Table B-4-3 SOLID WASTE DISPOSAL

<1st Stage>

Items	Description Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
		F/C	L/C	Total		F/C	L/C	Total	
1. Landfiling Tip	m³	1,500	3,500	5,000	3,600	5	13	18	-Impermeable layer -Leachate treatment facility -Civil work

<Total>

Items	Description Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
		F/C	L/C	Total		F/C	L/C	Total	
1. Landfiling Tip	m³	1,500	3,500	5,000	7,200	11	25	36	-Impermeable layer -Leachate Treatment -Civil Work

B.40

Table B-4-4 ELECTRICITY (CONNECTION CHARGE)

<1st Stage>

Items	Description Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
		F/C	L/C	Total		F/C	L/C	Total	
1. Connection Charge	KVA	–	125	125	3,150	–	390	390	
2. Street Lighting	unit	–	500,000	500,000	330	–	165	165	1 unit/50 m x 16.6 km = 330 units
Total						–	555	555	

<Total>

Items	Description Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
		F/C	L/C	Total		F/C	L/C	Total	
1. Connection Charge	KVA	–	125	125	5,370	–	670	670	
2. Street Lighting	unit	–	500,000	500,000	500	–	250	250	1 unit/50 m x 24.5 km = 500 units
Total						–	920	920	

B.41

Table B-4-5 ELECTRICITY (WORK OF PLN)

<1st Stage>

Items	Description	Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
			F/C	L/C	Total		F/C	L/C	Total	
1. TL Line	70 KV	m	55,000	55,000	110,000	100,000	5,500	5,500	11,000	
2. Sub Station		unit	-	-	-	1	540	60	600	
3. Distribution line	6 KV	m	10,000	10,000	20,000	8,000	80	80	160	
4. Street Lighting		unit	-	500,000	500,000	330	-	165	165	1 unit/50 m x 16,600 m = 330 units
Total							6,120	5,805	11,925	

Note: This is the construction cost of total electricity supply facility that can be constructed by PLN.

<Total>

Items	Description	Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
			F/C	L/C	Total		F/C	L/C	Total	
1. Transmission line	70 KV	m	55,000	55,000	110,000	100,000	5,500	5,500	11,000	
2. Sub Station		unit	-	-	-	1	540	60	600	
3. Distribution Line	6 KV	m	10,000	10,000	20,000	11,000	110	110	220	
4. Street Lighting		unit	-	500,000	500,000	500	-	250	250	1 unit/50 m x 24,500 = 500 units
Total							6,150	5,920	12,070	

Note: This is the construction cost of total electricity supply facility that can be constructed by PLN.

Table B-4-6 WATER SUPPLY

<1st Stage>

Items	Description	Unit	Unit Cost (Rp.) F/C	L/C	Total	Quantity	Total Cost (Rp. 10⁶) F/C	L/C	Total	Remarks
1. Treatment Plant		unit	–	–	–	1	380	–	380	
2. Intake water		unit	–	–	–	1	7	63	70	
3. Distribution Basin		unit	–	–	–	2	10	90	100	
4. Water Conveyance Pipe	ø250 PVC	m	4,700	42,300	47,000	2,000	9	85	94	
	ø250 steel pipe	m	7,000	63,000	70,000	19,000	133	1,197	1,330	Ciseukeut River- Tanjung Jaya
5. Distribution Pipe	ø200 PVC	m	4,000	36,000	40,000	1,850	7	67	74	
	ø150 PVC	m	2,700	24,300	27,000	2,200	6	53	59	
	ø100 PVC	m	1,500	13,500	15,000	3,700	6	50	56	
6. Booster Pump		unit	10	–	10	1	10	–	10	
7. Others	Hydrant	unit	–	17	17	1	–	17	17	
Total							568	1,622	2,190	

<Total>

Items	Description	Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
			F/C	L/C	Total		F/C	L/C	Total	
1. Treatment Plant		unit	-	-	-	1	570	-	570	
2. Intake Water		unit	-	-	-	1	7	63	70	
3. Distribution Basin & Pump		unit	-	-	-	3	15	135	150	
4. Water Conveyance Pipe	ø250 PVC	m	4,700	42,300	47,000	2,000	9	85	94	
	ø200 PVC	m	4,000	36,000	40,000	1,000	4	36	40	
	ø250 steel pipe	m	7,000	63,000	70,000	19,000	133	1,197	1,330	Ciseukeut River- Tanjung Jaya
5. Distribution Pipe	ø200 PVC	m	4,000	36,000	40,000	1,850	7	67	74	
	ø150 PVC	m	2,700	24,300	27,000	2,700	7	66	73	
	ø100 PVC	m	1,500	13,500	15,000	5,200	8	70	78	
6. Booster Pump		unit	10	-	10	2	20	-	20	
7. Others	Hydrant	unit	-	30	30	1	-	30	30	
Total							780	1,749	2,529	

B.44

Table B-4-7　TELEPHONE　(PERUMTEL'S WORK)

<1st Stage>

Items	Description Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
		F/C	L/C	Total		F/C	L/C	Total	
1. Exchange	Terminal unit	-	-	-	1	120	20	140	Radio concentrator system
2. Distribution Cable	line	980,000	220,000	1,200,000	30	30	10	40	
Total						150	30	180	

Note: This is the construction cost of total telephone facility that can be constructed by PERUMTEL.

<Total>

Items	Description Unit	Unit Cost (Rp.)			Quantity	Total Cost (Rp. 10^6)			Remarks
		F/C	L/C	Total		F/C	L/C	Total	
1. Exchange	Terminal unit	-	-	-	1	161	29	190	Radio concentrator system
2. Distribution Cable	line	980,000	220,000	1,200,000	50	49	11	60	
Total						210	40	250	

Note: This is the construction cost of total telephone facility that can be constructed by PERUMTEL.

B.45

Table B-4-8 LOCAL AND FOREIGN CURRENCY PORTION OF CONSTRUCTION COST (BEACH RESORT)
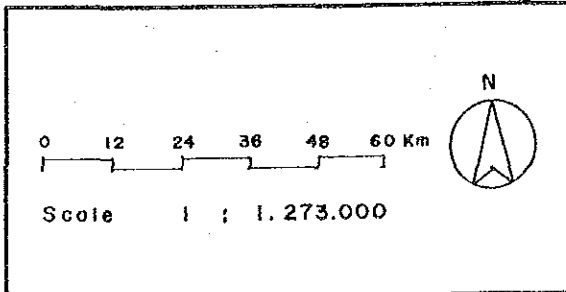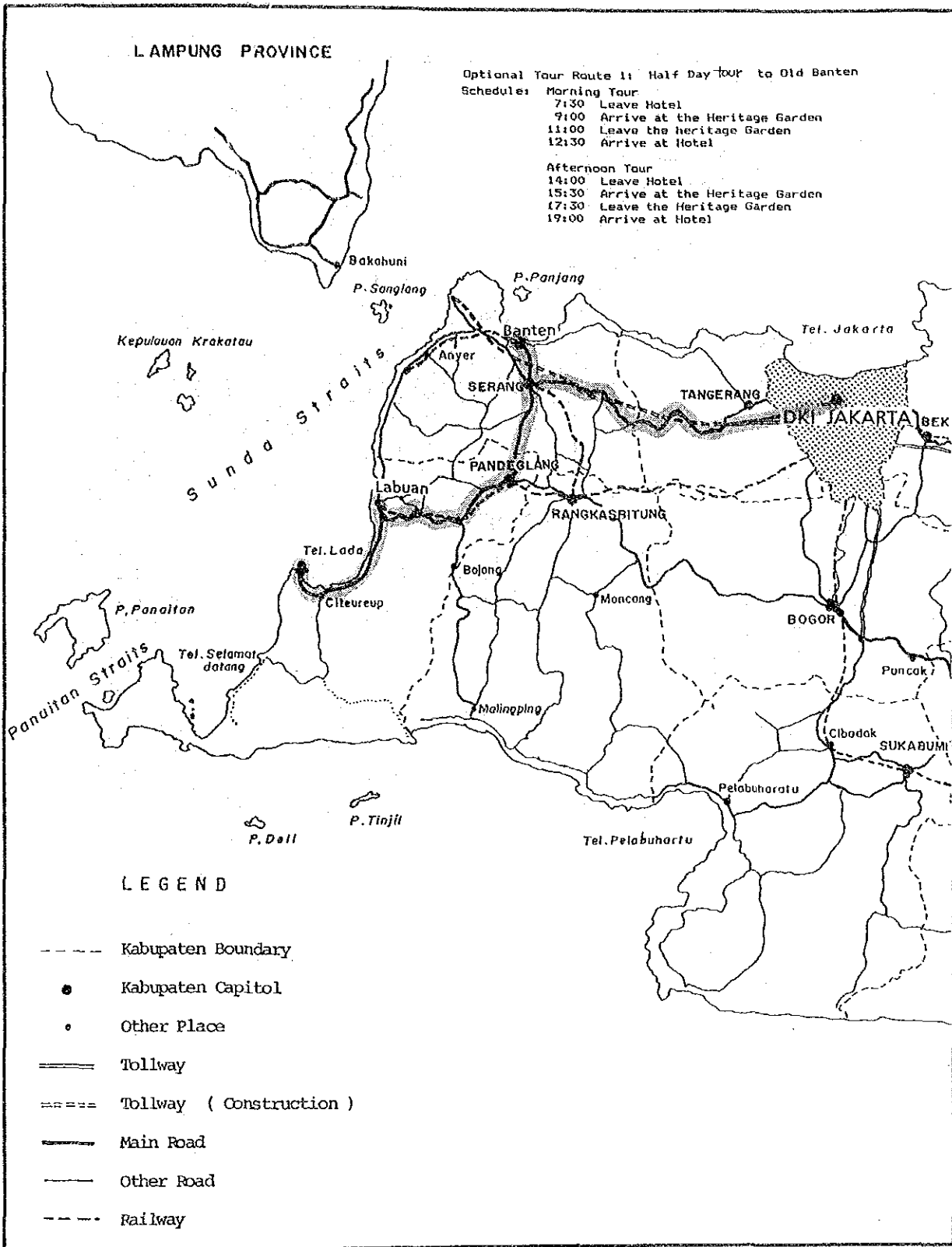
Construction Cost (Rp. million)

Item	Portion (%)		Stage 1			Stage 2			Total		
	FC	LC	FC	LC	Total	FC	LC	Total	FC	LC	Total
1. Preparatory work	10	90	281	2,527	2,808	281	2,527	2,808	562	5,054	5,616
2. Earth work	20	80	31	122	153	57	227	284	88	349	437
3. Lagoon, Beach	20	80	910	3,640	4,550	–	–	–	910	3,640	4,550
4. Hotel	40	60	11,281	16,921	28,202	9,277	13,915	23,192	20,558	30,836	51,394
5. Condominium	30	70	1,443	3,366	4,809	739	1,724	2,463	2,182	5,090	7,272
6. Private Villa, G.H.	20	80	–	–	–	803	3,210	4,013	803	3,210	4,013
7. Marina	10	90	271	2,435	2,706	48	430	478	319	2,865	3,184
8. Central plaza	30	70	1,240	2,893	4,133	531	1,240	1,771	1,771	4,133	5,904
9. Sports facility	20	80	500	2,000	2,500	125	499	624	625	2,499	3,124
10. Picnic area	0	100	–	1,122	1,122	–	604	604	–	1,726	1,726
11. Orchid garden	10	90	–	–	–	110	980	1,090	110	980	1,090
12. Miniature golf	10	90	–	–	–	43	387	430	43	387	430
13. Seminar house	30	70	–	–	–	270	630	900	270	630	900
14. Diving school	30	70	174	406	580	–	–	–	174	406	580
15. Open air theater	20	80	55	219	274	–	–	–	55	219	274
16. Golf course	10	90	–	–	–	560	5,040	5,600	560	5,040	5,600
17. Playground	10	90	26	229	255	–	–	–	26	229	255
18. Giant maze	10	90	48	432	480	–	–	–	48	432	480
19. Athletics field	10	90	20	179	199	–	–	–	20	179	199
20. Horseback riding	10	90	29	259	288	–	–	–	29	259	288

Construction Cost (Rp. million)

Item	Portion (%)		Stage 1			Stage 2			Total		
	FC	LC	FC	LC	Total	FC	LC	Total	FC	LC	Total
21. Theme park	40	60	-	-	-	492	738	1,230	492	738	1,230
22. Camping area	0	100	-	397	397	-	-	-	-	397	397
23. Economical lodge	10	90	22	195	217	9	84	93	31	279	310
24. Employee's village	10	90	97	876	973	39	343	382	136	1,219	1,355
25. Road	30	70	317	740	1,057	140	325	465	457	1,065	1,522
26. Storm drainage	10	90	6	54	60	-	-	-	6	54	60
27. Sewage treatment	50	50	1,021	966	1,987	653	502	1,155	1,674	1,468	3,142
28. Solid waste disposal	30	70	5	13	18	5	13	18	10	26	36
29. Electricity	50	50	278	277	555	182	183	365	460	460	920
30. Waste supply	35	65	568	1,622	2,190	212	127	339	780	1,749	2,529
31. Telephone	80	20	-	-	-	-	-	-	-	-	-
32. Access road	30	70	270	630	900	-	-	-	270	630	900
33. Miscellaneous	30	70	368	860	1,228	290	676	966	658	1,536	2,194
34. Sub Total	31	69	19,261	43,380	62,641	14,866	34,404	49,270	34,127	77,784	111,911
35. Engineering & Administration	-	-	2,889	6,507	9,396	2,230	5,160	7,390	5,119	11,667	16,786
36. Physical contingency	-	-	2,215	4,989	7,204	1,710	3,956	5,666	3,925	8,945	12,870
37. Total	31	69	24,365	54,876	79,241	18,806	43,520	62,326	43,171	98,396	141,567
38. Land acquisition	-	100	-	516	516	-	-	-	-	516	516
39. Vessel	100	-	700	-	700	700	-	700	1,400	-	1,400
40. Price contingency	-	-	6,904	27,625	34,529	9,298	31,980	41,278	16,202	59,605	75,808
41. Grand Total	31	69	31,969	83,017	114,986	28,804	75,500	104,304	60,773	158,517	219,290

ANNEX II.C

MANAGEMENT

LAMPUNG PROVINCE
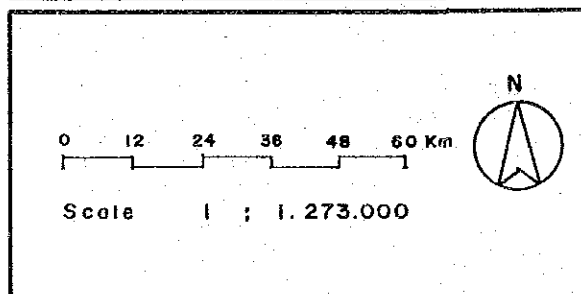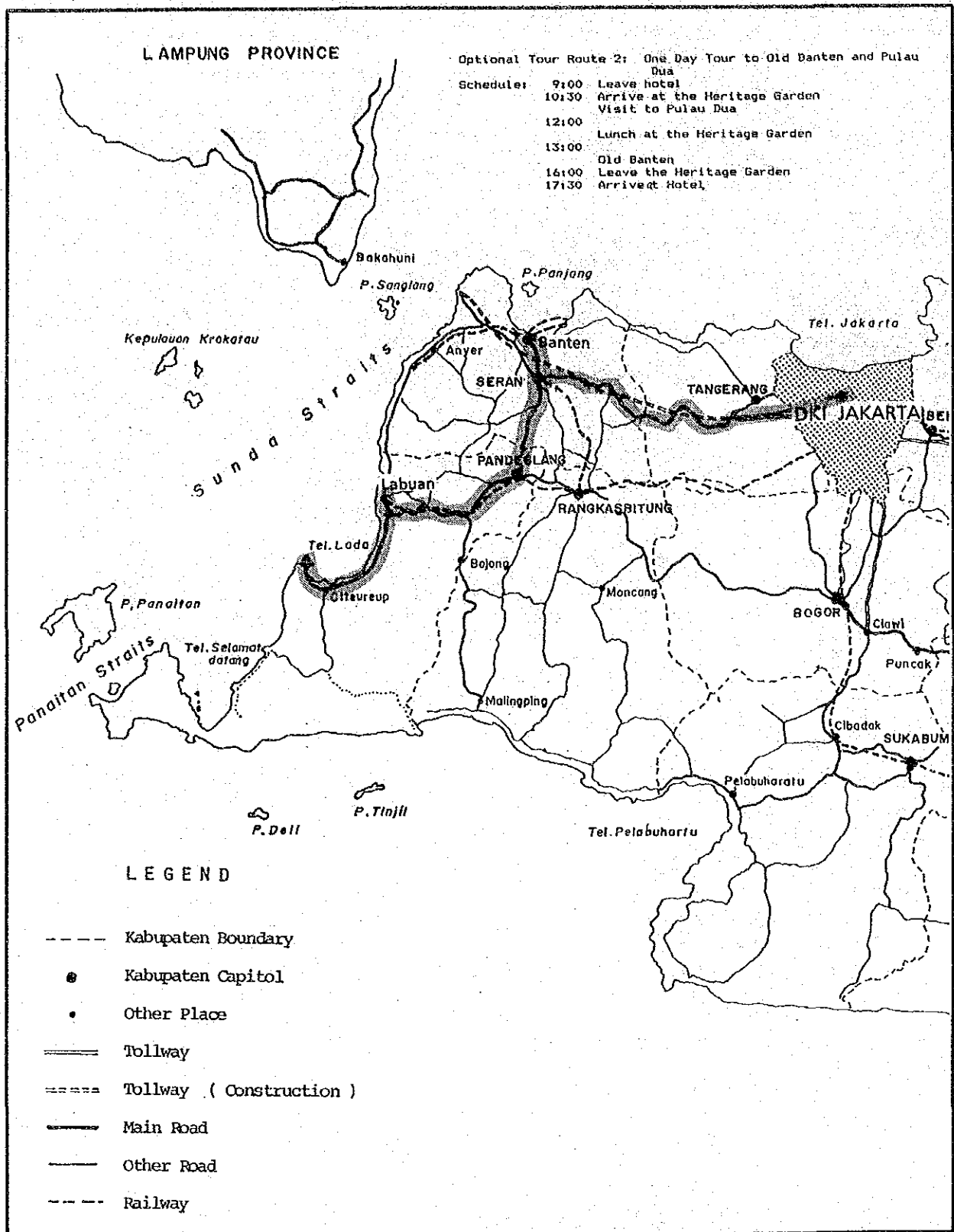
Optional Tour Route 1: Half Day tour to Old Banten
Schedule: Morning Tour
    7:30 Leave Hotel
    9:00 Arrive at the Heritage Garden
   11:00 Leave the heritage Garden
   12:30 Arrive at Hotel

          Afternoon Tour
   14:00 Leave Hotel
   15:30 Arrive at the Heritage Garden
   17:30 Leave the Heritage Garden
   19:00 Arrive at Hotel

Bakahuni

P.Panjang

P.Sanglang

Banten

Tel.Jakarta

Anyer

Kepulauan Krakatau

SERANG

TANGERANG

DKI JAKARTA BEK

PANDEGLANG

Labuan

RANGKASBITUNG

Tel.Lada

Bojong

Moncong

BOGOR

P.Panaitan

Citeureup

Sunda Straits

Panaitan Straits

Tel.Selamat datang

Puncak

Malingping

Cibadak

SUKABUMI

Pelabuharatu

P.Tinjil

P.Deli

Tel.Pelabuharatu

LEGEND

— · — · — Kabupaten Boundary

● Kabupaten Capitol

○ Other Place

===== Tollway

=·=·= Tollway (Construction)

━━━━ Main Road

——— Other Road

— — — Railway

N

0 12 24 36 48 60 Km

Scale 1 : 1.273.000

DEPARTMENT OF TOURISM, POST AND TELECOMMUNICATION
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JAPAN INTERNATIONAL COOPERATION AGENCY

THE STUDY ON THE REGIONAL DEVELOPMENT PROJECT
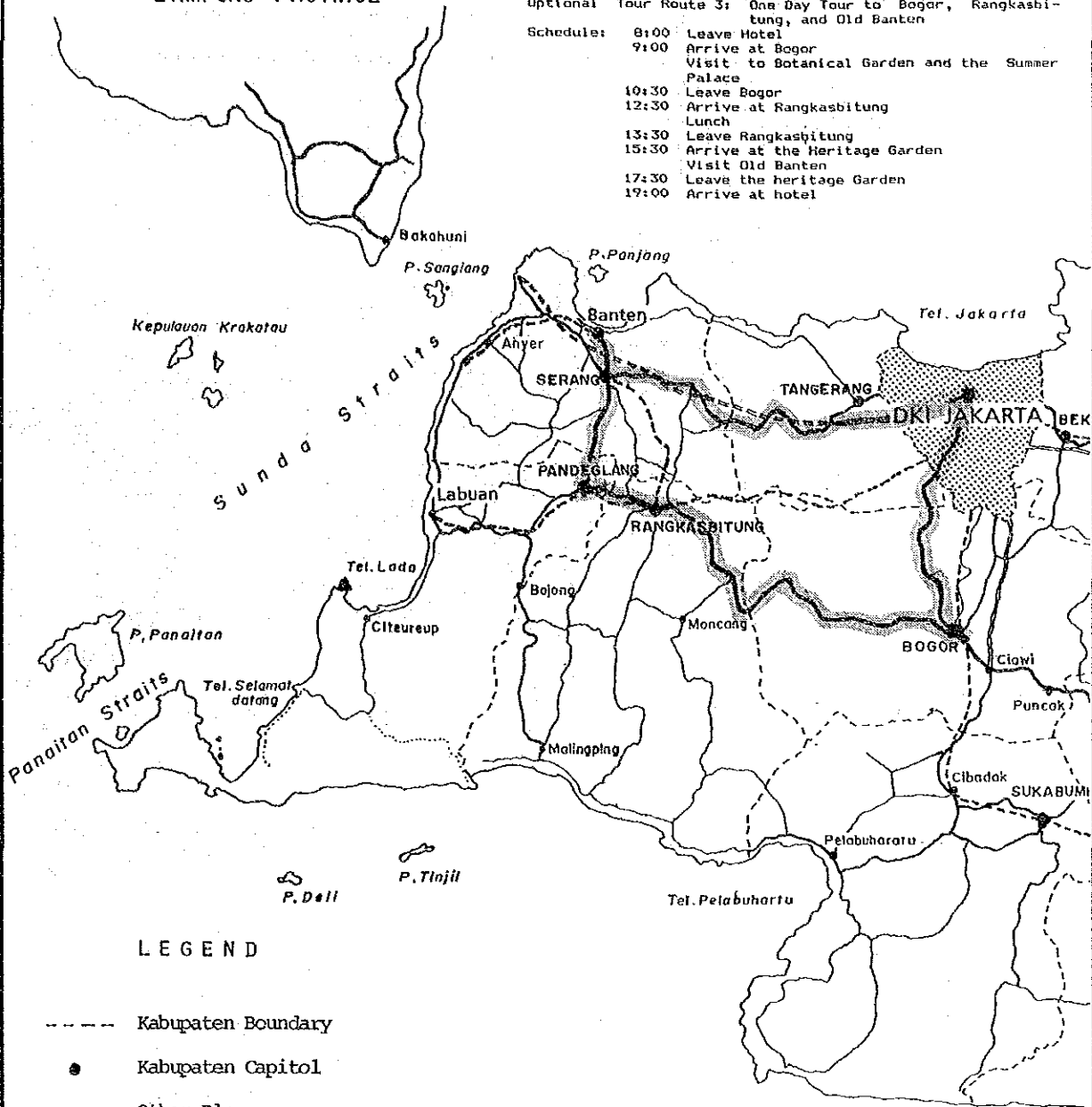IN THE WESTERN PART OF JAVA

Annex II.C.1

OPTIONAL TOUR ROUTE : STOPOVERING
OLD BANTEN (1)

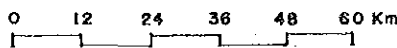LAMPUNG PROVINCE

Optional Tour Route 2: One Day Tour to Old Banten and Pulau Dua

Schedule:
9:00 Leave hotel
10:30 Arrive at the Heritage Garden
Visit to Pulau Dua
12:00
Lunch at the Heritage Garden
13:00
Old Banten
16:00 Leave the Heritage Garden
17:30 Arrive at Hotel

LEGEND

—— —— Kabupaten Boundary

⊛ Kabupaten Capitol

• Other Place

===== Tollway

==-== Tollway (Construction)

━━━━ Main Road

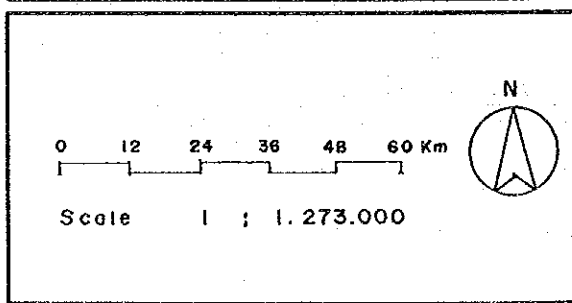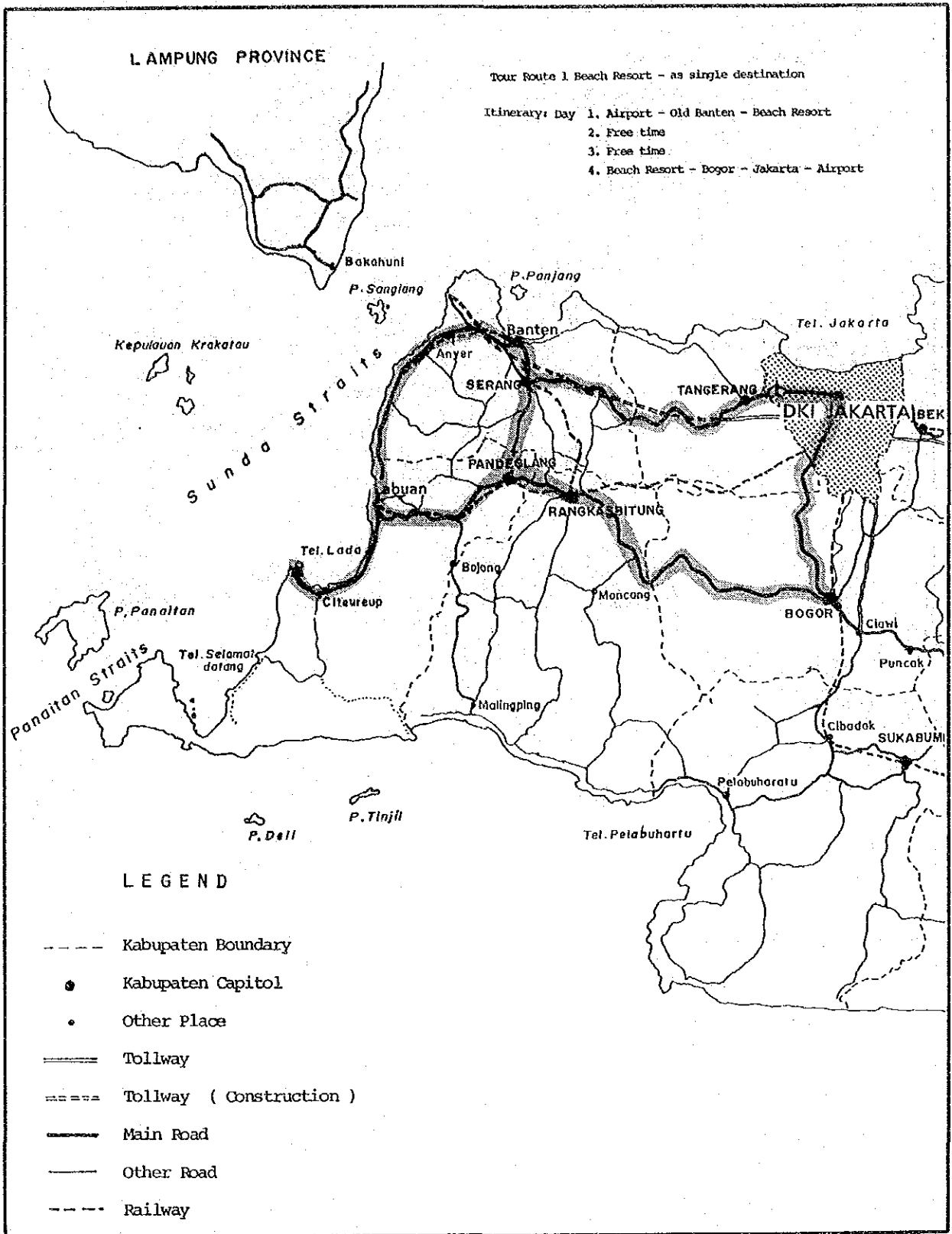———— Other Road

—— —— Railway

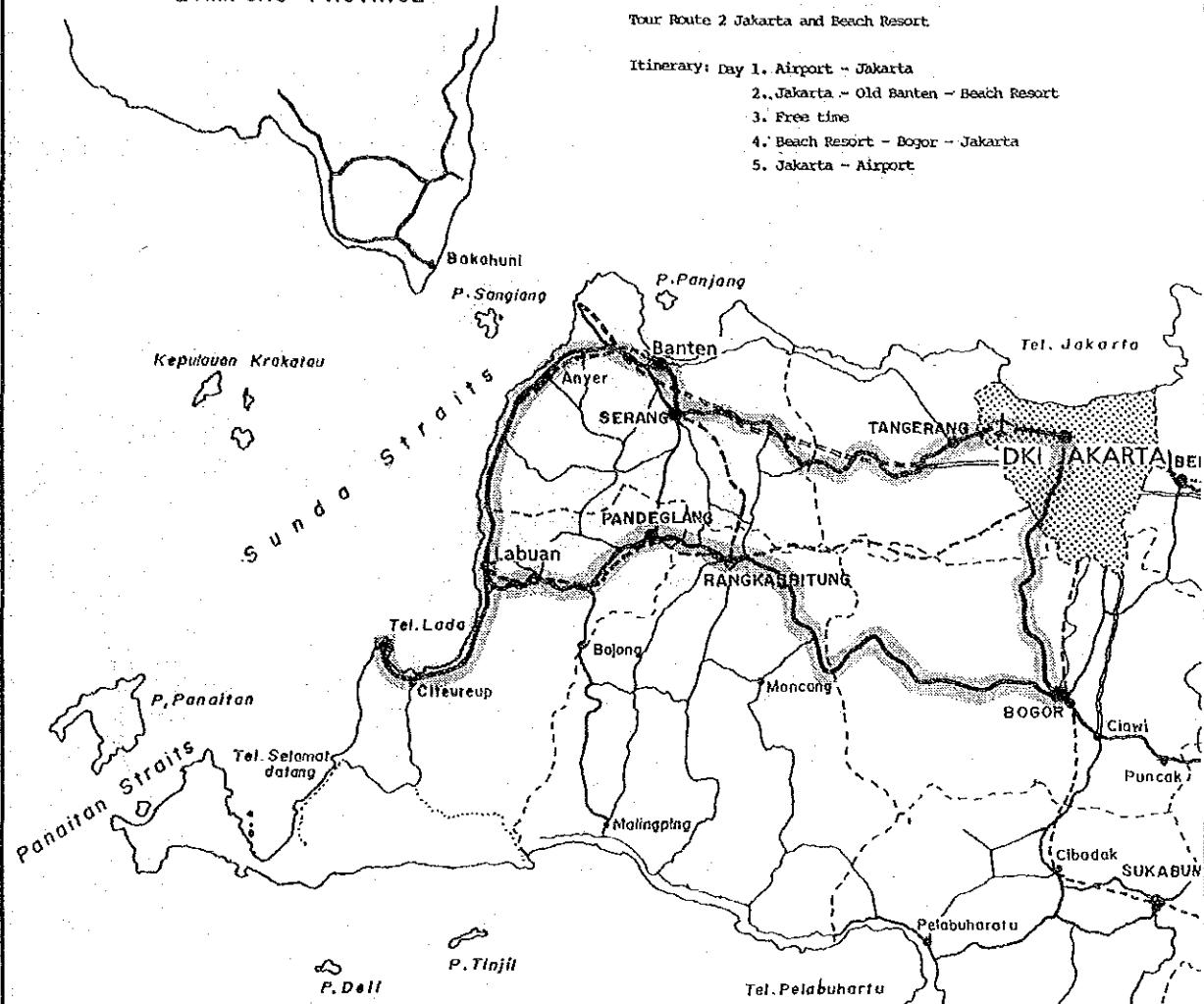DEPARTMENT OF TOURISM, POST AND TELECOMMUNICATION
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JAPAN INTERNATIONAL COOPERATION AGENCY

THE STUDY ON THE REGIONAL DEVELOPMENT PROJECT
IN THE WESTERN PART OF JAVA

Annex II.C.1
OPTIONAL TOUR ROUTE STOPOVERING
OLD BANTEN (2)

0 12 24 36 48 60 Km

Scale 1 : 1.273.000

N

LAMPUNG PROVINCE

Bokohuni

P. Sangiang

P. Panjang

Kepulauan Krakatau

Tel. Jakarta

Banten

Anyer

SERANG

Sunda Straits

TANGERANG

DKI JAKARTA

BEK

PANDEGLANG

Labuan

RANGKASBITUNG

Tel. Lada

Bojong

Moncang

Citeureup

BOGOR

Ciawi

P. Panaitan

Puncok

Tel. Selamat
datang

Panaitan Straits

Malingping

Cibadak

SUKABUMI

Pelabuharatu

P. Deli

P. Tinjil

Tel. Pelabuharatu

LEGEND

— ·· — ··   Kabupaten Boundary

   ●   Kabupaten Capitol

   ·   Other Place

═════   Tollway

═ ═ ═ ═   Tollway (Construction)

▬▬▬▬   Main Road

──────   Other Road

— — — ·   Railway

Annex II.C.1

OPTIONAL TOUR ROUTE STOPOVERING
OLD BANTEN (3)

N

```
0    12    24    36    48    60 Km
├────┼────┼────┼────┼────┤

Scale    1  :  1. 273.000
```

LAMPUNG PROVINCE

Tour Route 1 Beach Resort - as single destination

Itinerary: Day 1. Airport - Old Banten - Beach Resort
2. Free time
3. Free time
4. Beach Resort - Bogor - Jakarta - Airport

LEGEND

— — — — Kabupaten Boundary

● Kabupaten Capitol

○ Other Place

━━━━━ Tollway

━ ━ ━ ━ Tollway (Construction)

━━━━━ Main Road

———— Other Road

— — — • Railway

N

0   12   24   36   48   60 Km

Scale   1 : 1.273.000

Annex II.C.2

PACKAGE TOUR ROUTE TO TANJUNG LESUNG
BEACH RESORT (1)

LAMPUNG PROVINCE

Tour Route 2 Jakarta and Beach Resort

Itinerary: Day 1. Airport ~ Jakarta
2. Jakarta ~ Old Banten ~ Beach Resort
3. Free time
4. Beach Resort ~ Bogor ~ Jakarta
5. Jakarta ~ Airport

Bakahuni
P.Panjang
P.Sangiang
Tel. Jakarta
Kepulauan Krakatau
Banten
Anyer
SERANG
TANGERANG
DKI JAKARTA BEI
Sunda Straits
PANDEGLANG
Labuan
RANGKASBITUNG
Tel.Lada
Bojong
Cileureup
Moncang
BOGOR
Ciawi
P.Panaitan
Puncak
Tel.Selamat
datang
Malingping
Cibadak
SUKABUN
Panaitan Straits
Pelabuharatu
P.Dell
P.Tinjil
Tel.Pelabuhartu

LEGEND

- - - - Kabupaten Boundary

● Kabupaten Capitol

• Other Place

==== Tollway

==-= Tollway (Construction)

●——● Main Road

——— Other Road

— ·· — Railway

N

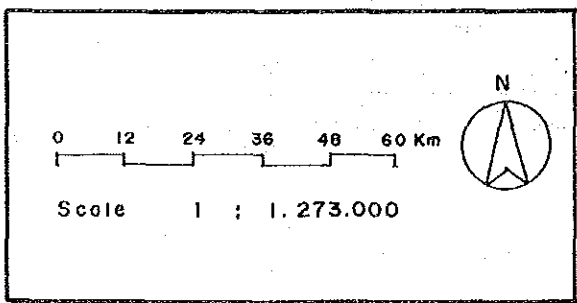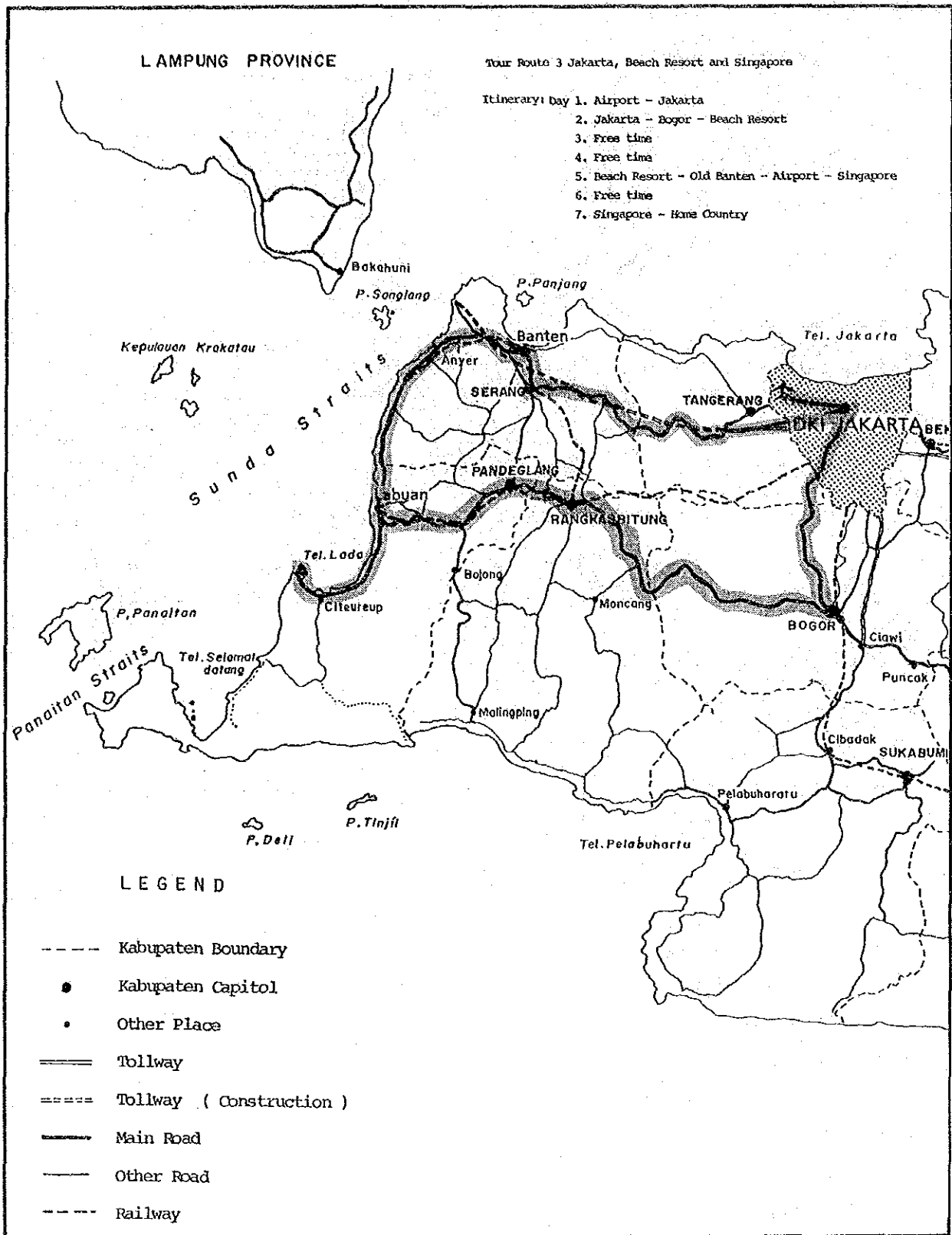0   12   24   36   48   60 Km
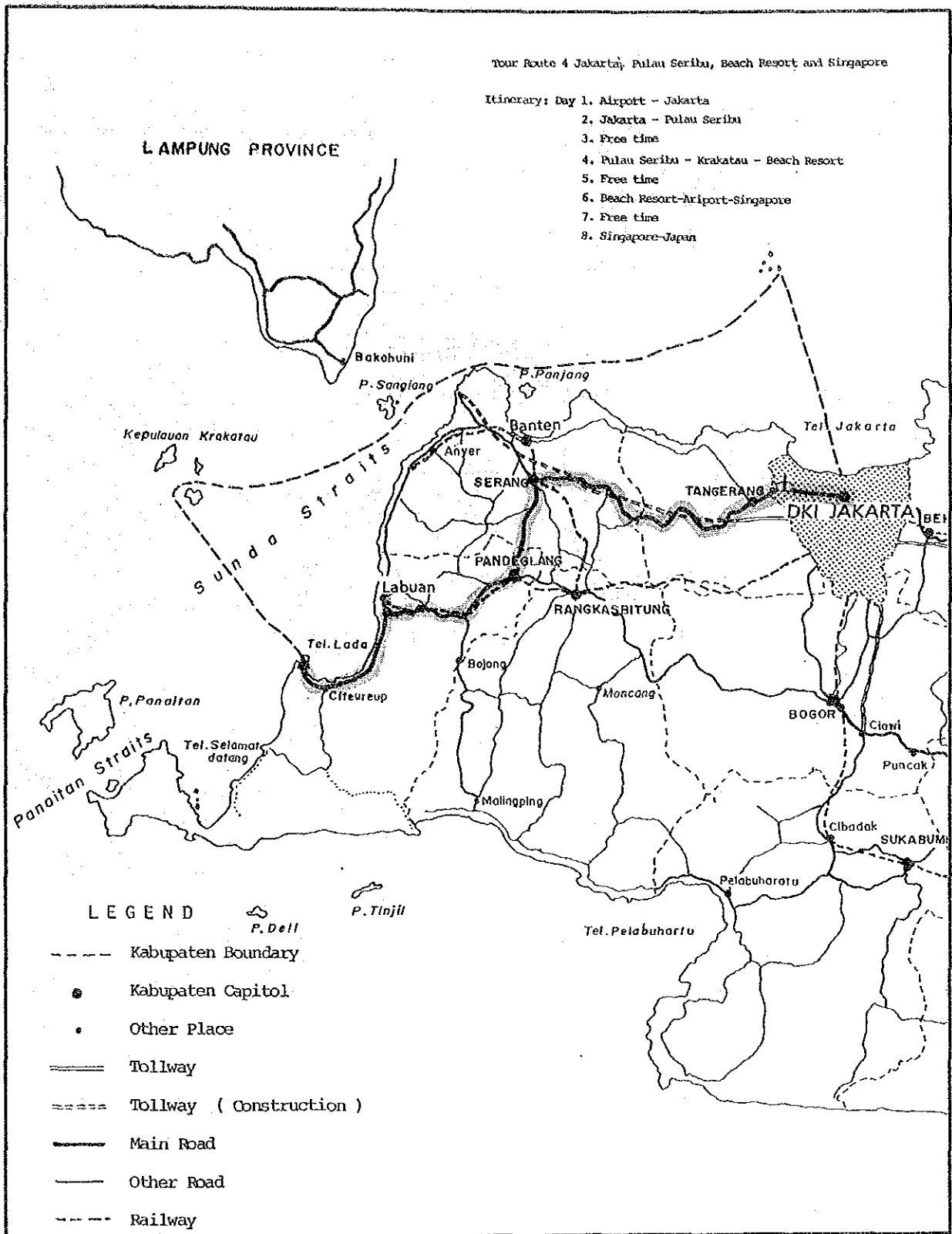
Scale   I : I. 273.000

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JAPAN INTERNATIONAL COOPERATION AGENCY

THE STUDY ON THE REGIONAL DEVELOPMENT PROJECT
IN THE WESTERN PART OF JAVA

Annex II.C.2
PACKAGE TOUR ROUTE TO TANJUNG LESUNG
BEACH RESORT (2)

C.5

LAMPUNG PROVINCE

Tour Route 3 Jakarta, Beach Resort and Singapore

Itinerary: Day 1. Airport - Jakarta
2. Jakarta - Bogor - Beach Resort
3. Free time
4. Free time
5. Beach Resort - Old Banten - Airport - Singapore
6. Free time
7. Singapore - Home Country

Bakahuni

P. Songlang

P. Panjang

Kepulauan Krakatau

Banten

Tel. Jakarta

Anyer

SERANG

TANGERANG

DKI JAKARTA BEI

Sunda Straits

PANDEGLANG

Labuan

RANGKASBITUNG

Tel. Lada

P. Panaitan

Bojong

Moncang

BOGOR

Citeureup

Ciawi

Panaitan Straits

Tel. Selamat datang

Puncak

Malingping

Cibadak

SUKABUMI

P. Deli

P. Tinjil

Pelabuhratu

Tel. Pelabuhratu

LEGEND

- - - -   Kabupaten Boundary

●   Kabupaten Capitol

•   Other Place

=====   Tollway

== == ==   Tollway (Construction)

━━━▶   Main Road

─────   Other Road

- - - -   Railway

N

0   12   24   36   48   60 Km

Scale   1 : 1.273.000

Annex II.C.2

PACKAGE TOUR ROUTE TO TANJUNG LESUNG
BEACH RESORT (3)

Tour Route 4 Jakarta, Pulau Seribu, Beach Resort and Singapore

Itinerary: Day 1. Airport - Jakarta

2. Jakarta - Pulau Seribu

3. Free time

4. Pulau Seribu - Krakatau - Beach Resort

5. Free time

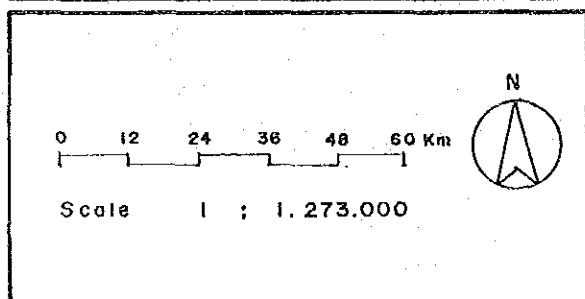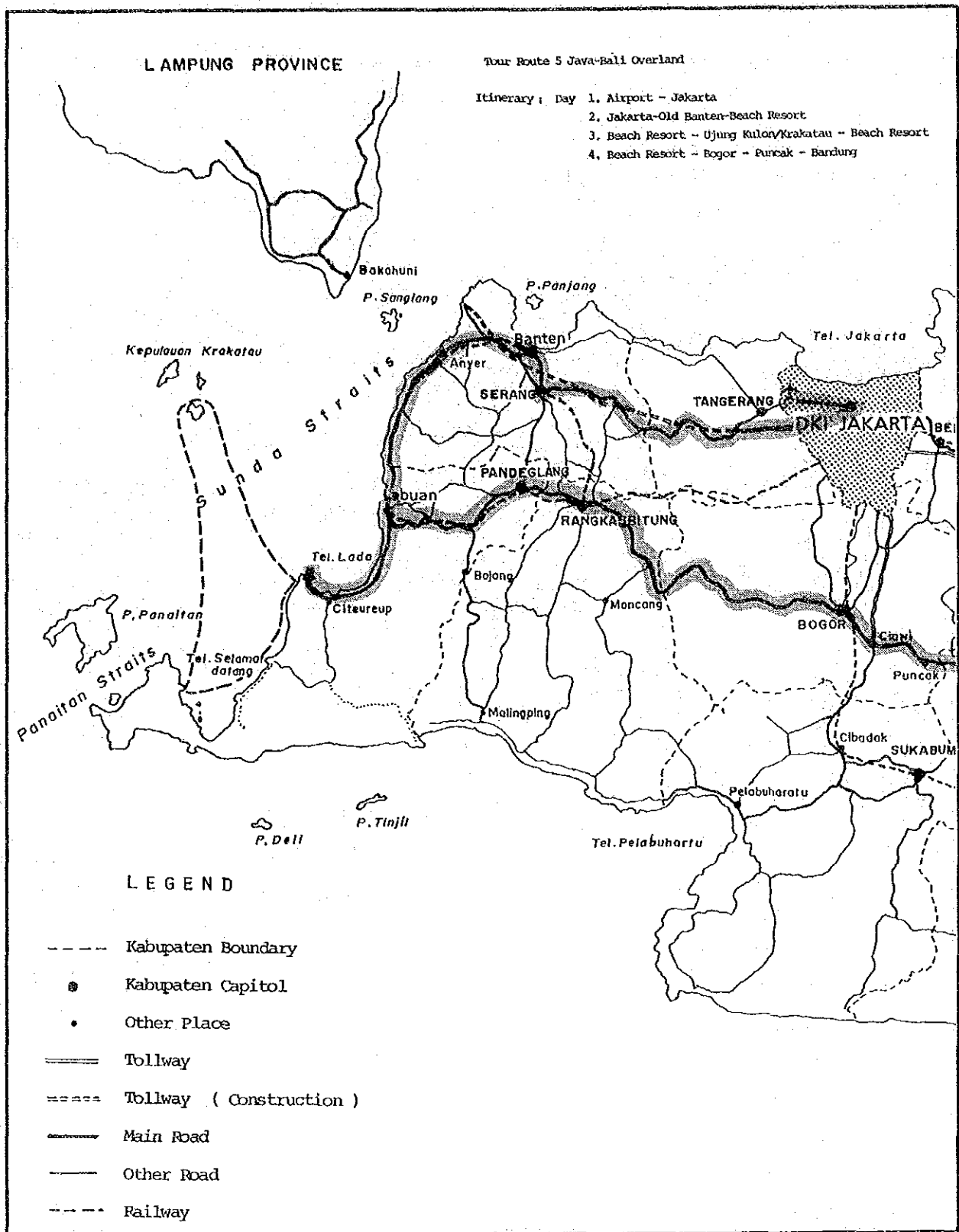6. Beach Resort-Airport-Singapore

7. Free time

8. Singapore-Japan

Bakohuni

P. Sangiang

P. Panjang

Tel. Jakarta

Kepulauan Krakatau

Banten

Anyer

SERANG

TANGERANG

DKI JAKARTA

BE

Sunda Straits

PANDEGLANG

Labuan

RANGKASBITUNG

Tel. Lada

Bojong

Moncang

BOGOR

Ciawi

P. Panaitan

Citeureup

Puncak

Panaitan Straits

Tel. Selamat
datang

Malingping

Cibadak

SUKABUMI

Pelabuharatu

P. Tinjil

Tel. Pelabuharatu

LEGEND

P. Deli

- - - - Kabupaten Boundary

● Kabupaten Capitol

• Other Place

===== Tollway

==== Tollway (Construction)

——— Main Road

——— Other Road

- - - Railway

Annex II.C.2

PACKAGE TOUR ROUTE TO TANJUNG LESUNG
BEACH RESORT (4)

LAMPUNG PROVINCE

Tour Route 5 Java-Bali Overland

Itinerary : Day 1. Airport – Jakarta
            2. Jakarta-Old Banten-Beach Resort
            3. Beach Resort – Ujung Kulon/Krakatau – Beach Resort
            4. Beach Resort – Bogor – Puncak – Bandung

Bakahuni
P. Sanglang
P. Panjang
Kepulauan Krakatau
Sunda Straits
Tel. Jakarta
Banten
Anyer
SERANG
TANGERANG
DKI JAKARTA
BE
PANDEGLANG
Labuan
RANGKASBITUNG
Tel. Lada
Bojong
Citeureup
Moncang
BOGOR
Ciani
P. Panaitan
Panaitan Straits
Tel. Selamat datang
Malingping
Cibadak
Puncak
SUKABUM
Pelabuhratu
P. Dell
P. Tinjil
Tel. Pelabuhartu

LEGEND

– – – – Kabupaten Boundary
  ⊕   Kabupaten Capitol
  •   Other Place
═════   Tollway
═ ═ ═   Tollway (Construction)
━━━━   Main Road
────   Other Road
–·–·–   Railway

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DIRECTORATE GENERAL OF TOURISM
JAPAN INTERNATIONAL COOPERATION AGENCY
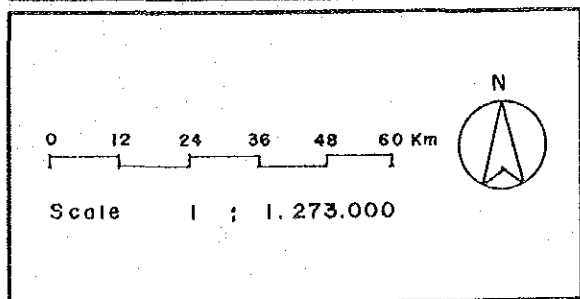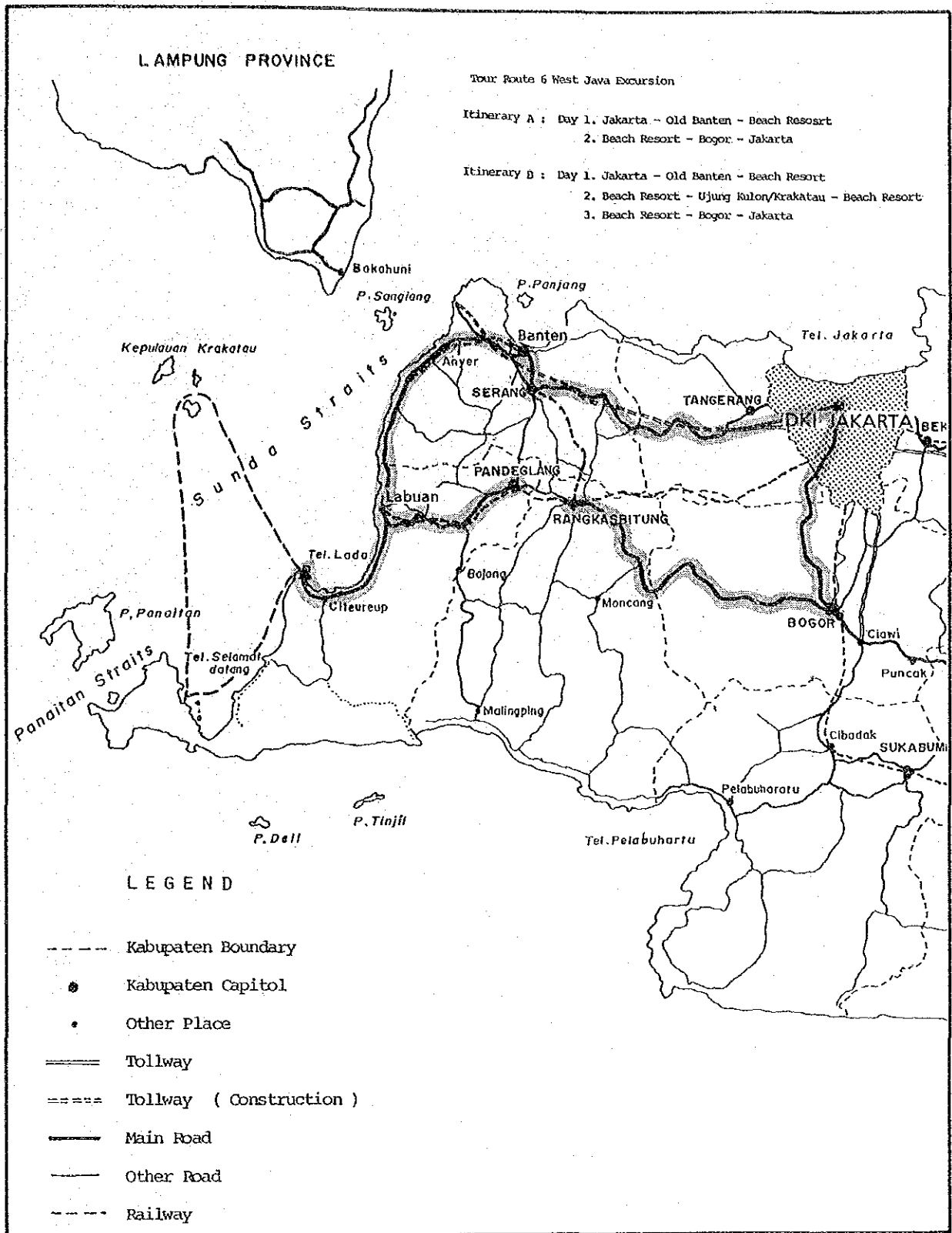THE STUDY ON THE REGIONAL DEVELOPMENT PROJECT
IN THE WESTERN PART OF JAVA

Annex II.C.2
PACKAGE TOUR ROUTE TO TANJUNG LESUNG
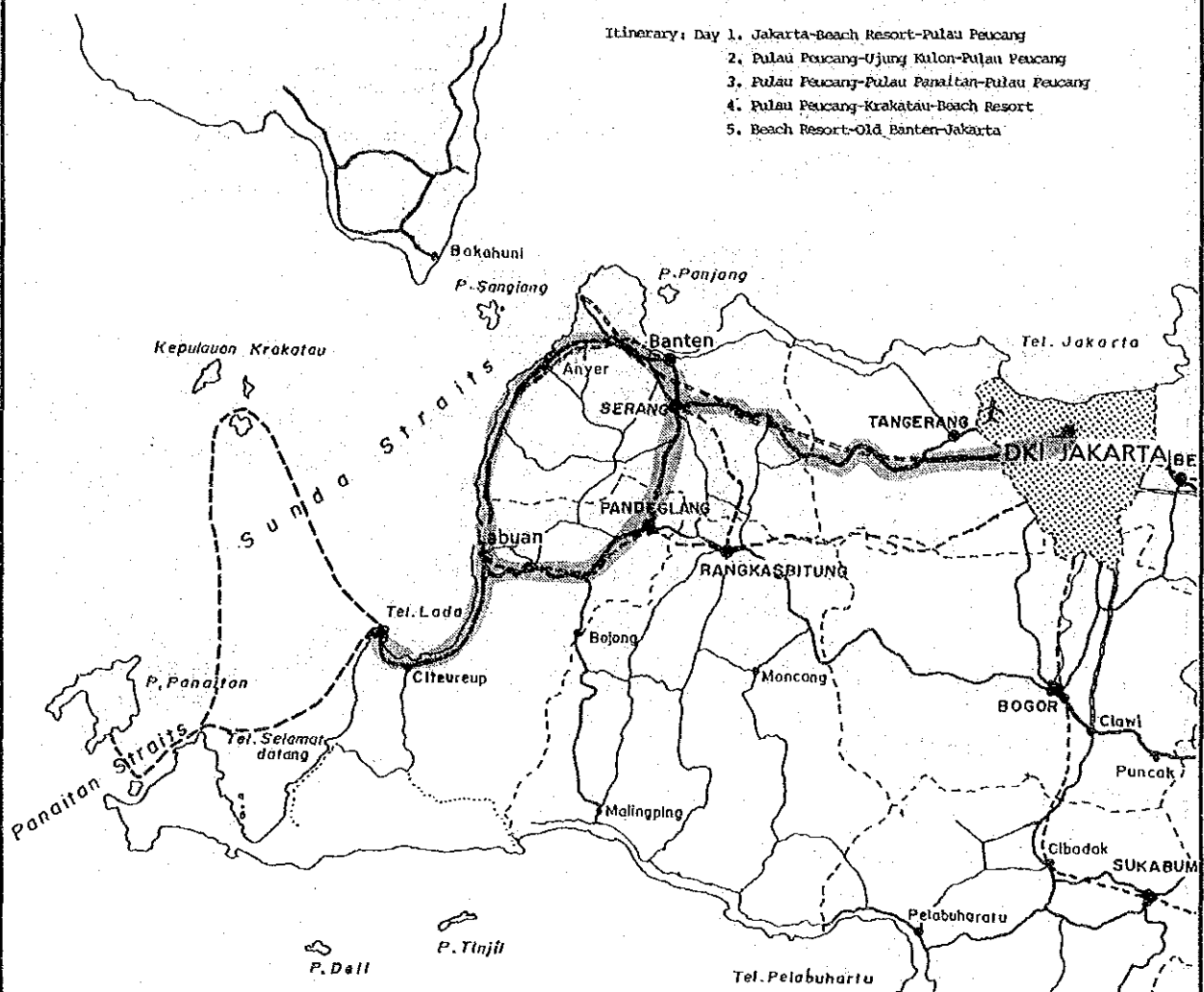BEACH RESORT (5)

N

0   12   24   36   48   60 Km

Scale   1 : 1.273.000

C.8

LAMPUNG PROVINCE

Tour Route 6 West Java Excursion

Itinerary A : Day 1. Jakarta - Old Banten - Beach Resosrt
              2. Beach Resort - Bogor - Jakarta

Itinerary B : Day 1. Jakarta - Old Banten - Beach Resort
              2. Beach Resort - Ujung Kulon/Krakatau - Beach Resort
              3. Beach Resort - Bogor - Jakarta

Bakahuni

P.Panjang

P.Sangiang

Banten

Kepulauan Krakatau

Tel. Jakarta

Anyer

SERANG

TANGERANG

DKI JAKARTA   BEK

Sunda Straits

PANDEGLANG

Labuan

RANGKASBITUNG

Tel.Lada

Bojong

P,Panaitan

Cikeureup

Moncang

BOGOR

Ciawi

Tel.Selamat
datang

Puncak

Panaitan Straits

Malingping

Cibadak

SUKABUM

Pelabuharatu

P.Deli

P.Tinjil

Tel.Pelabuhartu

LEGEND

- - - - - Kabupaten Boundary

⊛   Kabupaten Capitol

•   Other Place

===== Tollway

== == == Tollway (Construction)

•——— Main Road

———— Other Road

- - - - Railway

0   12   24   36   48   60 Km

Scale   I : 1.273.000

N

Annex II.C.2

PACKAGE TOUR ROUTE TO TANJUNG LESUNG
BEACH RESORT (6)

LAMPUNG PROVINCE

Tour Rate 7. Survival Camp to Ujung Kulon/Krakatau

Itinerary: Day 1. Jakarta-Beach Resort-Pulau Peucang
2. Pulau Peucang-Ujung Kulon-Pulau Peucang
3. Pulau Peucang-Pulau Panaitan-Pulau Peucang
4. Pulau Peucang-Krakatau-Beach Resort
5. Beach Resort-Old Banten-Jakarta

LEGEND

---- Kabupaten Boundary

⊕ Kabupaten Capitol

∘ Other Place

===== Tollway

==== Tollway (Construction)

━━━ Main Road

──── Other Road

── ── Railway

Scale   1 : 1.273.000

0   12   24   36   48   60 Km

N

Annex II.C.2

PACKAGE TOUR ROUTE TO TANJUNG LESUNG
BEACH RESORT (7)

ANNEX II.D

ENVIRONMENT

ANNEX II.D ENVIRONMENT

1) Environmental study

The survey data of natural and socio-cultural environment
impact study were used for the evaluation of present
conditions and the selection of environment factors to
forecast and evaluate the future conditions. The flow of
this environmental study is shown in Annex II.D.1.

2) Natural environment

(1) Old Banten Project site

The cover map of the major vegetation types of the
Pulau Dua Nature Reserve is shown in Annex II.D.2.
The dominant species in this island are Diospyros
maritima, Lumnitzera racemosa and Rhizophora spp.

(2) Beach Resort Project site

Results of field reconnaissance and hearing survey on
fauna and flora are shown in Annex II.D.3 and 4.

Results of water quality survey in the project site
are presented in Annex II.D.5.

(3) Dilution of sewage effluent

Results of the study on dilution of sewage effluent
are presented in Annex II.D.6.

3) Socio-cultural environment

(1) Old Banten project site

Sixteen formal and informal leaders were selected as respondents for an interview survey. List of respondents is shown in Annex II.D.7. Results of the socio-cultural interview survey are depicted in Annex II.D.8.
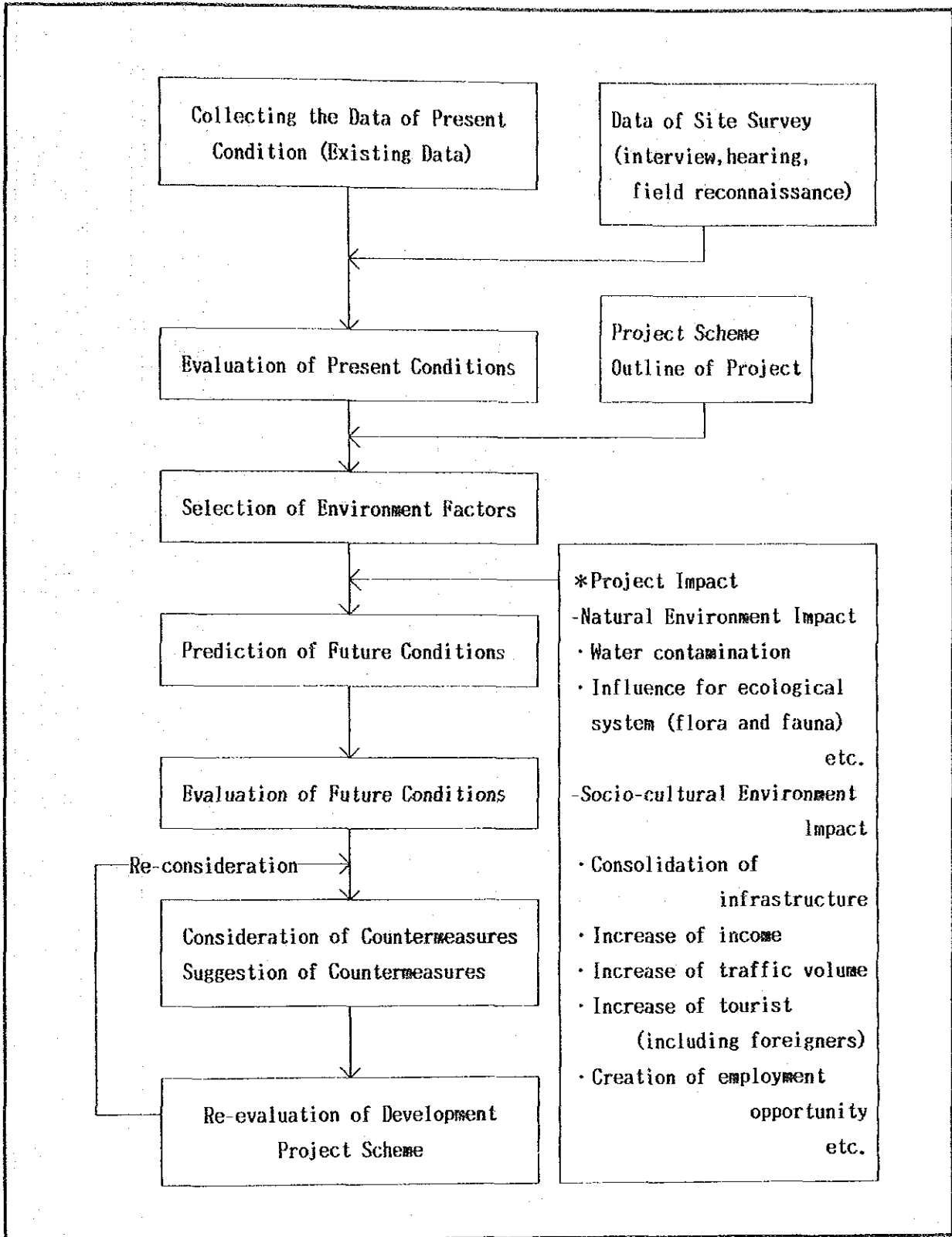
(2) Beach Resort Project site

Eighteen formal and informal leaders were selected as respondents for an interview survey. List of respondents is shown in Annex II.D.9. Results of socio-cultural interview survey are presented in Annex II.D.10.

4) *Socio-economic conditions of Beach Resort Project site*

JICA Study Team and their Counterparts carried out an interview survey on socio-economic conditions. Main purpose of this survey is to get some information on the present socio-economic conditions of the local people in this region.

The survey mainly focussed on income, secondary job, living standard in general, local commodities and its market orientation, transportation used in daily life and amenities of its surrounding. Results of the surveys in Kecamatan Cigeulis and Desa Tanjung Jaya are summarized in Annex II.D.11.

```
┌─────────────────────────────┐        ┌─────────────────────────┐
│ Collecting the Data of      │        │ Data of Site Survey     │
│ Present                     │        │ (interview, hearing,    │
│ Condition (Existing Data)   │        │    field reconnaissance)│
└─────────────────────────────┘        └─────────────────────────┘
              │                                      │
              ▼◄─────────────────────────────────────┘
┌─────────────────────────────┐        ┌─────────────────────────┐
│ Evaluation of Present       │        │ Project Scheme          │
│ Conditions                  │        │ Outline of Project      │
└─────────────────────────────┘        └─────────────────────────┘
              │                                      │
              ▼◄─────────────────────────────────────┘
┌─────────────────────────────┐
│ Selection of Environment    │
│ Factors                     │
└─────────────────────────────┘
              │◄──────────────────────┐
              ▼                        │
┌─────────────────────────────┐   ┌──────────────────────────────┐
│ Prediction of Future        │   │ *Project Impact              │
│ Conditions                  │   │ -Natural Environment Impact  │
└─────────────────────────────┘   │ · Water contamination        │
              │                    │ · Influence for ecological   │
              ▼                    │   system (flora and fauna)   │
┌─────────────────────────────┐   │                      etc.    │
│ Evaluation of Future        │   │ -Socio-cultural Environment  │
│ Conditions                  │   │                      Impact  │
└─────────────────────────────┘   │ · Consolidation of           │
  ┌─Re-consideration──►│           │             infrastructure   │
  │           ▼                    │ · Increase of income         │
┌─────────────────────────────┐   │ · Increase of traffic volume │
│ Consideration of            │   │ · Increase of tourist        │
│ Countermeasures             │   │      (including foreigners)  │
│ Suggestion of               │   │ · Creation of employment     │
│ Countermeasures             │   │               opportunity    │
└─────────────────────────────┘   │                      etc.    │
  │           │                    └──────────────────────────────┘
  │           ▼
┌─────────────────────────────┐
│ Re-evaluation of Development │
│ Project Scheme              │
└─────────────────────────────┘
```

Annex II.D.2   DISTRIBUTION OF MAJOR VEGETATION TYPES IN
THE PULAU DUA NATURE RESERVE

LOCATION MAP
WEST JAVA

• PULAU DUA

0   50   100
km

Merak
Serang
Jakarta
Bogor
Pelabuhan Ratu
Bandung
Cirebon
Indramayu
Citocap

106°   107°   108°   109°
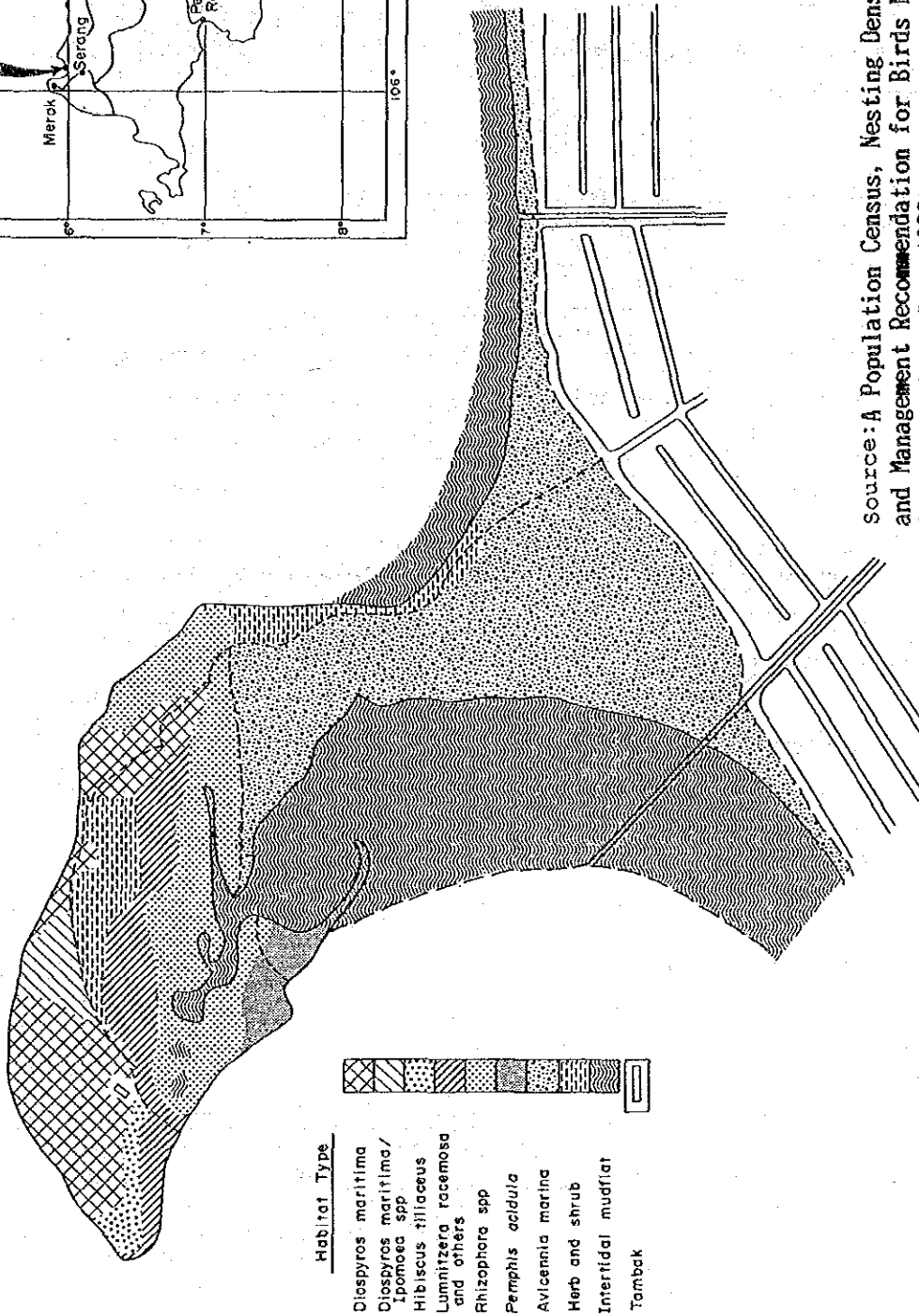
Habitat Type

Diospyros maritima
Diospyros maritima/
Ipomoea spp
Hibiscus tiliaceus
Lumnitzera racemosa
and others
Rhizophora spp
Pemphis acidula
Avicennia marina
Herb and shrub
Intertidal mudflat
Tambak

0 50 100 200 300   500m

N
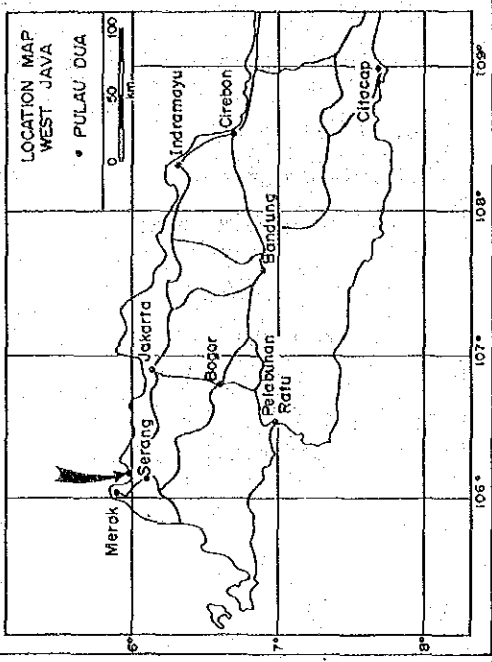
Source: A Population Census, Nesting Density, Habitat Utilization,
and Management Recommendation for Birds Nesting on The Nature Reserve
Pulau Dua, West Java 1986

DEPARTMENT OF TOURISM, POST AND TELECOMMUNICATION
DIRECTORATE GENERAL OF TOURISM

JAPAN INTERNATIONAL COOPERATION AGENCY

THE STUDY ON THE REGIONAL DEVELOPMENT PROJECT
IN THE WESTERN PART OF JAVA

Annex II.D.2
DISTRIBUTION OF MAJOR
VEGETATION TYPES IN THE
PULAU DUA NATURE RESERVE

Annex II.D.3 LIST OF FAUNA THAT EXIST IN FILED
(FOREST) OF TANJUNG LESUNG AREA

	Local Name	Biological Name	Note
1.	Rusa (Deer)	CERVUS EQUINUS	
2.	Banteng (Wild ox)	BOSS SUNDAICUS	Mammal
3.	Babi Hutan (Wild pit)	—	
4.	Kera (Monkey)	MACACUS SP.	
5.	Biawak (Lizard)	VARAUS SALUATOR	
6.	Ular Phyton (Snake)	PHYTON RETICULATA	Reptile
7.	Tokek (Qecho)	GECKO MONARCHIS	
8.	Rangkong	BUSEROS RANOCEROS	
9.	Blekok	ARDEOLA OPACIOSA	
10.	Kuntul	EGRETTA INTERAIDAE	
11.	Elang	SPIZAETUS SP.	
12.	Gagak	CURYUSE PUCA	
13.	Walet	COLOCALIA GIGAS	
14.	Kutilang	PYCNONOTUS SCAFER SP.	Birds
15.	Brecet	ALCIPPE POIOICEPHALA	
16.	Prentak	PRINIA SP.	
17.	Cangkurileung	PASSER SONTANUS	
18.	Prit	ERYTHRUNA PRASINA	
19.	Ayam Alas	GALUS-GALUS BANCIUA	
20.	Others		

| Name of Vegetation Community (Biotipe) | Name of Vegetation Species | | Note |
	Local Name	Botanical Name	
I. Formation of IPOMOEA PES CAPRAE	1. Tapak Kabi-Kowbing	IPOMOEA PES CAPRAE	
	2. -	VIGNA SP.	
	3. Rveupat augin	SPINIFEX LITTOREUS	only find out at sandy beach part/seaward zone
	4. -	EUPHORBIA ATOTO	
	5. -	CANAVOLIA MARITIMA	
II. Formation of BARRINGTONIA	1. Ketapang	TERMINALIA CATAPPA	
	2. Buton	BARRINGTONIA ASIATICA	
	3. Dadap	ERYTHRINA VARIEGA	
	4. Heranandia	HERNANDIA PELTATA	
	5. Pandan	PANDANUS SP.	
	6. Waru	HIBISCUS TILIACIUS	find out at backward zone of sandy beach or at rocky beach
	7. Nyamplung	CALOPHYLLUM INOPHYLUM	
	8. Cantinggi	PEMPHIS ACIDULA	
	9. Bakung	CRINUM ASIATICUM	
	10. Waru Lot	THESPESIA POPULNEA	
	11. Babakoan	SCAEVOLA FRUSTESCEN	
	12. Lalangkadan	WEOELIA BIFLORA	
	13. -	QUETTAROA SPECIOSA	
	14. Others		

Annex II.D.5(1)   WATER ANALYSIS, TANJUNG LESUNG, PANDEGLANG, JABAR (3 - 4 September, 1987)

Sta-tion	Date	Time	Tempera-ture (°C) Air	Water	Dissolved oxygen (ppm)	Salinity (o/oo)	Conductivity (μ Mhos/cm)	pH	Turbidity (eq. ppm silica)	Colour (Units Pt-Co)	B.O.D. 5 DAYS 20°C (mg/L)	C.O.D. K2Cr2O7 (mg/L)	Suspended Solid (mg/L)	Location
I	3-9-87	10.30	26.5	27.8	8.0	31.5	49,500	6.8	1.5	10	1.2	3.7	10	Sea Water
II	3-9-87	11.10	27.5	29.0	6.6	13.5	22,600	6.9	18					River Mouth of KALI CAAH
III	3-9-87	12.10	27.5	28.5	5.4	15.4	25,500	6.9	7	100	2.9	9.9	30	River of KALI CAAH (Bamboo Bridge)
IV	3-9-37	12.55	27.5	28.0	7.3	4.2	7,500	7.2	16					River of KALI CAAH
V	3-9-87	13.15	28.5	26.8	3.2	0.2	750	7.7	3					Shallow Well in TANJUNG JAYA Village
VI	3-9-87	14.10	26.0	32.8	11.1	18.2	32.200	7.9	16					River of CI GJIDANG
VII	3-9-87	17.25	25.0	30.0	7.2	20.0	31,000	7.8	18					River of CISEU-KEUT (4km from Estuary)
VIII	4-9-87	10.00	26.5	27.2	8.0	0	60	8.0	25.5	20	4.3	14.8	15	River of CISEUKEUT (Near CIGEULIS)

Annex II.D.5(2)   LOCATION OF STATIONS FOR WATER ANALYSIS

St. I   :   Pantai Tanjung Badur
              Desa Tanjung Jaya
              Kec. Cigeulis
              Permakilan Panimbang
              Kab. Padegelang - Banten

St. II   :   Muara Kalicaah
              Desa Tanjung Jaya
              Kec. Cigeulis
              Perwakilan Panimbang
              Kab. Padegelang - Banten

St. III   :   Jembatan Karang Meungpeuk Kalicaah
              Desa Tanjung Jaya

St. IV   :   Jembatan Loa (Kampung Sawah)

St. V   :   Sumur Mesjid

St. VI   :   Jembotan Jedang Girang, Sungai Cijedang (Perbatasan
              Citeureup - Tanjung Jaya)

St. VII   :   Bojong Macang
              Desa Meukara Sari
              Kali Ceiseukeut

St. VIII :   Sungai Ciseukeut, Lokasi Jembatan Muara Katumbiri
              Desa Karya Buana
              Kec. Cigeulis
              Keterangan: Jarak Dari Tanjung Lesung $\pm$18 KM
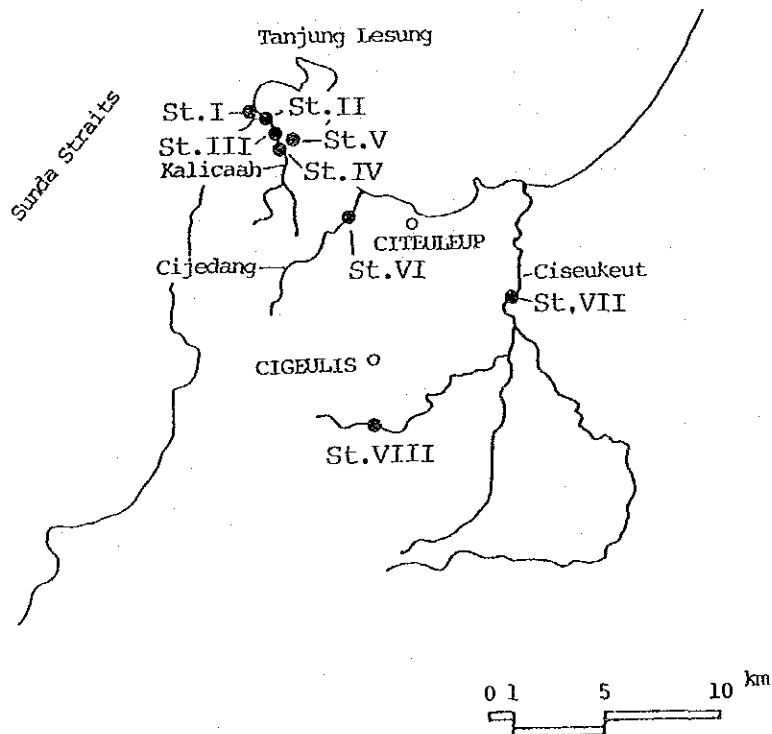
Annex II.D.6 DILUTION OF SEWAGE EFFLUENT

The dilution of sewage discharge into the Ocean is determined by two factors: an initial dilution and horizontal dispersion.

1) Initial dilution

   Since the specific gravity of waste water is normally 1.0 that is lighter than sea water of 1.02 ~ 1.03, the effluent which is discharged from the submarine outfall rises and spreads up to the surface of sea water. (See Fig. D-6-1)

   Some methods of the prediction of dilution have been proposed by RAWN, ABRAHAM or FRANKEL. In this study, popular RAWN's chart is utilized for the prediction. (see Fig. D-6-2)
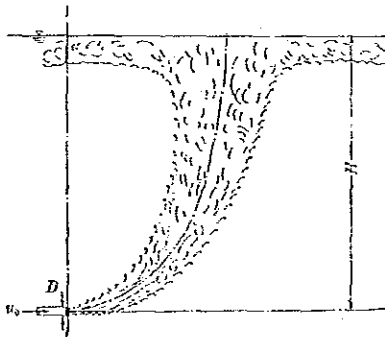
Fig. D-6-1 DILUTION DYNAMICS
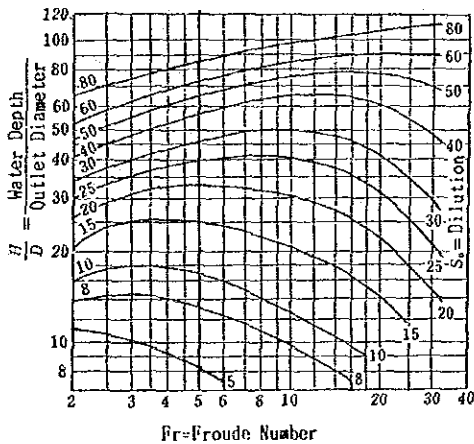
Fig. D-6-2 RAWN'S CHART
            (Initial Dilution)

Sample of calculation

(Input)
- Outlet Length (1) .... 100 m
- Outlet Diameter (D) .... 25 cm
- Water Depth (H) .... 2.0 m
- Sewer Volume (v) .... 60 lit/sec
- Specific Gravity of
  Sea Water (ρo) 1.025
- Specific Gravity of
  Sewer (ρs) 1.000

(Output)
- Effluent Velocity:
  $$Uo = V/A = 0.06/(0.25/2)^2 \pi = 1.22 \text{ m/sec}$$
- Froude Number:
  $$Fr = Uo/((\rho s - \rho o)gD/\rho o)^{1/2}$$
  $$= 1.22/((1.025 - 1.000)*9.8*0.25/1.00)^{1/2}$$
  $$= 4.9$$
- Ratio of Depth to Diameter:
  $$H/D = 2.0/0.25 = 8$$
- Magnification of Dilution:
  $$Sv = 5 \quad \text{(Fig. D-6-2)}$$

2) Horizontal dispersion

Horizontal dispersion can be solved by the equation of dilution. Brooks have proposed in the following equation:

$$c(x) = C_o e^{-kt} erf \sqrt{\frac{2/3}{(1+\frac{2}{3}\beta\frac{x}{b})^3 - 1}}$$

$$erfX = \int_0^x -e^{-v^2} dv$$

x: Distance from the outlet of outfall

C(x): Concentration at x

Co: Initial concentration

t: Minimum travel time (hours)

b: Diffuser width (meters) $= \dfrac{L'}{3}$

$L' = $ $H + (0.8a)^{2/3} - \dfrac{0.1685a^2}{\sqrt[3]{H}}$

H: Depth of sea water (m)

$a = \sqrt[3]{U_0^2 D}$

Uo: Effluent velocity (m/sec)

D: Outlet Diameter (m)

$\beta = \dfrac{12E_0}{U_b}$

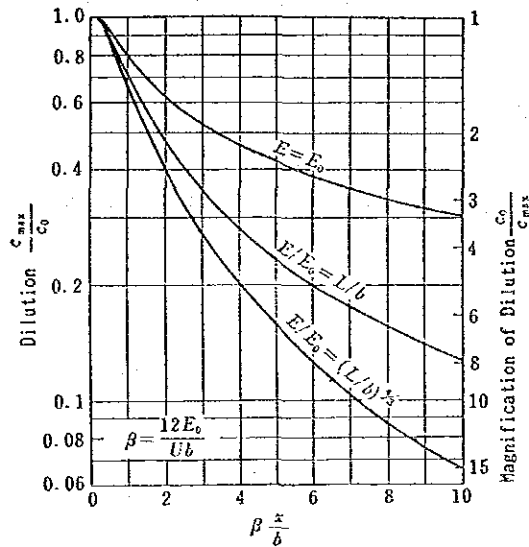Eo: $0.01\ b^{4/3}$ (cm^2/sec)

U: Sea current velocity (m/sec)

Fig. D-6-3   BROOK'S CHART (HORIZONTAL CHART)

Sample of Calculation

(Input)

x = 500 m

H + 10^m = 32.8^{ft}

U_o = $\dfrac{V}{A}$ = $\dfrac{0.06}{(\frac{0.25}{2})^2 \pi}$ = $1.22^{m/sec}$ = $4.0^{ft/sec}$

D = 0.25^m = 9.84^{in},

$a = \sqrt[3]{U_0^2 D} = \sqrt[3]{4.0^2 \times 9.84} = 5.4$

L' = $H + (0.8a)^{2/3} - \dfrac{0.1685}{\sqrt[3]{H}}a^2$

= $32.8 + (0.8 \times 5.4)^{2/3} - \dfrac{0.1685 \cdot (5.4)^2}{\sqrt[3]{32.8}}$

= 33.9^{ft}

b = $\dfrac{L'}{3}$ = 11.3^{ft} = 340^{cm}

E_o = $0.01 \times b^{4/3}$ = $0.01 \times (340)^{4/3}$ = 23.2 cm^2/sec

U = 0.4 Nots = 20 cm/sec

β = $\dfrac{12E_o}{Ub}$ = $\dfrac{12 \times 23.2}{20 \times 340}$ = 0.041

$\beta\dfrac{x}{b}$ = $0.041 \times \dfrac{500}{3.4}$ = 6.0

$\dfrac{C_o}{C_{max}}$ = 8 (Magnification, See Fig. D-6-3)

3) Sewage effluent dilution

Three projections of sewage dilution calculated based on the initial dilution nd the horizontal dispersion can be seen in Table D-6-1.

Table D-6-1 PROJECTION OF SEWAGE EFFLUENT DILUTION

CASE 1: Direct discharge on sea shore from sewage treatment plant

Distance from Outlet (m)	Limited Dilution (times)	Horizontal Dispersion (times)	Sea Water Quality (after Dilution)	
			COD (ppm)	Fecal Coliform (MPN/100 ml)
0	--	1.0	40	5,000
50	--	4.7	10	1,250
100	--	4.4	9	1,100
150	--	5.0	8	1,000
200	--	5.6	7	900
300	--	6.3	6	800
500	--	8.0	5	600
1,000	--	9.0	4	550

* Disappearance of fecal coliform is not considered because of its small extinction rate.

CASE 2: Discharge from outfall of 100 m length without any treatment

Distance from Outlet (m)	Limited Dilution (times)	Horizontal Dispersion (times)	Total Dilution (times)	Sea Water Quality (After Dilution)	
				COD (ppm)	Fecal Coliform (MPN/1000 ml)
Outlet	--	--	--	700	4×10^7
0	5	1.0	5.0	140	8×10^6
50	5	4.0	20.0	35	2×10^6
100	5	4.4	22.0	32	1.8×10^6
150	5	5.0	25.0	30	1.6×10^6
200	5	5.6	28.0	25	1.4×10^6
300	5	6.2	31.5	22	1.3×10^6
500	5	8.0	40.0	20	1.0×10^6
1,000	5	9.0	45.0	15	900×10^3

* Disappearance of fecal coliform is not considered because of its small extinction rate.

CASE 3: Discharge from outfall of 100 m length after treatment

Distance from Outlet (m)	Limited Dilution (times)	Horizontal Dispersion (times)	Total Dilution (times)	Sea Water Quality (After Dilution)	
				COD (ppm)	Fecal Coliform (MPN/1000 ml)
Outlet	–	--	--	40	5,000
0	5	1.0	5.0	8	1,000
50	5	4.0	20.0	2	250
100	5	4.4	22.0	2	230
150	5	5.0	25.0	2	200
200	5	5.6	28.0	1	200
300	5	6.3	31.5	1	150
500	5	8.0	40.0	1	125
1,000	5	9.0	45.0	1	100

* Disappearance of fecal coliform is not considered because of its small extinction rate.

Annex II.D.7 LIST OF RESPONDENTS OF SOCIO-CULTURAL SURVEY AT OLD BANTEN PROJECT SITE

Name (Age)		Education	Present Job
* Kabupaten Serang			
1. Haji Tubagus Djadja Sandjadirdja	(58)	Academy of Journalism	Businessman
2. Haji Tubagus Saparuddin	(60)	Senior High School of Technology Military Course	Head of GOLKAR Political Party
* Kecamatan Kasemen			
3. Rachmat	(50)	Junior HIgh School	Camat of Kasemen
4. -	(60)	Elementary School	Secretary in Kecamatan Office
* Desa Banten Lama			
5. Yaya Effendi	(56)	Elementary School	Farmer
6. H.Tb. Afid	(33)	Islamic School/ Madrasah	Religious Propagator
* Kampung Karang Jaya			
7. H. Romli	(37)	Elementary School	Merchant
8. H. Syamsuri	(37)	Elementary School	Seaport Officer
* Kampung Kesatrian			
9. Chaerul	(36)	Elementary school	Merchant
10. Masduki Arif	(54)	Elementary School	Merchant
* Kampung Karangantu			
11. Darsono	(45)	Elementary School	Employee of Fishery Office in Karaghantu
12. Oneng M. Masuduki	(61)	Elementary School	Announcer of Serang Broadcast Station
* Kampung Banten			
13. H. Suaedi	(48)	Islamic School/ Pesatren	Caretaker of Great Mosque
14. H.Tb. Kuncung	(62)	Elementary School	-
* Kampung Kebalen			
15. Iping	(52)	Islamic School/ Pesatren	Farmer
16. Bustomi	(63)	Islamic School/ Pesatren	Caretaker of Great Mosque

Annex II.D.8 RESULTS OF SOCIO-CULTURAL INTERVIEW (Old Banten)

Item	Number	Ratio
1. Sympathetic to the tourism development in Old Banten Area	16	100%
1) Eagerly yes	9	56%
2) Passively yes	4	25%
3) No	–	–
4) Others	3	19%
2. Expectance to the tourism development	30	100%
1) Creation of employment opportunity	10	33%
2) Income increase	7	23%
3) Production increase	–	–
4) Consolidation of infrastructure	–	–
5) Nothing	–	–
6) Others	13	44%
3. Adverse impacts	26	100%
1) Land speculation	7	27%
2) Degradation of public morals	6	23%
3) Sudden collapse of regional socio-economic structure	1	4%
4) Changes in life style of local people in consequence of demonstration effect	3	12%
5) Secularization of ancient rituals	1	4%
6) Alternation of physical environment	2	8%
7) Rise in prices, seasonal swelling in demand and inflationary trend	2	8%
8) Others	4	16%
4. Necessary infrastructure development	32	100%
1) Electricity	–	–
2) Public water service (potable water)	16	50%
3) Road	–	–
4) Sewage treatment	10	31%
5) Telephone	1	3%
6) Irrigation	4	13%
7) Others	1	3%
5. Necessary socio-cultural facility development	30	100%
1) Schools	14	47%
2) Medical facility (Hospital, Clinic)	4	13%
3) Kindergarten, Nursery	–	–
4) Religious facility	1	3%
5) Commercial facility	–	–
6) Sports facility	7	24%
7) Meeting facility	3	10%
8) Amusement	1	3%
9) Others	–	–

Notes: * Items 2-5 are reduplicated answer.

     ** This is the summary of the result of interview to formal and informal leaders of Kabupaten, Kecamatan, Desa and Kampung level.

Annex II.D.9 LIST OF RESPONDENTS OF SOCIO-CULTURAL SURVEY
AT BEACH RESORT PROJECT SITE

Name (Age)	Education	Present Job
* Kabupaten Pandeglang		
1. Haji Tubagus Ace Sadeli (70)	Islamic School	Head of Islamic Organization
2. Haji Tubagus Rafiuddin (76)	Islamic School	Administrator of Islamic School
3. Haji Ahmad Hadi (54)	Islamic School of Education	Staff of Islamic Organization as Islamic Law Expert
* Kecamatan Cigeulis		
4. Dadang Suarya (33)	University	Camat of Cigeulis
5. Jahar (55)	Primary School	Farmer
6. Madris (35)	Religion High School	Farmer
* Desa Tanjung Jaya		
7. Sakri (47)	Primary school	Farmer
8. H.M. Johara (35)	Primary School	Farmer
* Kampung Kalicaah		
9. M. Achyar (60)	Primary School	Farmer
* Kampung Karangantu		
10. Akhamad (30)	Primary Islamic High School	Farmer
11. Syarif (35)	Primary School	Farmer
* Kampung Tanjung Badur		
12. Ramali (35)	Primary School	Farmer
13. Sartaman (37)	Primary School	Farmer
* Kampung Cipanon II		
14. Alham (40)	Religious School	Farmer
15. Kidi (36)	Primary School	Farmer
* Kampung Cipanon Keramat		
16 Umar (32)	School for Teacher Education	Teacher
* Kampung Batu Baleh		
17. M. Sahlan (45)	Junior High School	Farmer
* Kampung Kamancing		
18. Rabai (40)	Primary School	Farmer

Annex II.D.10   THE RESULTS OF SOCIO-CULTURAL INTERVIEW
                 (BEACH RESORT)

Item	Number	Ratio
1. Sympathetic to the tourism development	18	100%
1) Eagerly yes	4	22%
2) Passingly yes	14	78%
3) No	--	--
4) Others	--	--
2. Expect for the tourism development	27	100%
1) Creation of employment opportunity	12	44%
2) Income increase	1	4%
3) Production increase	--	--
4) Consolidation of infrastructure	14	52%
5) Nothing	--	--
6) Others	--	--
3. Adverse impact	52	100%
1) Land speculation	11	21%
2) Degradation of public morals	13	25%
3) Sudden collapse of regional socio-economic structure	1	2%
4) Changes in life style of local people in consequence of demonstration effect	17	33%
5) Secularization of ancient rituals	--	--
6) Alternation of physical environment	--	--
7) Rise in prices, seasonal swelling in demand and inflationary trend	10	19%
8) Others	--	--
4. Necessary infrastructure development	38	100%
1) Electricity	9	24%
2) Public water service (potable water)	8	21%
3) Road	10	26%
4) Sewage treatment	1	3%
5) Telephone	--	--
6) Irrigation	10	26%
7) Others	--	--
5. Necessary socio-cultural facility development	35	100%
1) Schools	8	23%
2) Medical facility (Hospital, Clinic)	13	36%
3) Kindergarten, Nursery	1	3%
4) Religious facility	7	20%
5) Commercial facility	--	--
6) Sports facility	3	9%
7) Meeting facility	3	9%
8) Amusement	--	--
9) Others	--	--

Notes: *   Items 2-5 are reduplicated answer.

         **   This is the summary of the result of interview to formal and
              informal leaders of Kabupaten, Kecamatan, Desa and Kampung
              level.

Annex II.D.11 A BRIAF SURVEY ON SOCIO-ECONOMIC CONDITION OF KECAMATAN CIGEULIS AND DESA TANJUNG JAYA

No.	Respond-ents	Primary Job	Seconary Job	Average Income per Month	Mean of Transport Used	Freetime Usage	Market Orienta-tion for selling Local Com-modities
		(1)	(2)	(3)	(4)	(5)	(6)
1.	Mr. Mamad (53) Kecamatan Cigeulis	Staff of Kecamatan office (clerk)	Farmer (banana, coconut, cassava, clove, coffee)	±Rp.200,000 (25/27)	–Public transport (7 km)	–Working in the farm	–Citereup –Panimbang Jaya
2.	Mr. Sakri (43) Desa Tanjung Jaya	Head of Desa Tan-jung Jaya	Farmer (coconut, coffee, cloved, banana)	±Rp.200,000 (–/100) 50% from farming 50% boat rental	–Motorcycle (3.5 km)	–Working in the farm –Badmin-ton (some-time)	–Citereup –Labuan (by boat)
3.	Mr. Sani (32) Kampung Kalicaah	Farmer (coconut, clove, coffee, banana)	Nothing	R.50,000 (100/0)	–by foot (4-5 km)	–Working in the farm	–Citereup –Lubuan
4.	Mr. M. Sahian (45) Kapung Kamancing	Farmer (coffee, banana, clove, nut, coconut, rice)	Golkar Party Commissioner of Kecamatan Cigeulis (Informal leader)	±Rp.90,000 (100/–)	–by foot (living in the farm) Cigeulis	–Listening to the Radio –Visiting Cireurep and	–Citereup –Panimbang

Market Orientation for buying daily needs (7)	Ownership of goods (8)	Energy (9)	Amenity of Surrounding			
			Safety (10)	Healthy (11)	Convenience (12)	Comfortability (13)
1. -Citereup/ -Sobang -Peddlers/ vendors ('credit system')	Radio, bicycle	-Firewood for cooking -Kerosene for lighting -Batteries for the radio	Good (no crime)	Moderate	Bad	Poor
2. -Citereup -Panimbang -Labuan	TV set (black & white), radio, bycycle motorcycle, boat, sewing machine	-Firewood for cooking -Kerosene for lighting -Batteries for electric goods	Good (no crime)	Poor (malaria)	Bad (no electricity, telephone, etc.)	Bad (no public facilities)
3. -Cietureu -Malicaah	Nothing	-Firewood for cooking -Kerosene for lighting	Good	Poor (malaria)	Bad (no electricity, telephone, etc.)	Bad (No public facilities)
4. -Citereup -Kalicaah	Radio	-Firewood for cooking -Kerosene for lighting	Good	Moderate (no malaria in mountainous area)	Bad (no road, electricity, phone, etc.)	Bad (no public facilities)

1. The main food in Kecamatan Cigeulis is rice.
2. Mr. Sani (respondent no. 3) and his family also eat 'Latuh', a kind of marine plant or seaweed taken from the rock during the time of ow tide.
3. Respondent no. 2 (Mr. Sakri) has a boat which brings 1,000 - 1,500 sisir of Banana once to three times in a week from Kapung Tanjung Badur and Cipanon to Lubuan.
4. Transport cost by boat from each Kapung of Tanjung Jaya to Labuan:
   - dry coconut: Rp.   50 per kg
   - Banana: Rp.50 per 3 sisir
   - Firewood: Rp.50 - 75 per bunch
5. Mr. Sakri charges his batteries in Citereup, Panimbang and Labuan.
   - Citereup: Rp.1,000 for two-days usage
   - Panimbang: Rp. 750 for three-days usage
   - Labuan: Rp. 500 for ten-days usage
6. Marriage
   Man: 22 - 25 years old
   Woman: 18 - 20 years old

Annex II.D.12   INVESTIGATION SHEETS OF
THE STATISTICAL DATA

1)   Questionnaire of Socio-Cultural Condition

Kecamatan

Survey Date: _____   No.: _____

Answerer: _____

Post or Title: _____

Alamat/Kecamatan: _____

Desa: _____

Kampung: _____

Interviewer: _____

Social Condition of Kecamatan

01. Population in Kecamatan in (19)

    Male: _____ Persons, Female: _____ Persons,
    Total: _____ Persons

02. Household in Kecamatan: _____ households in (19)

03. Area of Kecamatan: _____ Km^2

04. Location of Kecamatan

    - Please check the Map

05. Population by age group in Kecamatan

(198)

Age group (years old)	Population (persons)		
	Male	Female	Total
0 - 4			
5 - 9			
10 - 19			
20 - 39			
40 - 49			
50 - 59			
60 - 69			
70 -			
Total			

06. Religion in Kecamatan

Religion	% by household
1. Islam	
2. Islam (enthusiasm)	
3. Catholic	
4. Protestant	
5. Hindu	
6. Buddhist	
7. Others (Specify:)	
8. Total	100

07. Ethnic group in Kecamatan

		% by household
1.	Sunda	
2.	Java	
3.	Melayu	
4.	Chinese	
5.	Others (Specify:)	
6.	Total	100

08. Language Use in Kecamatan

	Language	%
1.	Indonesia	
2.	Sundanese	
3.	Jawanese	
4.	Others (Specify:)	
5.	Total	100

09. Employment in Kecamatan

		Persons	%
1.	Agriculture		
2.	Fishery		
3.	Forestry		
4.	Commerce		
5.	Industry		
6.	Service (transportation)		
7.	Public official		
8.	No job		
9.	Others (specify:)		
10.	Total		100

10. Socio-cultural facilities in Kecamatan

1) School

School	Unit	No. of Teachers	No. of Students
1. Kindergarten			
2. Elementary School			
3. Junior High School			
4. Senior High School			
5. Islamic School			
6. Vocational School			
7. Nursery			
8. Others (Specify:)			
9. Total			

2) Medical Facility

Item	Unit	No. of Doctors
1. Hospital		
2. Clinic		
3. Others (Specify:)		
4. Total		

3) Religions Facility

Item	Unit
1. Mosque	
2. Church	
3. Temple (Buddhism)	
4. Others (Specify:)	
5. Total	

4) Commercial Facility

Item	Unit
1. Fishery Market	
2. Agricultural Market	
3. Shopping Market (Industrial commodity)	
4. Others (Specify:)	
5. Total	

5) Sports Facility

Item	Unit
1. Football ground	
2. Valley ball	
3. Others (Specify:)	
4. Total	

6) Meeting Facility

Item	Unit
1. Hall	
2. Others (Specify:)	

7) Amusement

Item	Unit
1. Movie Theatre	
2. Others (Specify:)	

Outline of Kecamatan

11. Glorious tradition and culture to be preserved
    (explain in detail as much as possible: location,
    contents)

    1) Building and Structure

        a. _____
        b. _____
        c. _____

    2) Literature

        a. _____
        b. _____
        c. _____

    3) Events (festival)

        a. _____
        b. _____
        c. _____

    4) Event Assets

        a. _____
        b. _____
        c. _____
        d. _____

    5) Entertainments

        a. _____
        b. _____
        c. _____

    6) Personage

        a. _____
        b. _____
        c. _____

2) Questionnaire of Socio-Cultural Condition

Desa

Survey Date: _____ No.: _____

Answerer: _____

Post or Title: _____

Alamat/Kecamatan: _____

Desa: _____

Kampung: _____

Interviewer: _____

Social Condition of Desa

01. Populatin in Desa in (19)

      Male: _____ Persons, Female: _____ Persons,
      Total: _____ Persons

02. Household in Desa: _____ households in (19)

03. Area of Desa: _____ Km^2

04. Location of Desa

    - Please check the Map

05. Population by age group in Desa

(198)

Age group (years old)	Population (persons)		
	Male	Female	Total
0 - 4			
5 - 9			
10 - 19			
20 - 39			
40 - 49			
50 - 59			
60 - 69			
70 -			
Total			

06. Social Condition of Desa by Kampung in (19   )

Name of Kampung	Population (Persons)			Number of Household	Area (ha)
	Male	Female	Total		
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					

07. Religion in Desa

Religion	% by household
1. Islam	
2. Islam (enthusiasm)	
3. Catholic	
4. Protestant	
5. Hindu	
6. Buddhist	
7. Others (Specify:)	
8. Total	100

08. Ethnic group in Desa

	% by household
1. Sunda	
2. Java	
3. Melayu	
4. Chinese	
5. Others (Specify:)	
6. Total	100

09. Language Use in Desa

Language	%
1. Indonesia	
2. Sundanese	
3. Jawanese	
4. Others (Specify:)	
5. Total	100

10. Employment in Desa

	Persons	%
1. Agriculture		
2. Fishery		
3. Forestry		
4. Commerce		
5. Industry		
6. Service (transportation)		
7. Public official		
8. No job		
9. Others (specify:)		
10. Total		

11. Socio-cultural facility in Desa

1) School

School	Unit	No. of Teacher	No. of Student
1. Kindergarten			
2. Elementary School			
3. Junior High School			
4. Senior High School			
5. Islamic School			
6. Vocational School			
7. Nursery			
8. Others (Specify:)			
9. Total			

2) Medical Facility

Item	Unit	No. of Doctor
1. Hospital		
2. Clinic		
3. Others (Specify:)		
4. Total		

3) Religions Facility

Item	Unit
1. Mosque	
2. Church	
3. Temple (Buddhism)	
4. Others (Specify:)	
5. Total	

4) Commercial Facility

Item	Unit
1. Fishery Market	
2. Agricultural Market	
3. Shopping Market (Industrial commodity)	
4. Others (Specify:)	
5. Total	

5) Sports Facility

Item	Unit
1. Football ground	
2. Valley ball	
3. Others (Specify:)	
4. Total	

6) Meeting Facility

Item	Unit
1. Hall	
2. Others (Specify:)	

7) Amusement

Item	Unit
1. Movie Theatre	
2. Others (Specify:)	

Outline of Desa

12. Glorious tradition and culture to be preserved
    (explain in detail as much as possible:
    location, contents)

    1) Building and Structure

        a. _____

        b. _____

        c. _____

    2) Literature

        a. _____

        b. _____

        c. _____

    3) Event (festival)

        a. _____

        b. _____

        c. _____

    4) Event Assets

        a. _____

        b. _____

        c. _____

        d. _____

    5) Entertainments

        a. _____

        b. _____

        c. _____

    6) Personage

        a. _____

        b. _____

        c. _____

Annex II.D.13 QUESTIONNAIRES OF INTERVIEW SURVEY

1) Questionnaire of Concerning Tourism Development

OLD BANTEN & BEACH RESORT

(Kecamatan, Desa, Kampung)

Survey Date: _____ No.: _____

Answerer: _____

Age _____ years old

Number of family members (living together)

_____ persons

Education (the grade of educattion) _____

What is your primary job ? _____

Post or Title: _____

Alamat/Kecamatan: _____

Desa: _____

Kampung: _____

Interviewer: _____

Opinion on Tourism Development

1. Are you sympathetic to the Tourism Development in Old
   BANTEN AREA (Banten Lama)?   Choose one answer among
   folowing.

   (OLD BANTEN Tourism Complex:
     Restoration of ancient assets, art theatre, folk art
     museum, shops and restaurants)

   1) Eagerly yes

   2) Passively yes
           Reasons: _____

                     _____

                     _____

   3) No   Reasons: _____

                     _____

                     _____

   4) Others
           Reasons: _____

                     _____

                     _____

2. What do you mostly expect for the tourism development?
   Choose one answer among following.

   1) Creation of employment opportunity
   2) Income increase
   3) Production increase
   4) Consolidation of infrastructure
   5) Nothing
   6) Others (specify): _____

D.36

3. Are there any folk art, folk performance and folk craft in your Kampung, Desa, Kecamatan, which can participate in new tourism development? Choose one answer among following.

1) Yes ----
   Explain in detail _____
   _____
   _____

2) There are some, but no participation ----
   Reason _____
   _____
   _____

3) There is nothing

4) Others (Specify):
   _____
   _____
   _____

4. What kind of adverse impacts are you afraid of subsequent to the tourism development in your region? Please choose and check three impacts among following items.

1) Land speculation

2) Degradation of public morals

3) Sudden collapse of regional socio-economic structure (ex. outflow of labor from primary sector into high-paying sector)

4) Changes in life style of local people in consequence of demonstration effect

5) Secularization of ancient rituals
   (Commercialization of traditional performing arts)

6) Alternation of physical environment
   (Pollution of air and water, noise, waste, detrimental effects on fauna and flora, etc.)

7) Rise in prices, seasonal swelling in demand and inflationary trend

8) Others (Specify): _____

_____

_____

5. What kind of infrastructure is needed in your Kampung, Desa, Kecamatan? Please choose two answers among following.

1) Electricity
2) Public water service (potable water)
3) Road
4) Sewage treatment
5) Telephone
6) Irrigatin
7) Others (Specify):

_____

6. What kind of socio-cultural facility is needed in your Kampung, Desa, Kecamatan? Please choose two answers among following.

1) Schools
2) Medical facility (Hospital, Clinic)
3) Kindergarten, Nursery
4) Religious facility, (Specify): _____
5) Commercial facility (Specify): _____
6) Sports facility, (Specify): _____
7) Meeting facility, (Specify): _____

8) Amusement, (Specify): _____

9) Others, (Specify): _____

7. What taboo are there in your life ? (Specify)

    1) Daily life

      _____
      _____
      _____

    2) Religion

      _____
      _____
      _____

    3) Ceremonies

      _____
      _____
      _____

    4) Others

      _____
      _____
      _____

8. Suggestions/opinions

If you have some suggestions/opinions on the tourism development, please express them frankly hereafter.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank you very much for your kind cooperation.

ANNEX II.E

PROJECT EVALUATION

Annex II.E.1 BASIC CONCEPT OF THE FINANCIAL INTERNAL RATE
OF RETURN (FIRR)

The common method for evaluating the financial viability of a
project is to calculate the financial internal rate of return
(FIRR). It is the discount rate which leads to a net present
value (NPV) of zero when discounting financial cost and
benefit streams. Under this criterion, a project is
acceptable if its IRR equals or exceeds the opportunity cost
of capital.

The IRR analysis calls for consistent establishment of all
cash cost and benefit streams under the same estimated time
frame (project implementation and project life). Typically
the analyst must distinguish between (i) capital cost streams,
(ii) operating cost streams and (iii) revenue streams (benefit
streams). The sum total of costs and benefits for each year
results in the "net benefit" for each year. Depending on the
absolute size of all costs and benefits for a given year the
net benefit can be positive or negative. The stream of annual
net benefits is simply referred to as the net benefit stream.
One can think of the analytical framework of the IRR
calculation as a matrix consisting of the annual cost and
benefit streams. Typical table format of the matrix is shown
below:

IRR Analysis: Cost/Benefit Streams

	Year	x Capital Cost Streams	Operating Cost Streams	y Benefit Streams	z Net Benefit Stream (y - x)
Project	1	C_1	O_1	B_1	N_1
Implement-	2	C_2	O_2	B_2	N_2
ation	.	.	.	.	.
	m	Cm	Om	Bm	Nm
Project	m+1	C_{m+1}	O_{m+1}	B_{m+1}	N_{m+1}
Life	.	.	.	.	.
	.	.	.	.	.
	m+n	C_{m+n}	O_{m+n}	B_{m+n}	N_{m+n}

where m = project implementation time in years; and
       n = economic project life in years

In the above table, the FIRR is the discount rate (r) which makes the following equation hold good.

$$\text{Net Present Value (NPV)} = \sum_{t}^{m+n} \frac{N_t}{(1+r)^t}$$

$$= \frac{N_1}{1+r} + \frac{N_2}{(1+r)^2} \cdots \frac{N_m}{(1+r)^m} \cdots \frac{N_{m+n}}{(1+r)^{m+n}}$$

$$= 0$$

The r value cannot be solved analytically, therefore a computer is often used to obtain the value of r by seeking (by trial and error method) the value which makes the NPV almost zero.

Annex II.E.2 BASIC CONCEPT OF THE ECONOMIC INTERNAL RATE OF RETURN (EIRR)

Useful as the financial rate of return is, it usually does not give an accurate indication of a project's net impact on a country's economy. To obtain such an indication, one turns to the economic rate of return. This measure determines the economic merit of the project from the country's viewpoint. It therefore treats import duties, sales taxes, profit taxes, and other government levies (or subsidies) as internal transfers within the country and disregards them, since they do not affect the overall wealth of that economy. It also uses "Shadow prices" instead of domestic input and output prices, in case they do not adequately reflect the opportunity costs to the economy.

The economic benefits and costs are obtained by deducting the above internal transfers and converting the market prices to shadow prices.

The economic rate of return (EIRR) enables to measure an investment's efficiency of using the resources of an economy. EIRR is the discount rate at which the discounted economic benefits of the project are equal to the costs. The methodology of calculation of EIRR is quite same as that of FIRR.

Annex II.E.3 SENSITIVITY TO THE DELAY OF DEVELOPMENT

(1) Old Banten Site

Sensitivity of FIRR and EIRR to the delay of development was tested based on the modification of the tourism demand forecast as shown below.

Table E-3-1 NUMBER OF VISITORS IN CASES OF DEVELOPMENT DELAY

Unit: thousand persons

Year	without project	on schedule	1 year delay	2 year delay	3 year delay	4 year delay	5 year delay
1989	1314.5						
1990	1338.4						
1991	1362.3						
1992	1386.2						
1993	1410.1						
1994	1434.0	1648.6					
1995	1457.9	1763.1	1672.5				
1996	1481.8	1791.9	1787.0	1696.4			
1997	1505.7	1820.7	1815.8	1810.9	1720.3		
1998	1529.6	1849.7	1844.6	1839.7	1834.8	1744.2	
1999	1553.5	1944.9	1873.6	1868.5	1863.6	1858.7	1768.1
2000	1577.4	1974.8	1968.8	1897.5	1892.4	1887.5	1882.6
2001	1601.3	2004.9	1998.7	1992.7	1921.4	1916.3	1911.4
2002	1625.2	2035.2	2028.8	2022.6	2016.6	1945.3	1940.2
2003	1649.1	2065.7	2059.1	2052.7	2046.5	2040.5	1969.2
2004	1673.0	2096.2	2089.6	2083.0	2076.6	2070.4	2064.4
2005	1696.9	2132.6	2120.1	2113.5	2106.9	2100.5	2094.3
2006	1720.8	2235.7	2156.5	2144.0	2137.4	2130.8	2124.4
2007	1744.7	2487.7	2259.6	2180.4	2167.9	2161.3	2154.7
2008	1768.6	2523.2	2511.6	2283.5	2204.3	2191.8	2185.2
2009	1792.5	2558.9	2547.1	2535.5	2307.4	2228.2	2215.7
2010	1816.4	2590.0	2582.8	2571.0	2559.4	2331.3	2252.1
2011	1840.3	2638.1	2613.9	2606.7	2594.9	2583.3	2355.2
2012	1864.2	2686.2	2662.0	2637.8	2630.6	2618.8	2607.2
2013	1888.1	2734.3	2710.1	2685.9	2661.7	2654.5	2642.7
2014	1912.0	2782.4	2758.2	2734.0	2709.8	2685.6	2678.4
2015	1935.9	2830.5	2806.3	2782.1	2757.9	2733.7	2709.5
2016	1959.8	2878.6	2854.4	2830.2	2806.0	2781.8	2757.6
2017	1983.7	2926.7	2902.5	2878.3	2854.1	2829.9	2805.7
2018	2007.6	2974.8	2950.6	2926.4	2902.2	2878.0	2853.8
2019	2031.5	3022.9	2998.7	2974.5	2950.3	2926.1	2901.9
2020	2055.4	3071.0	3046.8	3022.6	2998.4	2974.2	2950.0

The results of sensitivity analysis are as follows:

| Delay | FIRR | EIRR | |
		with consumer's surplus	without consumer's surplus
0 year	5.2%	46.0%	11.8%
1 year	5.0%	46.4%	11.7%
2 year	4.8%	46.7%	11.6%
3 year	4.6%	47.1%	11.5%
4 year	4.3%	47.4%	11.4%
5 year	3.9%	47.7%	11.2%

FIRR for each case shows that a higher financial rate of return can be expected from earlier embarkment on the project. EIRR, on the other hand, shows inconsistent results between the cases of with and without consumer's surplus.

EIRRs including consumer's surplus in their benefits are slightly higher when the development starts later. However, the rate of more than 40% firmly proves the economic effectiveness of the project and indirect benefits are fairly important as shown in 3.9.6 of the Implementation Program (Main Report). If the development is delayed, achievement of such effects on regional socio-economy will also be delayed.

(2) Tanjung Lesung Beach Resort

The results of sensitivity analysis for the Beach Resort
are as follows:

| Delay | FIRR | EIRR | |
		with consumer's surplus	without consumer's surplus
0 year	18.2%	21.6%	34.9%
1 year	18.0%	21.6%	34.9%
2 year	17.8%	21.5%	34.9%
3 year	17.6%	21.4%	34.9%
4 year	17.4%	21.3%	34.9%
5 year	17.1%	21.2%	34.8%

According to the above results, the later the development
is delayed, the lower the effectiveness will be in both
financial and economic terms.

Annex II.E.4   METHODOLOGY OF CALCULATING CONSUMER'S SURPLUS

(1)   Consumer's surplus

The concept of consumer's surplus can be derived from the
theory of diminishing marginal utility which shows that
after a point each successive increment one obtains of a
commodity yields less utility or satisfaction than the
preceding increment. If a person buys three units of a
commodity at $1 per unit, the first dollar-worth of the
commodity yields him more satisfaction than a second
dollar-worth, and a second dollar-worth yields more
satisfaction than a third. Since it is assumed that he
would not have bought the third unit for $1 unless he had
considered that it would yield him that amount of
satisfaction, it can be agreed that the first and second
units each yield him more than a dollar-worth of
satisfaction. This additional satisfaction is considered
to be consumer's surplus.

When we have a demand curve (d) for a certain product as
shown in the figure below, we call OPD_1Q_1 consumer's
willingness to pay. As explained above, consumer's
surplus equals consumer's willingness to pay less
consumer's actual payment. Thus, in this figure,
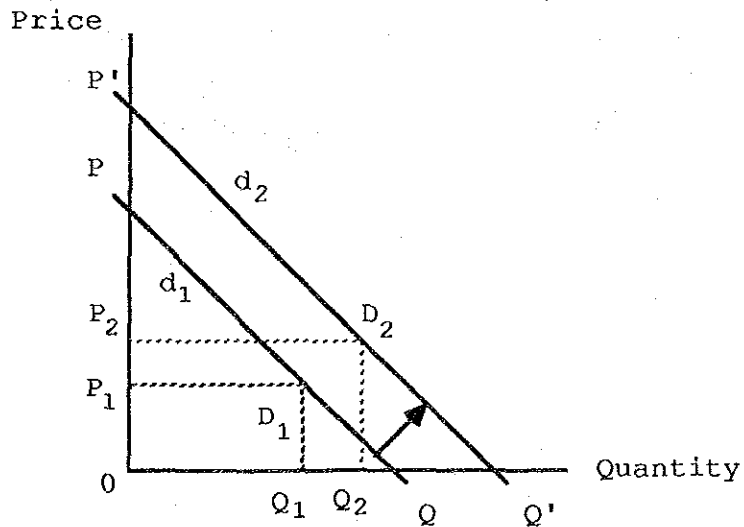consumer's surplus is the area of hatched triangle PP_1D_1.

Fig. E-5-1
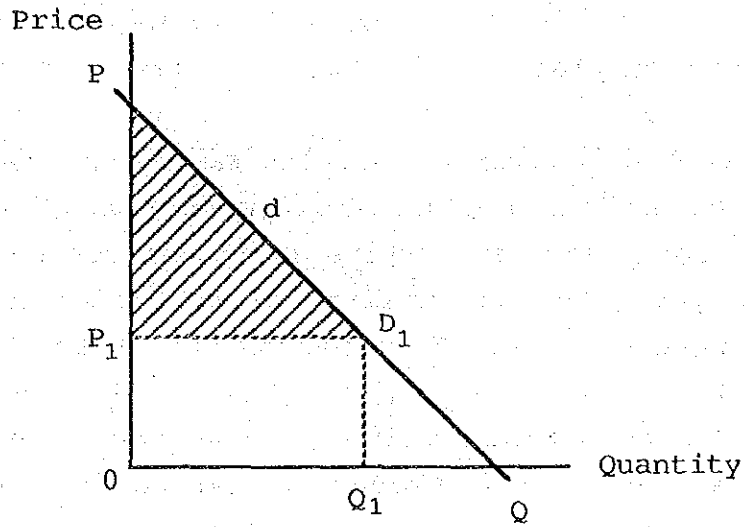
(2) Estimation of consumer's surplus

The value amount of incremental consumer's surplus for
the projects was estimated on the assumption that demand
curve for the recreation is a linear line and that the
demand curve will shift parallely to the upper-right.

Fig. E-5-2

In the above figure, d_1 and d_2 represent the demand curve for without and with project case respectively. As explained before, the consumer's surplus in each case is PP_1D_1 and $P'P_2D_2$. Thus the incremental consumer's surplus is obtained as the difference between PP_1D_1 and $P'P_2D_2$.

1) Old Banten

For calculation of the value amount of consumer's surplus, the demand curve for the recreation as of 1985 was estimated from the data of expenditure per person and number of visitors to Old Banten and Karang Bolong (a recreational park in the study area) as shown below.

	Old Banten	Karang Bolong
Area	16 ha	2 ha
No. of visitors (as of 1985)	1,195,000	102,519
Expenditure/person	Rp.7,550	Rp.10,890
– Transportation	6,800	9,700
– Entrance Fee	–	393.7
– Parking Fee	–	44.6
– Other Expenditure	750	750

Source: Interview survey by the Study Team

As a result, the linear demand curve was determined by the following formula after an adjustment allowing for the difference in the areas.

$$P = 18.220 - 0.008937Q$$

where P = expected expenditure per person
       Q = number of visitors

The elasticity of demand to a change of price is calculated at:

$$E = 1.023$$

Next, the demand curves in 1994, when the Project is planned to start working, was estimated by shifting it in a parallel manner.

	Without Project	With Project
Expenditure/person (P)	Rp.7,550	Rp.8,017
No. of visitors (Q)	1,434,000	1,648,600

Then the formula applied are:

without Project: $P = 20,356 - 0.08937Q$
with Project: $P = 22,751 - 0.08937Q$

The points on the coordinates i.e. (P, Q) = (7,550, 1,434,000) and (P, Q) = (8,017, 1,648,000) represent d_1 and d_2 in Fig. E-5-2. The incremental consumer's surplus obtained by $PP_2D_2 - PP_1D_1$ was calculated as follows:

PP_2D_2 = {1,648,600 x (22,751 - 8,017)} ÷ 2
           = 12,145,236,200

PP_1D_1 = {1,434,000 x (20,356 - 7,540)} ÷ 2
           = 9,189,072,000

then, $PP_2D_2 - PP_1D_1$ = (Rp.) 2,956,164,200

At the same time, the incremental consumer's surplus for the (n) year will be:

$$(q_n^w \times 0.008937 \cdot q_n^w - q_n^o \times 0.08937 \cdot q_n^o) \div 2$$

$$= 0.004469 \ (q_n^{w2} - q_n^{o2}),$$

where q_n^w is the number of visitors in the year of (n) with Project and q_n^o is that without project.

2) Beach Resort

In the case of the Beach Resort Project, we have only the with project case since the project will be newly constructed. Then the value amount of consumer's surplus can be estimated only if the demand carve is determined. However, in this case, it is very difficult to determine it because that there is no comparable resort area in Java to the envisaged Beach Resort. Therefore, the demand curve was inferred by assuming the degree of elasticity of demand at 2.0 for the reason below:

The number of visitors and expenditure per person as of 1995 estimated by the study team are:

Indonesian visitors - 92,900 (see Table 4-9-2 of volume 4)

Expenditure (including transportation) - Rp.130,210 (divide the total revenue of the Project by number of visitors and add the transportation fee of Rp.12,000)

Compared to the case of Old Banten, the number of visitors is very small and expenditure is very high.

Accordingly a unit change of expenditure causes only a slight percentage change and a unit change of visitors causes very drastic percentage change. As a consequent, the degree of elasticity obtained by (percentage change in quantity) ÷ (percentage change in price) will be higher than that of Old Banten Site.

The linear demand curve from which $E = 2.0$ can be derived is:

$$P = 426,630 - (284,420 + q_n) \cdot Q,$$

where P = expected expenditure per person
      Q = number of visitors
      q_n = number of visitors to Beach Resort in the year of (n)

The value amount of consumer's surplus derived from above demand curve is:

$$(426,630 - 142,210) \times q_n \div 2 = (Rp.)\ 142,210\ q_n$$

Annex II.E.5   ECONOMIC COST OF TRANSPORTATION

The economic cost of transportation was estimated adopting the average cost per km of each type of vehicles as shown below:

- Sedan   Rp.   128.1/km
- Bus   large   Rp.   317.0/km
               small   Rp.   157.1/km
- Motorcycle   Rp.   40.0/km

Source: BINA MARGA, 1985

The above costs include all of the costs entailed on transportation such as maintenance of road and fuel for vehicles. The economic cost of transportation per person was calculated based on the above cost per vehicle, composition of visiting vehicles and average member of passengers per vehicle.

	cost/km	ratio	person/vehicle
Sedan	Rp.128.1	60%	3.5
Bus	317.0	12	50
Minibus	157.1	8	30
Motorcycle	40.0	10	1.2

Cost/person-km   = Rp.128.1/3.5 x 0.6 + Rp.317.0/50
(Old Banten Project)   x 0.12 + Rp.157.1/30 x 0.08
                          + Rp.40.0/1.2 x 10
                        = Rp.26.46

Cost/person   = Rp.26.46 x 105 (km: Jakarta
                          - Old Banten)
                        = Rp.2,778

The economic transportation cost for the Beach Resort was estimated assuming the same composition of vehicles and passengers per vehicle as in the Old Banten Site.

Cost/person-km (Beach Resort) = Rp.26.46 (same as Old Banten Site)

Cost/person = Rp.26.46 x 185 (km: Jakarta - Tanjung Lesung)
= Rp.4,892

VOLUME⑤
IMPLEMENTATION
PROGRAMME
(ANNEX Ⅱ)

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