	-	70%	-	0.70000
REQUIRED PARKING SPACE	1)+2)=(a)		0.175	1)+2)=(a)		0.05	1)+2)=(a)		0.0375
FOR SEDAN	(a) x 30 sq.m.=(b)		5.25000	(a) x 30 sq.m.=(b)		1.50000	(a) x 30 sq.m.=(b)		1.12500
	3)=(c)		-	3)=(c)		-	3)=(c)		-
FOR BUS	(c) x 150 sq.m.		0.60000	(c) x 150 sq.m.		0.30000	(c) x 150 sq.m.		0.00000
TOTAL	(b)+(c)		5.85000	(b)+(c)		1.80000	(b)+(c)		1.12500

Note: PS/P Parking Space per Person