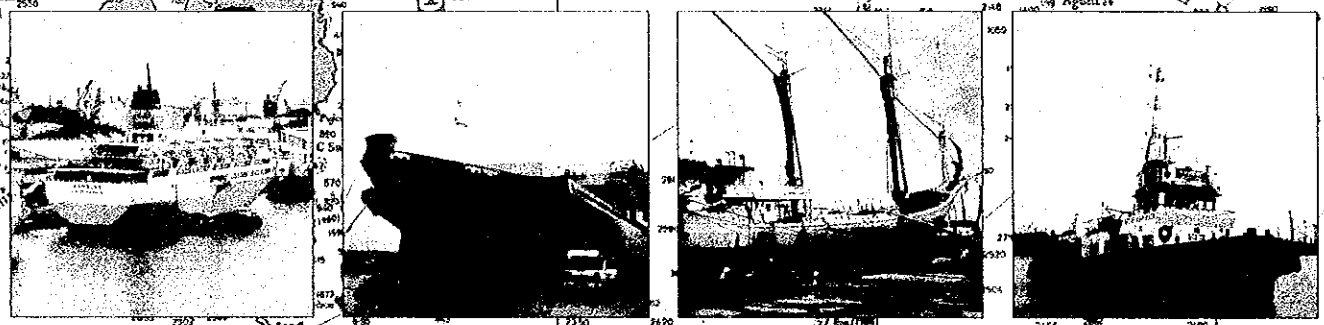


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Ministry of Communications

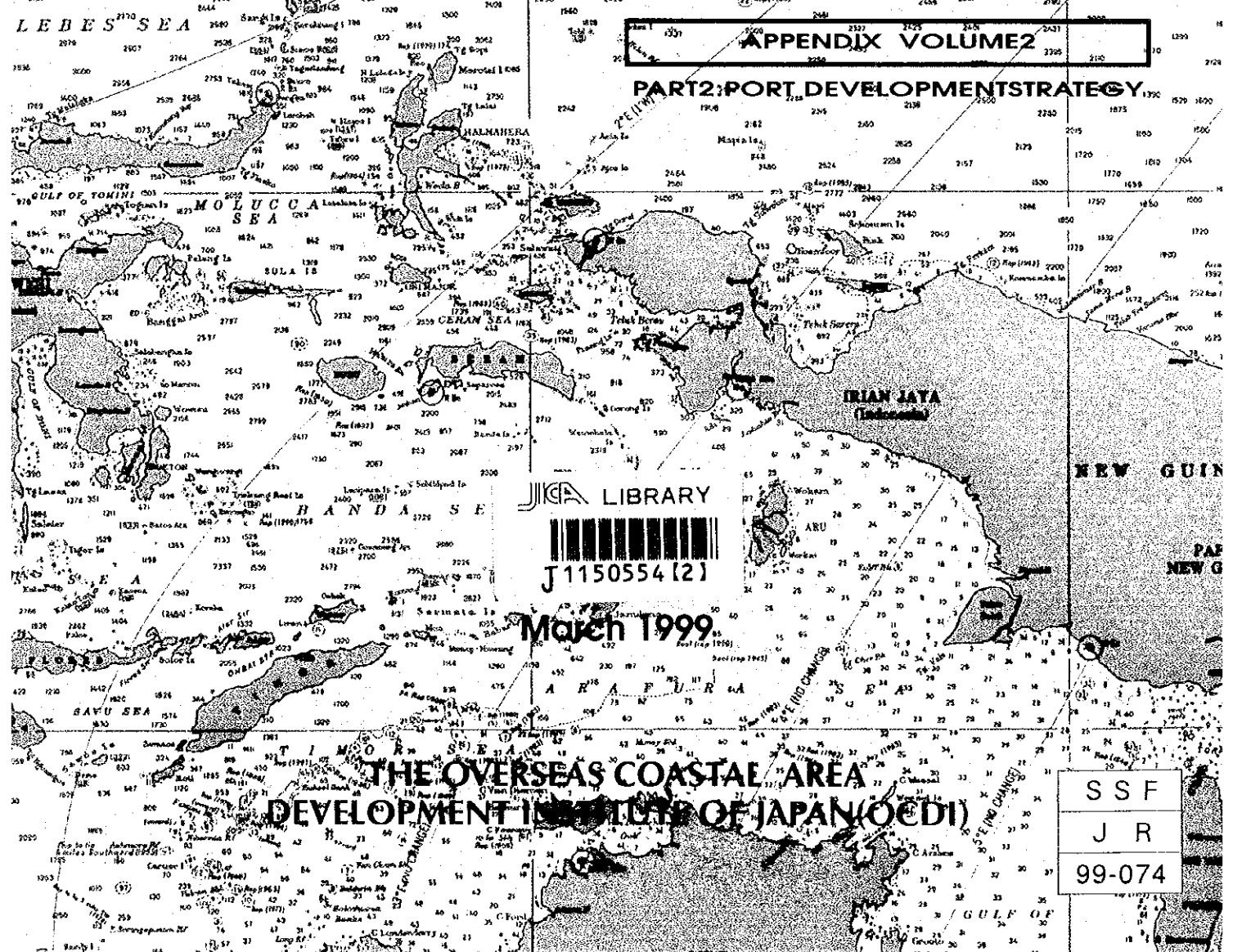
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FINAL REPORT THE STUDY ON THE PORT DEVELOPMENT STRATEGY IN THE REPUBLIC OF INDONESIA



APPENDIX VOLUME 2

PART 2: PORT DEVELOPMENT STRATEGY



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March 1999

THE OVERSEAS COASTAL AREA
DEVELOPMENT INSTITUTE OF JAPAN (OEDI)

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PREFACE

In response to a request from the Government of the Republic of Indonesia, the Government of Japan decided to conduct a study on Port Development Strategy in the Republic of Indonesia and entrusted to study to the Japan International Cooperation Agency.

JICA selected and dispatched a study team headed by Dr. Tadahiko Yagyu, Senior Advisor of the Overseas Coastal Area Development Institute of Japan (OCDI) to the Republic of Indonesia, three times between November 1997 and December 1998.

The team held discussions with the officials concerned of the Government of the Republic of Indonesia and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of this project and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Indonesia for their close cooperation extended to the study.

March 1999



Kimio Fujita

President

Japan International Cooperation Agency

LETTER OF TRANSMITTAL

March 1999

Mr. Kimio FUJITA
President
Japan International Cooperation Agency

Dear Mr. Fujita:

It is my great pleasure to submit herewith the Final Report of the Study on Port Development Strategy in the Republic of Indonesia.

The study team of the Overseas Coastal Area Development Institute of Japan (OCDI) conducted surveys in the Republic of Indonesia over the period between November 1997 and December 1998 as per the contract with the Japan International Cooperation Agency.

The findings of this study, which are compiled in this report, were fully discussed with the officials of the Ministry of Communications of the Indonesian Government and other authorities concerned to formulate the Port Development Strategy in the Republic of Indonesia for the period up to the year 2018.

On behalf of the study team, I would like to express my heartfelt appreciation to the Government of the Republic of Indonesia, the Ministry of Communications and other authorities concerned for their diligent cooperation and assistance and for the heartfelt hospitality which they extended to the study team during our stay in the Republic of Indonesia

I am also greatly indebted to the Japan International Cooperation Agency, the Ministry of Foreign Affairs, the Ministry of Transport and the Embassy of Japan in Indonesia for giving us valuable suggestions and assistance during the preparation of this report.

Yours faithfully,



Tadahiko Yagyu

Team Leader for the Study
on Port Development Strategy
in the Republic of Indonesia



Map of Indonesia

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ABBREVIATION LIST

A	ADPEL	Port Administrator Office
	AMDAL	Environmental Impact Analysis
	ADB	Asian Development Bank
	ASEAN	Association of South East Asian Nations
	ATN	Aids to Navigation
B	BAPEDAL	Environmental Impact Management Agency
	BAPPEDA	Provincial Development and Planning Board
	BAPPENAS	National Development Planning Agency
	BHI	Indonesia Legal Entity
	BIRO	Bureau
	BKPM	Investment Coordination Board
	BKPMD	Regional Investment Coordination Board
	BOD	Biological Oxygen Demand
	BOR	Berth Occupancy Rate
	BOT	Built-Operate-Transfer
	BPS	Central Bureau of Statistics
	BTKP	Shipping Safety Technology Office
C	BUMN	State-Owned Company
	CFC	Chlorofluorocarbon
	CFS	Container Freight Station
	CHT	COSCO-HIT Terminals (Hong Kong) Limited.
	COD	Chemical Oxygen Demand
	COSCO	China Ocean Shipping Company
	CT I	Container Terminal I
D	Dati I	First Level Local Government (Province)
	Dati II	Second Level Local Government (District / Municipality)
	DGLC	Directorate General of Land Communication
	DGSC	Directorate General of Sea Communication
	DNI	Negative Investment List
	DO	Delivery Order
	DO	Dissolved Oxygen

E	EDI	Electric Data Interchange
	EIA	Environmental Impact Assessment
	EIDC	Eastern Indonesia Development Council
	EIJA	Export Import Bank of Japan
	EMKL	Sea Freight Forwarding Company
F	FIRR	Financial Internal Rate of Return
	FOI	Foreign Direct Investment
G	GBHN	National Development Guideline
	GDP	Gross Domestic Product
	GHG	Green House Gas
	GOI	Government of Indonesia
	GOJ	Government of Japan
	GRDP	Gross Regional Domestic Product
	GRT	Gross Register Tonnage
	GT	Gross Tonnage
H	HGB	Building Use Right
	HIT	Hongkong International Terminal Limited.
	HMC	Harbor Mobile Crane
I	IBRD	International Bank of Reconstruction and Development
	IDB	Islamic Development Bank
	IEAT	Industrial Estate Authority of Thailand
	ILS	Inter-Island Liner System
	IMF	International Monetary Fund
	INPRES	President Instruction
	INSA	Indonesian National Ship Owner Association
	IPC	Indonesia Port Corporation
J	JICA	Japanese International Cooperation Agency
	JKT	Jakarta
	JO	Joint Operation
	JVC	Joint Venture Company

K	KANPEL	Port Administration Office (Non-commercial Port)
	KANWIL	Province Office of a Central Ministry
	KANWIL DEPHUB	Regional Office of MOC
	KAPET	Integrated Economical Development Area
	KM	Minister Decree
	KSO	Kerjasama Operasi (Joint Operation)
L	L't Beacon	Lighted Beacon
M	MOC	Minister of Transport
	MOF	Minister of Finance
	MOTC	Ministry of Transport and Communications of Thailand
	MOU	Minute of Understanding
	MPA	Maritime and Port Authority
	MSDP	Maritime Sector Development Program
	MSTC	Maritime Training Center
	MTL	Modern Terminals Limited.
N	Nav. Aids	Navigation Aids
	NPSP	National Port System Plan
O	OD	Origin and Destination
	OECF	Overseas Economic Cooperation Fund
P	PAT	Port Authority of Thailand
	PBM	Stevedoring Company
	PBMTO	Terminal Operator Loading-unloading
	PDB	Port Development Board
	PEB	Export Documents
	PELNI	Indonesian National Shipping Company
	PERINTIS	Pioneer Ship System to Serve Remote Area
	PERUMKA	Indonesia State Railways
	PELRA	Rakyat (Traditional Wooden Vessel)
	PERSERO	State-Owned Company
	PERTAMINA	State-Owned Oil Company
	PERUM ASDP	State-Owned Ferry Terminal Company
	PJP II	The Second Long Term Development Plan

	PKL	Local Activity Center
	PKN	National Activity Center
	PKW	Regional Activity Center
	PL	Sailing Vessel
	PLM	Sailing Vessel with Engine
	PP	Government Regulation
	PPKB	Permintaan Pelayanan Kapal dan Barang (The Demands of Ship and Good Services)
	PPSA	One Roof Port Service Center
	PSA	PSA Company (changed from Port of Singapore Authority)
	PSP	Private Sector Participation
	P.T.	Limited Company
	PTPI	IPC (Indonesia Port Corporation)
	PT.RUKINDO	Indonesia Dredging State Limited Company
R	REPELITA	National Five-year Development Plan
	REPELITADA	Local Five-year Development Plan
	Rp.	Rupiah
	RTRW	Spatial Use Plan
S	SAR	Search and Rescure
	SFD	Saudi Arabia Fund Development
	SIMOPPEL	Port Operation Management Information System
	SLOT	Sea-Land Orient Terminals Limited.
	SO	Supervisi Operasi (Operation Supervisor)
	SOLAS	International Convention on Safety of Life at Sea
	SS	Suspended Solid
	STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
T	TEU	Twenty Foot Equivalent Unit
	TKBM	Loading / Un-loading Workers
	TOR	Term of Reference
	TSP	Total Suspended Particular
U	UPT	Technical Planning Unit
	ULCC	Ultra Large Crude Oil Carrier

V	VLCC	Very Large Crude Oil Carrier
W	WB	World Bank
	WPPI	Central Area of Industrial Development

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PART 2

PORT DEVELOPMENT STRATEGY

APPENDIX FOR EACH CHAPTER

Appendix 3.2 Nationwide Development Scenario Related to Port Development



Table A3.2.3.1 GRDP of Manufacturing Industries by Province (without oil & gas) (1993 constant price)

	Province	GRDP of Manufacturing Industries (without oil & gas) (million Rp.)				Share in 1996 (%)	Average Growth per year (1993-1996)		Estimation of GRDP in 2018 by Trend (million Rp.)	Share in 2018 (%)	2018/1996
		1993	1994	1995	1996		(%/year)	(Million Rp./year)			
1	Special Territory of Aceh	669,198	739,331	906,060	1,048,847	1.2	16.2	130,568	9,836,783	1.4	9.4
2	North Sumatra	4,451,247	4,801,050	5,243,329	5,731,121	6.4	8.8	428,190	38,007,493	5.5	6.6
3	West Sumatra	887,092	978,413	1,098,601	1,234,486	1.4	11.6	116,237	9,511,592	1.4	7.7
4	Riau	1,569,270	1,801,931	2,068,702	2,366,398	2.6	14.7	265,816	20,605,913	3.0	8.7
5	Jambi	393,394	445,481	523,413	588,281	0.7	14.4	66,259	5,132,416	0.7	8.7
6	South Sumatra	1,476,528	1,656,675	1,897,680	2,133,649	2.4	13.1	221,237	17,561,861	2.5	8.2
7	Bengkulu	43,607	49,303	55,902	63,475	0.1	13.3	6,620	524,588	0.1	8.3
8	Lampung	777,420	840,946	917,033	1,004,809	1.1	8.9	75,825	6,705,219	1.0	6.7
9	Special Territory of Jakarta	10,708,576	11,651,125	12,865,288	13,928,084	15.5	9.2	1,087,269	94,942,818	13.7	6.8
10	West Java	15,917,344	18,102,796	20,780,199	23,369,381	26.0	13.7	2,503,351	196,776,871	28.4	8.4
11	Central Java	8,216,159	9,346,238	10,305,833	11,472,362	12.8	11.8	1,072,820	87,985,199	12.7	7.7
12	Special Territory of Yogyakarta	511,439	601,917	635,002	694,724	0.8	10.7	58,294	4,959,845	0.7	7.1
13	East Java	12,382,976	13,990,976	15,802,745	17,814,917	19.8	12.9	1,810,759	144,620,796	20.9	8.1
14	West Kalimantan	1,031,609	1,123,573	1,212,278	1,316,671	1.5	8.5	94,389	8,512,021	1.2	6.5
15	Central Kalimantan	412,728	433,852	451,254	460,914	0.5	3.7	16,196	2,050,036	0.3	4.4
16	South Kalimantan	870,693	1,024,984	1,151,561	1,175,494	1.3	10.5	104,098	8,693,686	1.3	7.4
17	East Kalimantan	1,679,142	1,785,020	1,914,132	2,022,528	2.2	6.4	115,927	11,471,310	1.7	5.7
18	North Sulawesi	238,303	260,496	286,859	315,835	0.4	9.8	25,896	2,221,415	0.3	7.0
19	Central Sulawesi	140,466	149,679	163,118	175,340	0.2	7.7	11,806	1,091,397	0.2	6.2
20	South Sulawesi	873,227	963,182	1,040,763	1,128,290	1.3	8.9	84,277	7,481,399	1.1	6.6
21	Southeast Sulawesi	71,937	88,489	122,096	126,729	0.1	20.8	19,798	1,410,525	0.2	11.1
22	Bali	408,529	470,873	529,487	583,460	0.6	12.6	58,341	4,683,313	0.7	8.0
23	West Nusa Tenggara	119,803	128,960	137,484	153,367	0.2	8.6	10,922	987,463	0.1	6.4
24	East Nusa Tenggara	52,673	59,418	63,283	69,997	0.1	9.9	5,584	483,741	0.1	6.9
25	East Timor	14,719	17,070	20,731	22,368	0.0	15.0	2,661	202,954	0.0	9.1
26	Maluku	461,737	481,333	508,688	538,180	0.6	5.2	25,668	2,766,619	0.4	5.1
27	Irian Jaya	206,330	223,678	324,610	374,830	0.4	22.0	60,643	4,287,028	0.6	11.4
	Western part of Indonesia	58,412,779	65,477,055	73,629,274	82,033,994	91.2	12.0		641,854,707	92.6	7.8
	Eastern part of Indonesia	6,173,367	6,739,734	7,396,857	7,880,543	8.8	8.5		51,659,594	7.4	6.6
	Total	64,586,146	72,216,789	81,026,131	89,914,537	100.0	11.7		693,514,301	100.0	7.7

Note : Total GRDP in 2018 is estimated based on PIP II target

Source : GRDP data in 1993-1996 --- GRDP of Provinces in Indonesia by Industrial Origin (BPS)

Table A3.2.3.2 GRDP of Manufacturing Industries/km2-----Population/km2 (1993 constant price)

Province	Land Area Km2	1996				2018 (Estimation)			
		Population		GRDP of Manufacturing		Population		GRDP of Manufacturing	
		1000person	person/km2	million Rp.	million	1000person	person/km2	million Rp.	million Rp./km2
Special Territory of Aceh	55,390	3,945	71.2	1,048,847	18.9	5,567	100.5	9,836,783	177.6
North Sumatra	71,680	11,306	157.7	5,731,121	80.0	14,242	198.7	38,007,493	530.2
West Sumatra	42,898	4,390	102.3	1,234,486	28.8	5,505	128.3	9,511,592	221.7
Riau	94,561	4,057	42.9	2,366,398	25.0	6,658	70.4	20,605,913	217.9
Jambi	53,436	2,459	46.0	588,281	11.0	3,927	73.5	5,132,416	96.0
South Sumatra	109,254	7,413	67.9	2,133,649	19.5	10,881	99.6	17,561,861	160.7
Bengkulu	19,789	1,464	74.0	63,475	3.2	2,429	122.7	524,588	26.5
Lampung	35,385	6,806	192.3	1,004,809	28.4	9,165	259.0	6,705,219	189.5
Special Territory of Jakarta	664	9,341	14,067.8	13,928,084	20,976.0	13,035	19,630.6	94,942,818	142,986.2
West Jawa	43,177	40,118	929.2	23,369,381	541.2	56,056	1,298.3	196,776,871	4,557.4
Central Jawa	32,549	29,881	918.0	11,472,362	352.5	33,483	1,028.7	87,985,199	2,703.2
Special Territory of Yogyakarta	3,186	2,915	914.9	694,724	218.1	2,811	882.2	4,959,845	1,556.8
East Jawa	47,923	34,124	712.1	17,814,917	371.7	38,602	805.5	144,620,796	3,017.8
West Kalimantan	146,807	3,732	25.4	1,316,671	9.0	5,297	36.1	8,512,021	58.0
Central Kalimantan	153,564	1,686	11.0	460,914	3.0	2,648	17.2	2,050,036	13.3
South Kalimantan	36,535	2,960	81.0	1,175,494	32.2	4,116	112.6	8,693,686	238.0
East Kalimantan	210,985	2,429	11.5	2,022,528	9.6	4,402	20.9	11,471,310	54.4
North Sulawesi	27,488	2,686	97.7	315,835	11.5	3,289	119.7	2,221,415	80.8
Central Sulawesi	63,689	1,997	31.4	175,340	2.8	2,953	46.4	1,091,397	17.1
South Sulawesi	62,483	7,693	123.1	1,128,290	18.1	9,805	156.9	7,481,399	119.7
Southeast Sulawesi	38,140	1,643	43.1	126,729	3.3	2,614	68.5	1,410,525	37.0
Bali	5,633	2,924	519.1	583,460	103.6	3,343	593.5	4,683,313	831.4
West Nusa Tenggara	20,153	3,708	184.0	153,367	7.6	4,773	236.8	987,463	49.0
East Nusa Tenggara	47,349	3,641	76.9	69,997	1.5	4,824	101.9	483,741	10.2
East Timor	14,609	860	58.9	22,368	1.5	1,204	82.4	202,954	13.9
Maluku	77,871	2,142	27.5	538,180	6.9	3,108	39.9	2,766,619	35.5
Irian Jaya	421,981	2,021	4.8	374,830	0.9	3,369	8.0	4,287,028	10.2
Western part of Indonesia	615,525	161,143	261.8	82,033,994	133.3	205,703	334.2	641,854,707	1,042.8
Eastern part of Indonesia	1,321,654	37,198	28.1	7,880,543	6.0	52,401	39.6	51,659,594	39.1
Total	1,937,179	198,341	102.4	89,914,537	46.4	258,104	133.2	693,514,301	358.0

Table A3.2.3.3 GRDP of Farm Food Crops by Province (1993 constant price)

	Province	GRDP of Farm Food Crops (million Rp.)				Share in 1996 (%)	Average Growth per year (1993-1996)		Estimation of GRDP in 2018 by Trend (million Rp.)	Share in 2018 (%)	2018/1996
		1993	1994	1995	1996		(%/year)	(Million Rp./year)			
1	Special Territory of Aceh	826,565	835,016	854,544	963,480	2.8	5.2	43,027	2,393,105	3.3	2.5
2	North Sumatra	1,744,422	1,774,056	2,008,619	2,204,962	6.5	8.1	161,618	7,217,306	10.0	3.3
3	West Sumatra	746,521	775,908	811,265	854,768	2.5	4.6	36,010	2,063,476	2.9	2.4
4	Riau	385,065	365,913	396,700	398,937	1.2	1.2	4,624	627,274	0.9	1.6
5	Jambi	337,090	342,413	344,796	358,982	1.1	2.1	6,806	637,356	0.9	1.8
6	South Sumatra	608,756	593,418	699,367	739,571	2.2	6.7	49,839	2,300,338	3.2	3.1
7	Bengkulu	258,950	237,690	267,223	280,691	0.8	2.7	7,247	551,425	0.8	2.0
8	Lampung	906,909	890,167	1,091,405	1,112,121	3.3	7.0	81,687	3,644,938	5.1	3.3
9	Special Territory of Jakarta	88,928	68,284	70,304	67,044	0.2	(9.0)	(620)	66,909	0.1	1.0
10	West Java	6,680,639	6,486,131	6,719,715	6,749,098	19.9	0.3	22,820	9,084,809	12.6	1.3
11	Central Java	4,992,343	4,771,918	5,184,618	5,397,412	15.9	2.6	135,023	10,484,011	14.5	1.9
12	Special Territory of Yogyakarta	546,636	538,149	588,827	628,361	1.9	4.8	27,585	1,547,607	2.1	2.5
13	East Java	6,210,681	6,078,030	6,337,721	6,590,806	19.5	2.0	126,708	11,750,012	16.3	1.8
14	West Kalimantan	453,162	430,504	423,724	436,456	1.3	(1.2)	2,976	628,856	0.9	1.4
15	Central Kalimantan	182,027	205,511	215,346	242,801	0.7	10.1	19,216	833,851	1.2	3.4
16	South Kalimantan	426,740	433,907	470,609	492,923	1.5	4.9	23,525	1,266,006	1.8	2.6
17	East Kalimantan	255,656	272,955	308,481	343,414	1.0	10.3	29,880	1,253,851	1.7	3.7
18	North Sulawesi	303,033	320,438	337,838	356,714	1.1	5.6	17,844	938,770	1.3	2.6
19	Central Sulawesi	319,978	350,294	375,697	404,698	1.2	8.1	27,956	1,277,609	1.8	3.2
20	South Sulawesi	1,825,168	1,867,448	2,033,122	2,163,525	6.4	5.8	118,075	5,965,175	8.3	2.8
21	Southeast Sulawesi	177,594	186,611	211,742	215,323	0.6	6.6	13,832	651,026	0.9	3.0
22	Bali	737,220	723,409	754,176	773,480	2.3	1.6	12,087	1,302,228	1.8	1.7
23	West Nusa Tenggara	664,406	711,893	746,357	779,394	2.3	5.5	37,943	2,022,321	2.8	2.6
24	East Nusa Tenggara	474,984	503,783	534,703	585,099	1.7	7.2	36,127	1,728,829	2.4	3.0
25	East Timor	98,171	101,626	98,905	107,211	0.3	3.0	3,013	217,380	0.3	2.0
26	Maluku	171,394	176,511	181,017	184,967	0.5	2.6	4,523	356,397	0.5	1.9
27	Irian Jaya	371,294	405,437	444,899	442,784	1.3	6.0	25,393	1,254,679	1.7	2.8
	Western part of Indonesia	25,070,725	24,500,502	26,129,280	27,119,713	80.1	2.7		53,670,792	74.5	2.0
	Eastern part of Indonesia	5,723,607	5,966,918	6,382,440	6,755,309	19.9	5.7		18,394,750	25.5	2.7
	Total	30,794,332	30,467,420	32,511,720	33,875,022	100.0	3.2		72,065,542	100.0	2.1

Note : Total GRDP in 2018 is estimated based on PJP II target

Source : GRDP data in 1993-1996 --- GRDP of Provinces in Indonesia by Industrial Origin (BPS)

Table A3.2.3.4 GRDP of Farm Food Crops/km2----Population/km2 (1993 constant price)

Province	Land Area Km2	1996				2018 (Estimation)			
		Population		GRDP of Farm Food Crops		Population		GRDP of Farm Food Crops	
		1000person	person/km2	million Rp.	million Rp./km2	1000person	person/km2	million Rp.	million Rp./km2
Special Territory of Aceh	55,390	3,945	71.2	963,480	17.4	5,567	100.5	2,393,105	43.2
North Sumatra	71,680	11,306	157.7	2,204,962	30.8	14,242	198.7	7,217,306	100.7
West Sumatra	42,898	4,390	102.3	854,768	19.9	5,505	128.3	2,063,476	48.1
Riau	94,561	4,057	42.9	398,937	4.2	6,658	70.4	627,274	6.6
Jambi	53,436	2,459	46.0	358,982	6.7	3,927	73.5	637,356	11.9
South Sumatra	109,254	7,413	67.9	739,571	6.8	10,881	99.6	2,300,338	21.1
Bengkulu	19,789	1,464	74.0	280,691	14.2	2,429	122.7	551,425	27.9
Lampung	35,385	6,806	192.3	1,112,121	31.4	9,165	259.0	3,644,938	103.0
Special Territory of Jakarta	664	9,341	14,067.8	67,044	101.0	13,035	19,630.6	66,909	100.8
West Jawa	43,177	40,118	929.2	6,749,098	156.3	56,056	1,298.3	9,084,809	210.4
Central Jawa	32,549	29,881	918.0	5,397,412	165.8	33,483	1,028.7	10,484,011	322.1
Special Territory of Yogyakarta	3,186	2,915	914.9	628,361	197.2	2,811	882.2	1,547,607	485.8
East Jawa	47,923	34,124	712.1	6,590,806	137.5	38,602	805.5	11,750,012	245.2
West Kalimantan	146,807	3,732	25.4	436,456	3.0	5,297	36.1	628,856	4.3
Central Kalimantan	153,564	1,686	11.0	242,801	1.6	2,648	17.2	833,851	5.4
South Kalimantan	36,535	2,960	81.0	492,923	13.5	4,116	112.6	1,266,006	34.7
East Kalimantan	210,985	2,429	11.5	343,414	1.6	4,402	20.9	1,253,851	5.9
North Sulawesi	27,488	2,686	97.7	356,714	13.0	3,289	119.7	938,770	34.2
Central Sulawesi	63,689	1,997	31.4	404,698	6.4	2,953	46.4	1,277,609	20.1
South Sulawesi	62,483	7,693	123.1	2,163,525	34.6	9,805	156.9	5,965,175	95.5
Southeast Sulawesi	38,140	1,643	43.1	215,323	5.6	2,614	68.5	651,026	17.1
Bali	5,633	2,924	519.1	773,480	137.3	3,343	593.5	1,302,228	231.2
West Nusa Tenggara	20,153	3,708	184.0	779,394	38.7	4,773	236.8	2,022,321	100.3
East Nusa Tenggara	47,349	3,641	76.9	585,099	12.4	4,824	101.9	1,728,829	36.5
East Timor	14,609	860	58.9	107,211	7.3	1,204	82.4	217,380	14.9
Maluku	77,871	2,142	27.5	184,967	2.4	3,108	39.9	356,397	4.6
Irian Jaya	421,981	2,021	4.8	442,784	1.0	3,369	8.0	1,254,679	3.0
Western part of Indonesia	615,525	161,143	261.8	27,119,713	44.1	205,703	334.2	53,670,792	87.2
Eastern part of Indonesia	1,321,654	37,198	28.1	6,755,309	5.1	52,401	39.6	18,394,750	13.9
Total	1,937,179	198,341	102.4	33,875,022	17.5	258,104	133.2	72,065,542	37.2

Figure A3.2.3.1 Working Area of Oil and Natural Gas

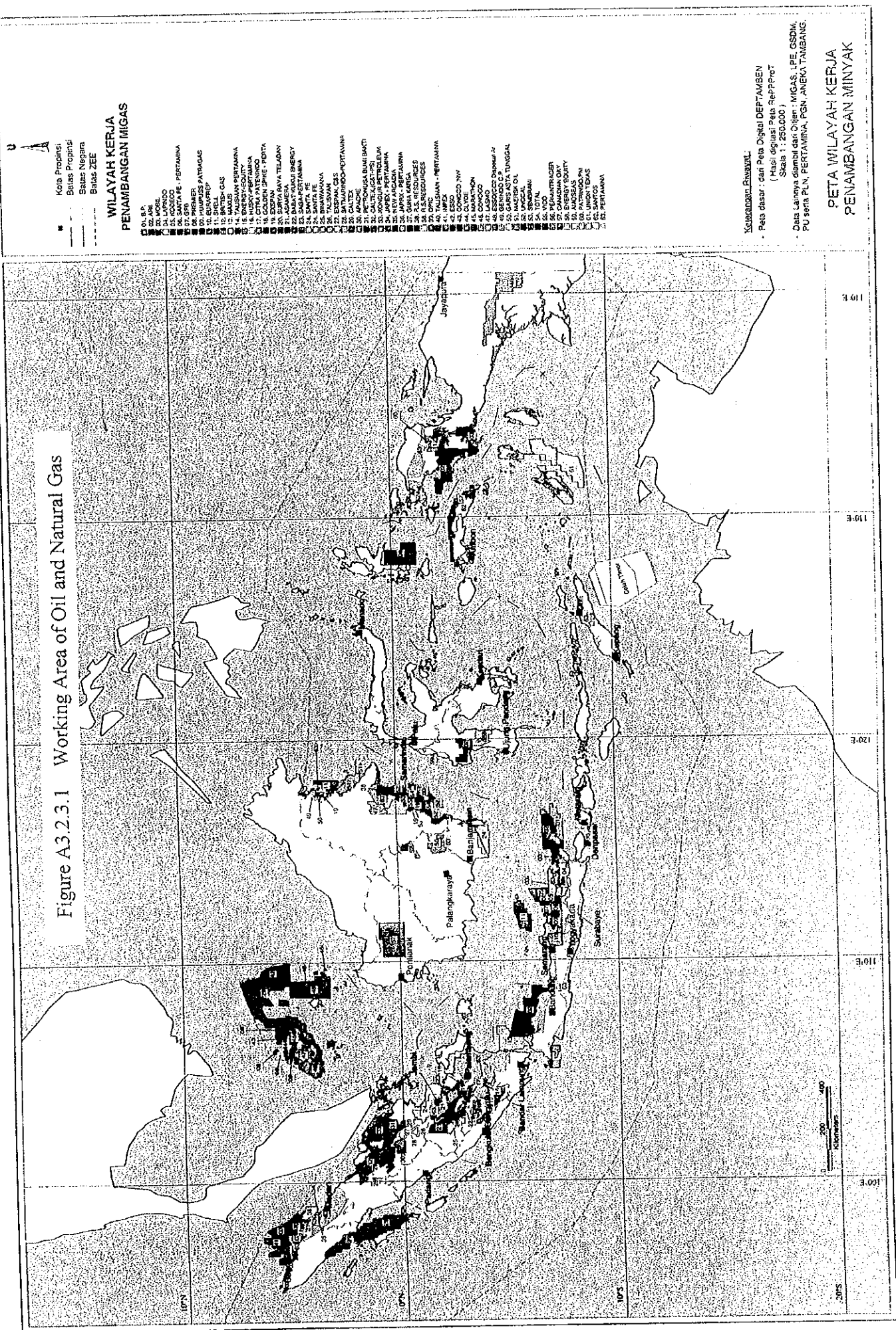


Figure A3.2.3.2 Working Area of General Mining

The map displays the geographical distribution of mining activities across Indonesia. Key features include:

- Geographical Grid:** Latitude lines at 10°S, 10°N and longitude lines at 100°E, 110°E.
- Scale:** 0 to 400 Kilometers.
- Legend:**
 - Kota Propinsi:** Represented by a solid black square.
 - Kota:** Represented by a solid black circle.
 - Desa:** Represented by a solid black dot.
 - Provinsi:** Represented by a dashed line.
 - Kabupaten:** Represented by a dotted line.
 - Kecamatan:** Represented by a dash-dot line.
 - Desa:** Represented by a long-dashed line.
 - Daerah Pertambangan Umum:** Represented by a hatched pattern.
 - Kuasa Pertambangan Aneka Tambang:** Represented by a diagonal line pattern.
 - Kuasa Pertambangan Tambang Batubara:** Represented by a horizontal line pattern.
 - Kuasa Pertambangan Tambang Timah:** Represented by a vertical line pattern.
 - Kuasa Pertambangan Geologi Sumber Daya Mineral:** Represented by a cross-hatch pattern.
 - Kuasa Pertambangan Swasta:** Represented by a wavy line pattern.
 - Kontrak Karya:** Represented by a solid black rectangle.
 - Kontrak Karya Batubara:** Represented by a solid black rectangle with a diagonal line.
 - Tambang Rakyat:** Represented by a solid black rectangle with a horizontal line.
 - Daerah Terutup:** Represented by a solid black rectangle with a vertical line.

Table A3.2.3.5 Number of Registered Motor Vehicles by Province

	Province	Number of Registered Motor Vehicles (Unit)				Growth (%/year)	Share in 1996 (%)
		1993	1994	1995	1996		
1	Special Territory of Aceh	186,424	194,361	206,387	221,432	5.9	1.5
2	North Sumatra	773,574	806,868	873,251	960,338	7.5	6.5
3	West Sumatra	175,745	186,634	204,084	224,238	8.5	1.5
4	Riau	201,036	218,039	249,941	304,239	14.8	2.0
5	Jambi	784,802	840,907	848,228	856,844	3.0	5.8
6	South Sumatra						
7	Bengkulu						
8	Lampung						
9	Special Territory of Jakarta	2,063,490	2,684,750	3,021,138	3,397,748	18.1	22.8
10	West Jawa	976,369	999,587	1,009,902	1,243,076	8.4	8.4
11	Central Jawa	1,743,955	1,960,758	2,251,545	2,576,856	13.9	17.3
12	Special Territory of Yogyakarta						
13	East Jawa	2,054,847	2,109,396	2,303,442	2,591,890	8.0	17.4
14	West Kalimantan	150,664	166,364	183,188	205,115	10.8	1.4
15	Central Kalimantan	248,174	259,717	333,828	352,523	12.4	2.4
16	South Kalimantan						
17	East Kalimantan	229,597	231,939	235,307	240,254	1.5	1.6
18	North Sulawesi	180,016	180,725	263,950	334,017	22.9	2.2
19	Central Sulawesi						
20	South Sulawesi	366,327	387,957	419,138	499,166	10.9	3.4
21	Southeast Sulawesi						
22	Bali	546,449	593,381	687,752	749,792	11.1	5.0
23	West Nusa Tenggara						
24	East Nusa Tenggara						
25	East Timor						
26	Maluku	48,860	49,030	49,905	55,043	4.1	0.4
27	Irian Jaya	54,268	58,424	67,846	73,531	10.7	0.5
	Western part of Indonesia (excluding Bali)	9,506,691	10,594,681	11,655,670	13,126,453	11.4	88.2
	Eastern part of Indonesia (including Bali)	1,277,906	1,334,156	1,553,162	1,759,649	11.3	11.8
	Total	10,784,597	11,928,837	13,208,832	14,886,102	11.3	100.0

Source : Statistical Yearbook of Indonesia 1996 (BPS)

Table A3.2.3.6 Number of Vehicles/km2----Population/km2

Province	Land Area Km2	Population 1000person	Population Density per km2 person/km2	Number of Vehicles in 1996 unit	Density of Number of Vehicles per km2 unit/km2
Special Territory of Aceh	55,390	3,945	71.2	221,432	4.0
North Sumatra	71,680	11,306	157.7	960,338	13.4
West Sumatra	42,898	4,390	102.3	224,238	5.2
Riau	94,561	4,057	42.9	304,239	3.2
Jambi, South Sumatra, Bengkulu, Lampung	217,864	18,142	83.3	856,844	3.9
Special Territory of Jakarta	664	9,341	14,068.4	3,397,748	5117.1
West Jawa	43,177	40,118	929.1	1,243,076	28.8
Central Jawa, Special Territory of Yogyakarta	35,735	32,796	917.8	2,576,856	72.1
East Jawa	47,923	34,124	712.1	2,591,890	54.1
West Kalimantan	146,807	3,732	25.4	205,115	1.4
Central Kalimantan, South Kalimantan	190,099	4,646	24.4	352,523	1.9
East Kalimantan	210,985	2,429	11.5	240,254	1.1
North Sulawesi, Central Sulawesi	91,177	4,683	51.4	334,017	3.7
South Sulawesi, Southeast Sulawesi	100,623	9,337	92.8	499,166	5.0
Bali, West Nusa Tenggara, East Nusa Tenggara, East Timor	87,744	11,133	126.9	749,792	8.5
Mahuku	77,871	2,142	27.5	55,043	0.7
Irian Jaya	421,981	2,021	4.8	73,531	0.2
Western part of Indonesia (excluding Bali)	609,892	158,220	259.4	13,126,453	21.5
Eastern part of Indonesia (including Bali)	1,327,287	40,123	30.2	1,759,649	1.3
Total	1,937,179	198,343	102.4	14,886,102	7.7

Table A3.2.3.7 Road Length Data by Province

	Province	Road Length in 1996		Principal Region	Road Length (Km)							Growth (%/year)
		Km	%		1990	1991	1992	1993	1994	1995	1996	
1	Special Territory of Aceh	14,241	3.7	SUMATRA	90,835	98,452	100,304	105,971	109,165	114,649	118,525	4.5
2	North Sumatra	30,990	8.0									
3	West Sumatra	18,297	4.7									
4	Riau	13,289	3.4									
5	Jambi	9,268	2.4	JAWA								
6	South Sumatra	15,135	3.9									
7	Bengkulu	5,985	1.6									
8	Lampung	11,320	2.9		84,089	93,095	93,840	100,330	103,033	106,452	110,761	4.7
9	Special Territory of Jakarta	8,651	2.2	KALIMANTAN								
10	West Java	28,329	7.3									
11	Central Java	24,973	6.5									
12	Special Territory of Yogyakarta	15,742	4.1									
13	East Java	33,066	8.6	SULAWESI	28,975	32,900	33,430	36,097	38,247	38,956	40,692	5.8
14	West Kalimantan	11,817	3.1									
15	Central Kalimantan	14,075	3.6									
16	South Kalimantan	7,823	2.0									
17	East Kalimantan	6,977	1.8	Others	43,681	45,896	46,871	48,619	49,743	52,958	54,193	3.7
18	North Sulawesi	9,804	2.5									
19	Central Sulawesi	9,797	2.5									
20	South Sulawesi	27,772	7.2									
21	Southeast Sulawesi	6,820	1.8	Total	41,147	49,027	50,996	53,875	56,690	59,399	61,665	7.0
22	Bali	8,004	2.1									
23	West Nusa Tenggara	7,127	1.8									
24	East Nusa Tenggara	16,181	4.2									
25	East Timor	8,160	2.1									
26	Maluku	9,359	2.4									
27	Irian Jaya	12,834	3.3									
	Western part of Indonesia	237,290	61.5									
	Eastern part of Indonesia	148,546	38.5		288,727	319,370	325,441	344,892	356,878	372,414	385,836	5.0
	Total	385,836	100									

Source : Statistical Yearbook of Indonesia 1996 (BPS)

Table A3.2.3.8 Road Length/1000km2----Population/km2

Province	Land Area Km2	Population 1000person	Population Density per km2 person/km2	Road Length in 1996		Road Length Density per 1000km2 km/1000km2
				Km	Km	
Special Territory of Aceh	55,390	3,945	71.2	14,241		257.1
North Sumatra	71,680	11,306	157.7	30,990		432.3
West Sumatra	42,898	4,390	102.3	18,297		426.5
Riau	94,561	4,057	42.9	13,289		140.5
Jambi	53,436	2,459	46.0	9,268		173.4
South Sumatra	109,254	7,413	67.9	15,135		138.5
Bengkulu	19,789	1,464	74.0	5,985		302.4
Lampung	35,385	6,806	192.3	11,320		319.9
Special Territory of Jakarta	664	9,341	14,068.4	8,651		13,028.6
West Jawa	43,177	40,118	929.1	28,329		656.1
Central Jawa	32,549	29,881	918.0	24,973		767.2
Special Territory of Yogyakarta	3,186	2,915	914.8	15,742		4,941.0
East Jawa	47,923	34,124	712.1	33,066		690.0
West Kalimantan	146,807	3,732	25.4	11,817		80.5
Central Kalimantan	153,564	1,686	11.0	14,075		91.7
South Kalimantan	36,535	2,960	81.0	7,823		214.1
East Kalimantan	210,985	2,429	11.5	6,977		33.1
North Sulawesi	27,488	2,686	97.7	9,804		356.7
Central Sulawesi	63,689	1,997	31.4	9,797		153.8
South Sulawesi	62,483	7,693	123.1	27,772		444.5
Southeast Sulawesi	38,140	1,643	43.1	6,820		178.8
Bali	5,633	2,924	519.2	8,004		1,420.9
West Nusa Tenggara	20,153	3,708	184.0	7,127		353.6
East Nusa Tenggara	47,349	3,641	76.9	16,181		341.7
East Timor	14,609	860	58.8	8,160		558.6
Maluku	77,871	2,142	27.5	9,359		120.2
Irian Jaya	421,981	2,021	4.8	12,834		30.4
Western part of Indonesia	615,525	161,144	261.8	237,290		385.5
Eastern part of Indonesia	1,321,654	37,199	28.1	148,546		112.4
Total	1,937,179	198,343	102.4	385,836		199.2