

社会開発協力部報告書

100-8

REPUBLIK INDONESIA
DEPARTEMEN PEKERJAAN UMUM
DIREKTORAT JENDERAL BINA MARGA

FINAL REPORT
ON
THE LOCAL ROADS SUPPORT WORKS STUDY
IN SEVEN PROVINCES
APPENDIXES

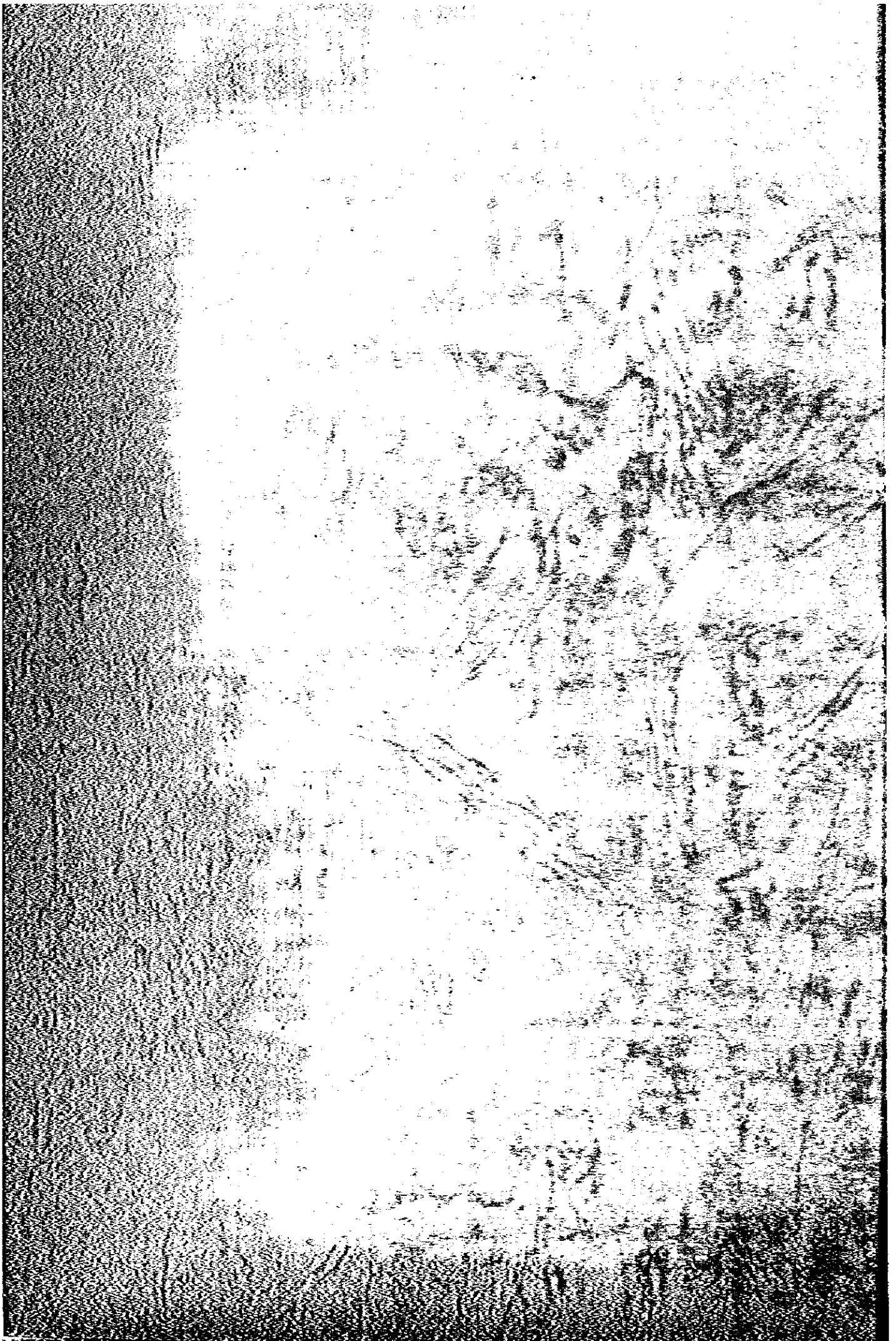
AUGUST, 1980

JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO, JAPAN

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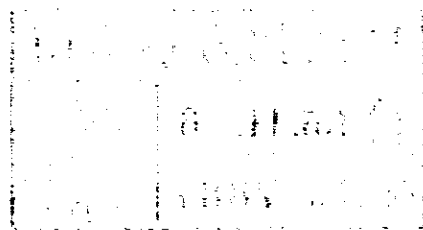


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JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO, JAPAN

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LOCAL ROADS SUPPORT WORKS STUDY

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**APPENDIX A. TERMS OF REFERENCE
FOR LOCAL ROADS SUPPORT WORKS STUDY**

TERMS OF REFERENCE
FOR
LOCAL ROADS SUPPORT WORKS STUDY

1. INTRODUCTION

1.1. In supporting the development of a good network of the national and regional roads, it is imperative to have a balanced development in the all of the sub-systems, e.g. arterial, collector and local roads.

Roughly, local roads are referred to the local and Kabupaten's roads which are administrated by Kabupaten's Public Works (so called PUK).

1.2. The total length of all Kabupaten's roads in Indonesia is approximately 63% of the road network. And some of local roads, about 30,000 kms are going to be constructed by the transmigration projects within the 3rd Pelita period.

1.3. It has been well known, that the role of local roads is critical in terms of the distribution of development, which is followed by the distribution of income.

The capacity or availability of adequate local roads will give direct affects in the regional production, employment and income growth, which bring distributional effects on themselves.

1.4. Government of Indonesia c.q. Directorate General of Highways is going to carry out the studies in 7 Provinces, namely, Riau, South Sumatera, Lampung, East Nusa Tenggara, North Sulawesi, South Sulawesi and South East Sulawesi.

1.5. The studies must be carried out by the study team composed of the Bina Marga staff and Expatriate Staff.

2. OBJECTIVES

2.1. Primary objective of the study is to establish the Local Roads Support Works Implementation Program and to prepare a program of assistance under which the road support work's capability of the

Kabupaten, together with local contracting industries will be appropriate for the execution of a preferred program of road support works.

2.2. To meet the above mentioned primary objective, the urgent objectives are to be as follows:

- (1) Carry out the criteria of the selection of roads and classification of support works;
- (2) Make the list of equipments required for the support works;
- (3) Recommend the organization of operation and maintenance of equipments ; and
- (4) Cost estimate and annual disbursement schedule.

2.3. Carrying out the report which consists of the following skeleton; and this report will be submitted to the Overseas Economic Cooperation Fund, Japan from the Government of Indonesia as a back up report for the required loan from OECF;

- (1) Introduction
- (2) Background of the Program
 - (a) Present status of Road Sector in Indonesia
 - (b) Road Improvement Plan in third 5-year plan
 - (c) Overall Program for Local Road Support
- (3) General description of the Program
 - (a) Purpose of the Program
 - (b) Outline of the Program
 - (c) Criteria for selection of proposed Kabupaten (with background Data)

(4) Estimated cost and Financial Plan

- (a) Required Equipment & Materials**
- (b) Cost Estimates**
- (c) Annual fund Requirement**
- (d) Plan for Financing**
 - (i) OECF Loan**
 - (ii) Local Budget**

(5) Plans for Program Implementation & Maintenance

- (a) Executing Agency**
- (b) Method and Schedule of Procurement**
- (c) Method and Schedule of Road Support Works**
- (d) Organization for operation & maintenance of Equipment**
- (e) Implementation Schedule**

(6) Effect of the Equipment Supply

3. SCOPE OF WORK

The Consultant/Study Team's scope of work shall cover the following items but not necessarily be limited to them:

3.1. Economic and Road Inventory Studies:

- (1) Review and Assessment of the Regional Economic Activities**
- (2) Review and Assessment of the Present Level of Traffic**
- (3) Field Reconnaissance and Assessment of Surface Conditions and Bridge Structures**

3.2. Present Maintenance Studies:

- (1) Review and Assessment of Present Maintenance Level (Operation, Organization, Policy);**

(2) Review and Assessment of Present Maintenance Capabilities;

- (a) Planning and Design**
- (b) Organization**
- (c) Equipment (including workshop and spare parts)**
- (d) Materials**
- (e) Budgetting etc.**

(3) Availability of Maintenance Resources;

- (a) Finance**
- (b) Manpower (including Planning and Design)**
- (c) Equipment (including Spare Parts)**
- (d) Facility (including Workshops)**

3.3. Estimate of Support Work Requirements;

- (1) Criteria for selection of local roads**
- (2) Support work operations**
- (3) Equipment required**
- (4) Organization and Administration**

3.4. Cost Estimate and Plans for Implementation:

- (1) Cost estimate of Equipment required;**
- (2) Cost estimate of Maintenance and Administration of execution agencies;**
- (3) Method and schedule of procurement;**
- (4) Implementation Program**

Above stated scope of work shall be executed urgently by the Team. And moreover, additional following items shall be covered by the further study;

3.5. Determination of Support Work Policy and Standard:

- (1) Management, administration and operation system of the local roads support works;
- (2) Budget allocation criteria for the government of the central, the provincial and the Kabupaten.

4. STUDY TEAM AND SCHEDULE

4.1. The members of the study team's and estimates duration of assignment are shown below:

	<u>Month</u>
Highway and Bridge Construction Specialist (Consultant)	3.0
Coordinate Engineer (Bina Marga)	5.0
Transport Planner (Consultant)	2.0
Construction Equipment Specialist (Consultant)	3.0
Traffic Engineer (Bina Marga)	3.0
Highway Engineer (Bina Marga)	4.0
Materials Engineer (Bina Marga)	3.0
Assistant Engineer (Bina Marga)	3.0
Assistant Engineer (Bina Marga)	3.0
Assistant Engineer (Consultant)	1.0
T o t a l :	30.0 m/m

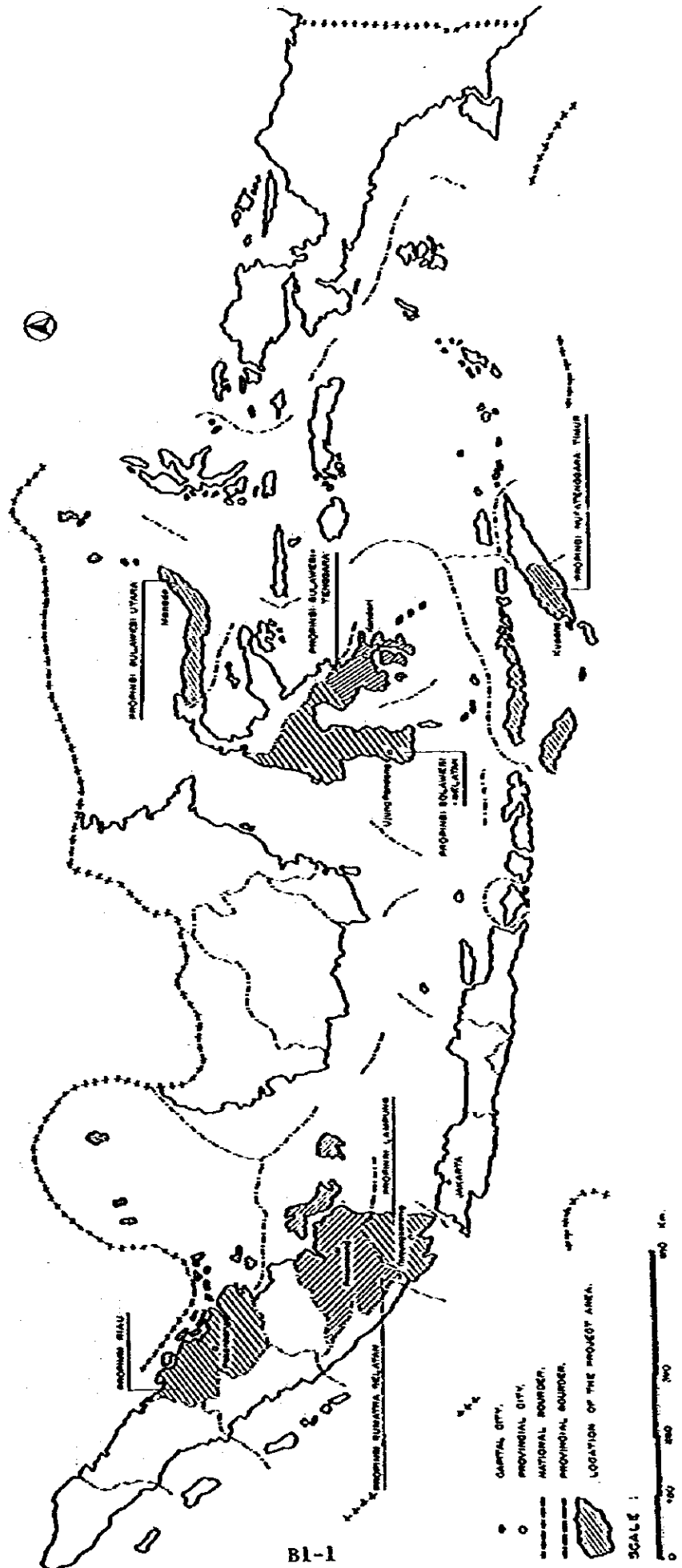
4.2. The staff schedule is shown in the attached table "A-1".
And the final report shall be submitted at the end of March 1980 with 10 copies.

N.Y./

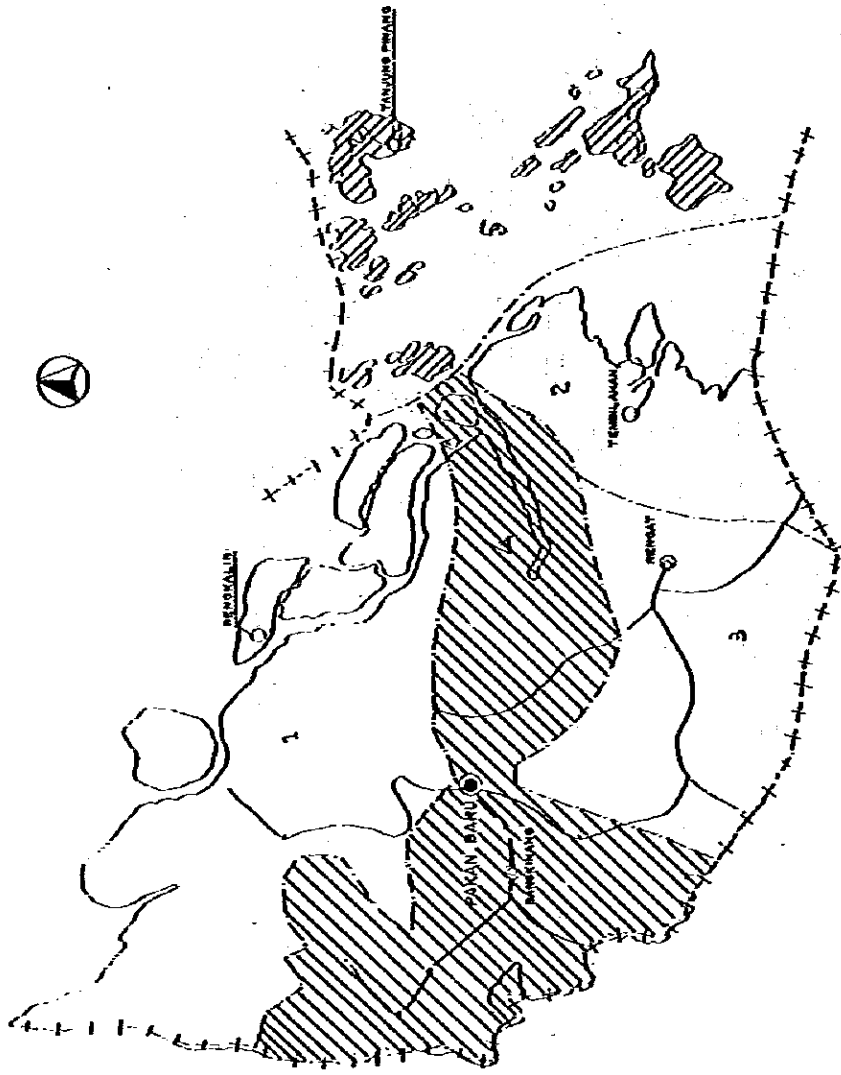
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APPENDIX B-1 MAPS OF PROVINCES AND KABUPATEN

LOCATION MAP OF THE SEVEN PROVINCES



PROVINCE RIAU

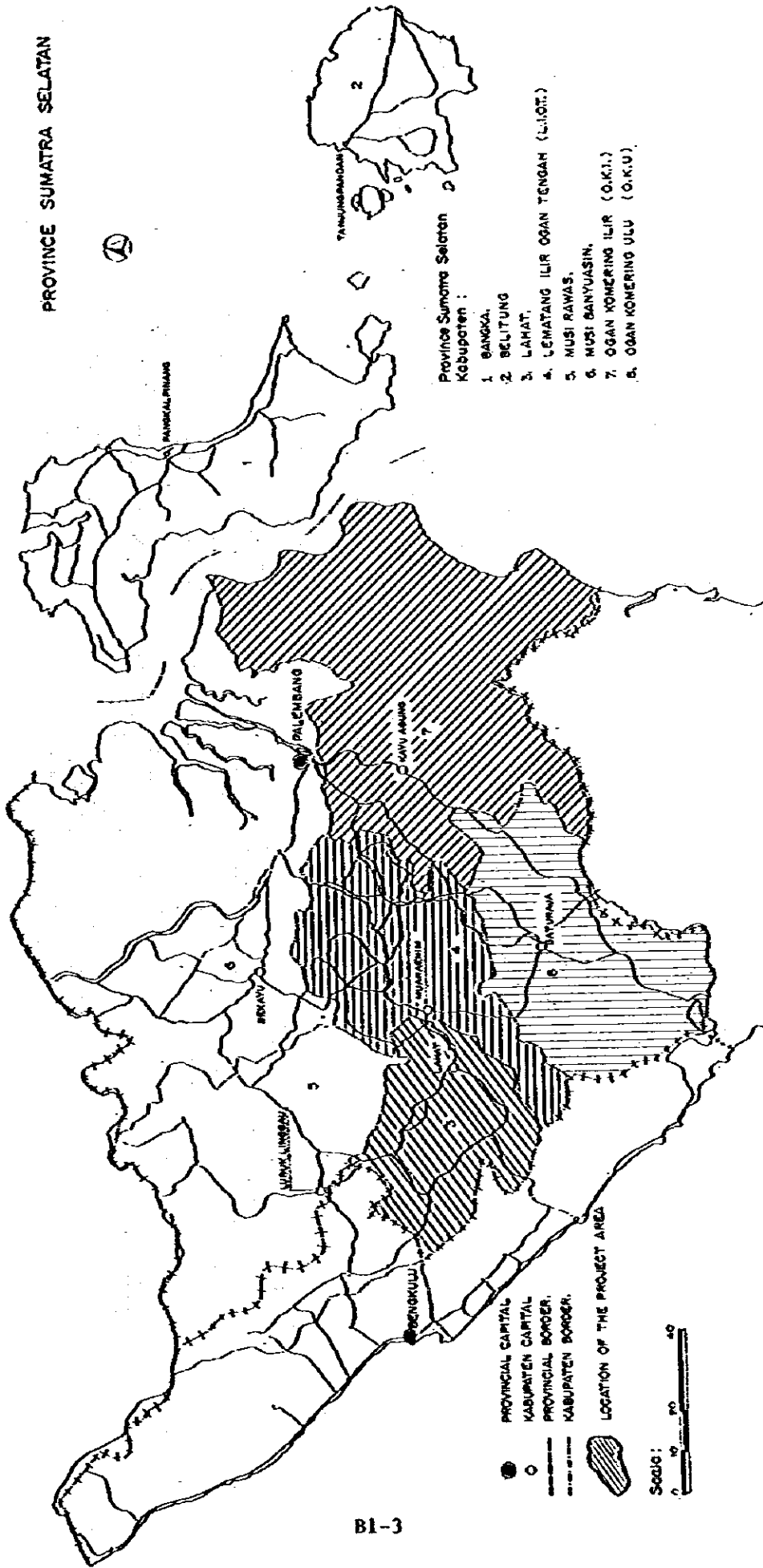


- Province Riau
Kabupaten :
- 1 BENGKALIS
 - 2 INDRAGIRI HILIR
 - 3 INDRAGIRI HULU
 - 4 KAMPAR
 - 5 ROKAN HULU
 - 6 ROKAN DARUL

- PROVINCIAL CAPITAL
- KABUPATEN CAPITAL
- PROVINCE BORDER
- KABUPATEN BORDER
- ▨ LOCATION OF THE PROJECT AREA



PROVINCE SUMATRA SELATAN



- Province Sumatra Selatan
Kabupaten :
1. BANGKA.
 2. BELITUNG
 3. LAHAT.
 4. LEMATANG ILIR OGAN TENGAH (L.I.O.T.)
 5. MUSI RAWAS.
 6. MUSI BANYUASIN.
 7. OGAN KOMERING ILIR (O.K.I.)
 8. OGAN KOMERING ULU (O.K.U.)

PROVINCIAL CAPITAL

 KABUPATEN CAPITAL

 PROVINCIAL BORDER.

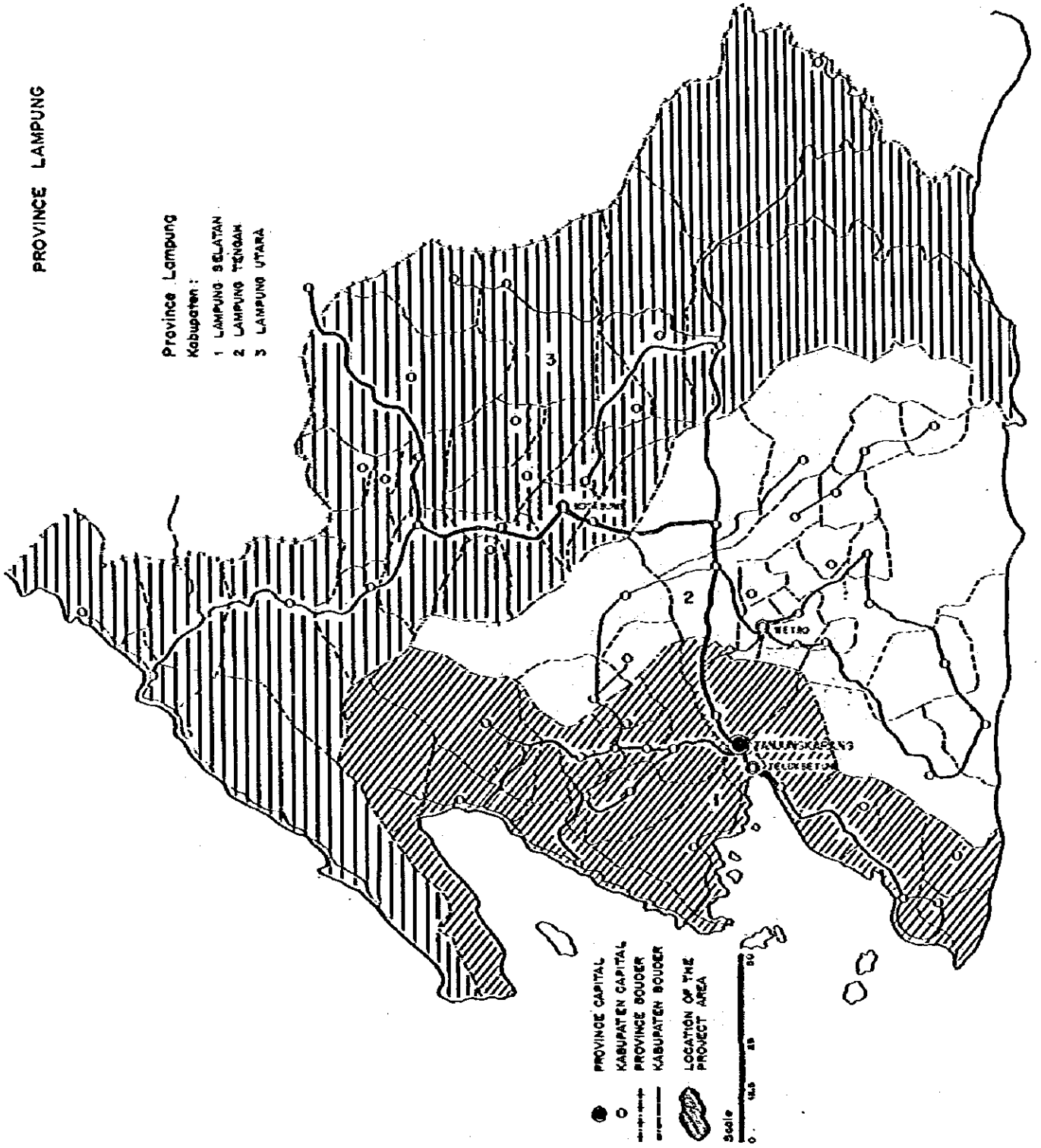
 KABUPATEN BORDER.

 LOCATION OF THE PROJECT AREA.

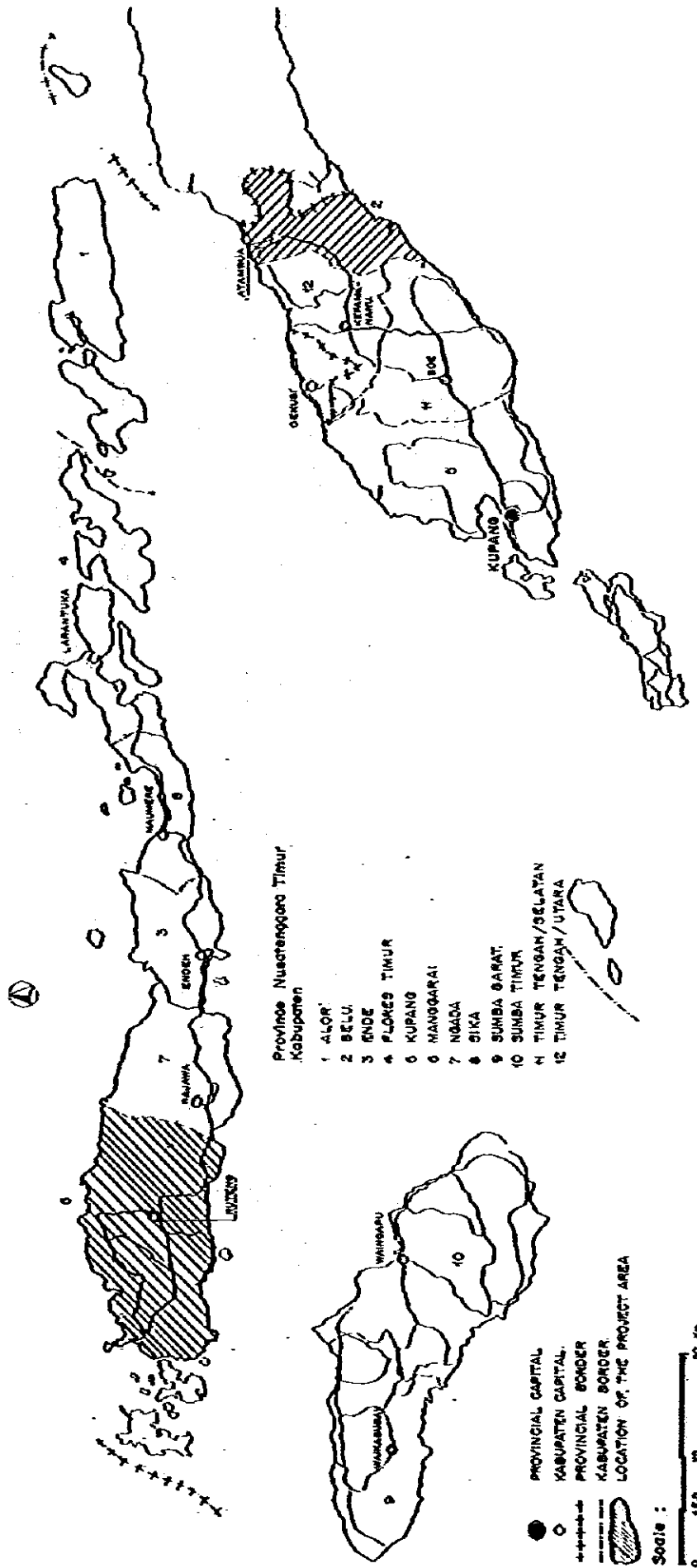
Scale:
 0 10 20 40

PROVINCE LAMPUNG

Province Lampung
 Kabupaten :
 1 LAMPUNG SELATAN
 2 LAMPUNG TENGAH
 3 LAMPUNG UTARA



PROVINCE NUSATENGGARRA TIMUR

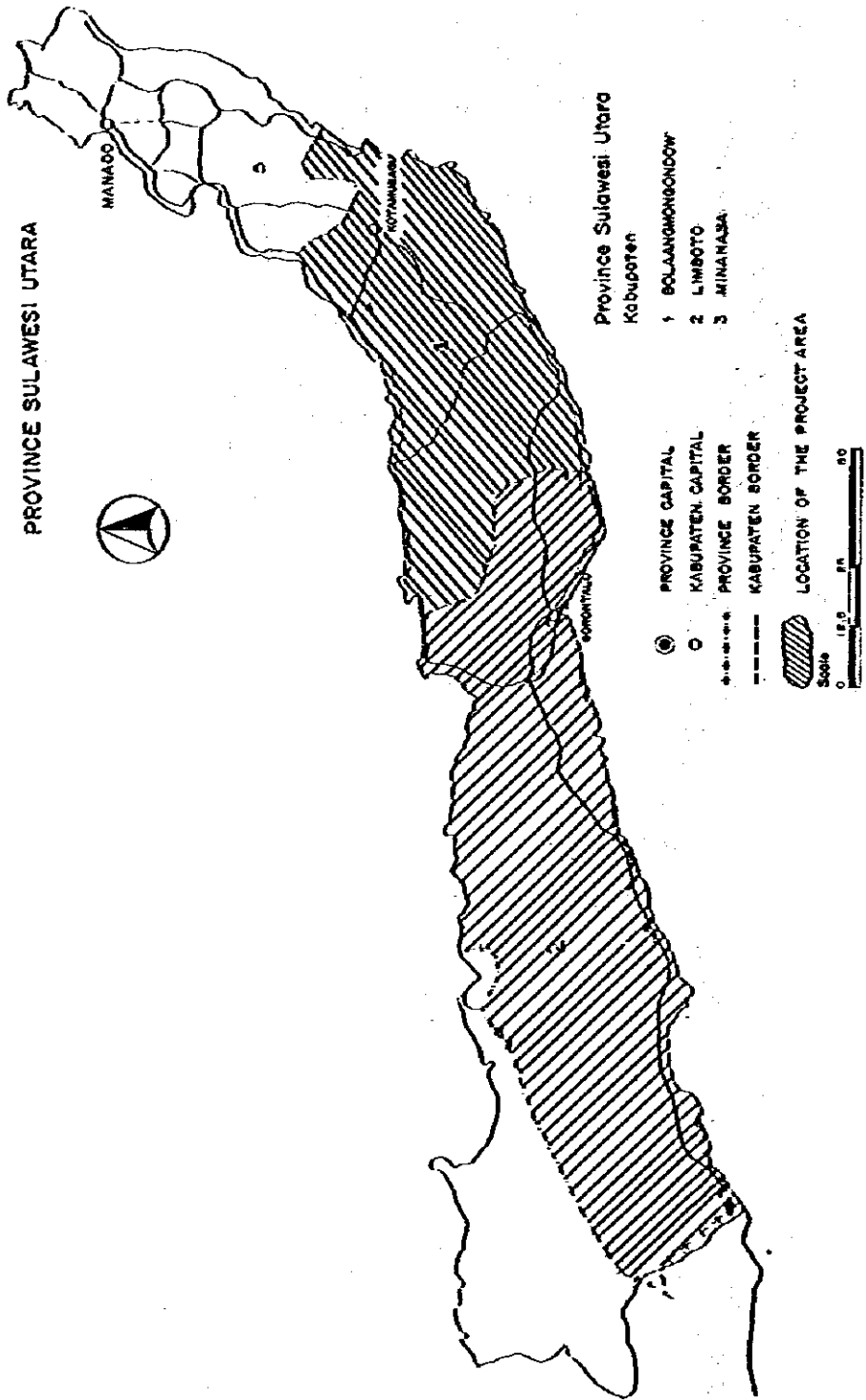


Province Nusatenggara Timur
Kabupaten

- 1 ALOR
- 2 BELU
- 3 ENDE
- 4 FLORES TIMUR
- 5 KUPANG
- 6 MANGGARAI
- 7 NGADA
- 8 SIKA
- 9 SUMBA BARAT
- 10 SUMBA TIMUR
- 11 TIMUR TENGAH/SELATAN
- 12 TIMUR TENGAH/UTARA

- PROVINCIAL CAPITAL
- KABUPATEN CAPITAL
- - - - - PROVINCIAL BORDER
- - - - - KABUPATEN BORDER
- ▨ LOCATION OF THE PROJECT AREA

Scale : 0 50 100 km

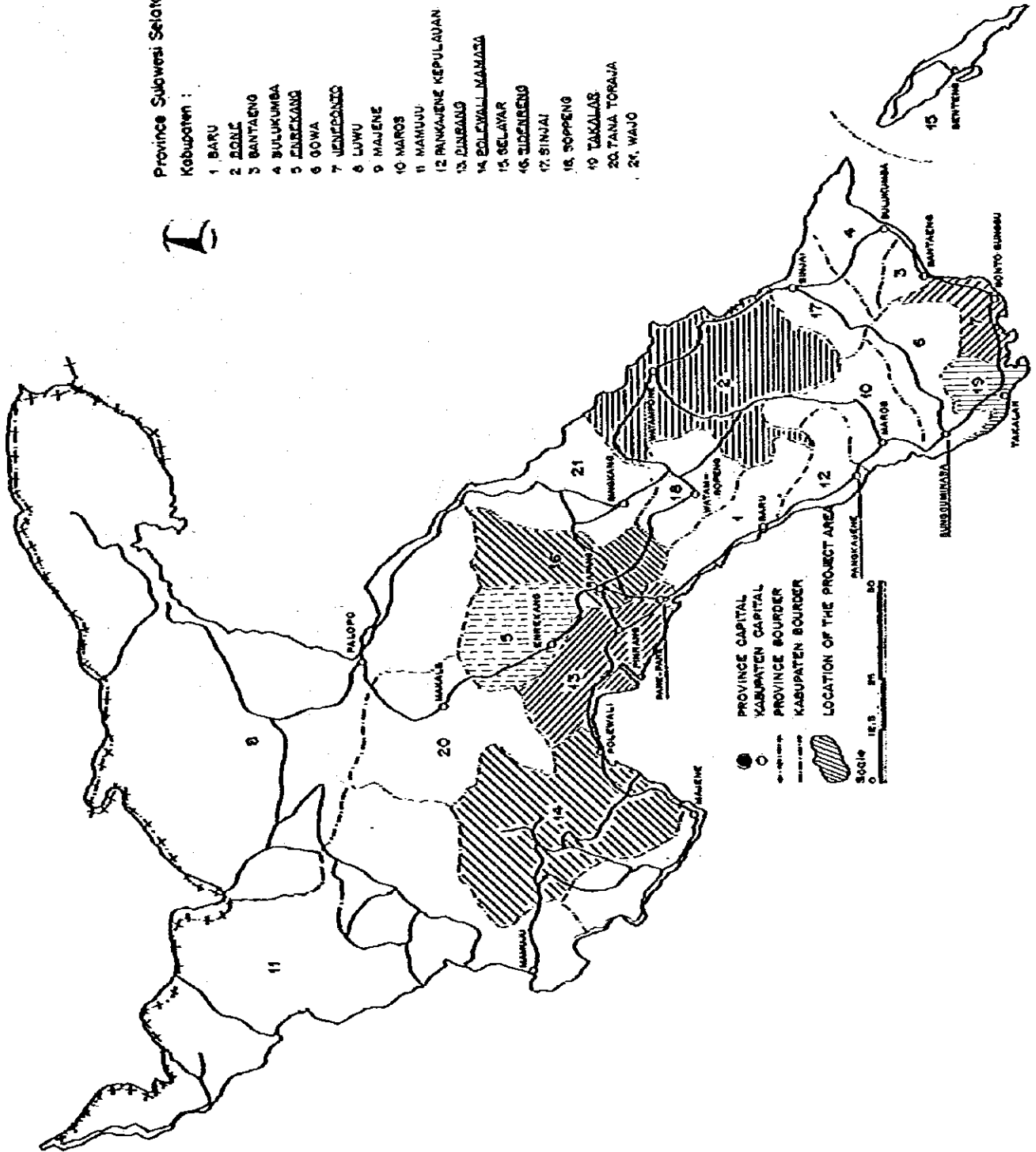


PROVINCE SULAWESI SELATAN

Province Sulawesi Selatan

Kabupaten :

1. BARU
2. BONE
3. BANTAE
4. BULUKUMBA
5. ENREKANG
6. GOWA
7. JENEPONTO
8. LUWU
9. MAJENE
10. MAROS
11. MAMUJU
12. PANGKAJENE KEPULAUAN
13. PINRANG
14. BOLAANG MAMASSA
15. SELAYA
16. SIDRANG
17. SINJAI
18. SOPPENG
19. TAKALAS
20. TANA TORAJA
21. WANO



PROVINCE SULAWESI TENGGARA

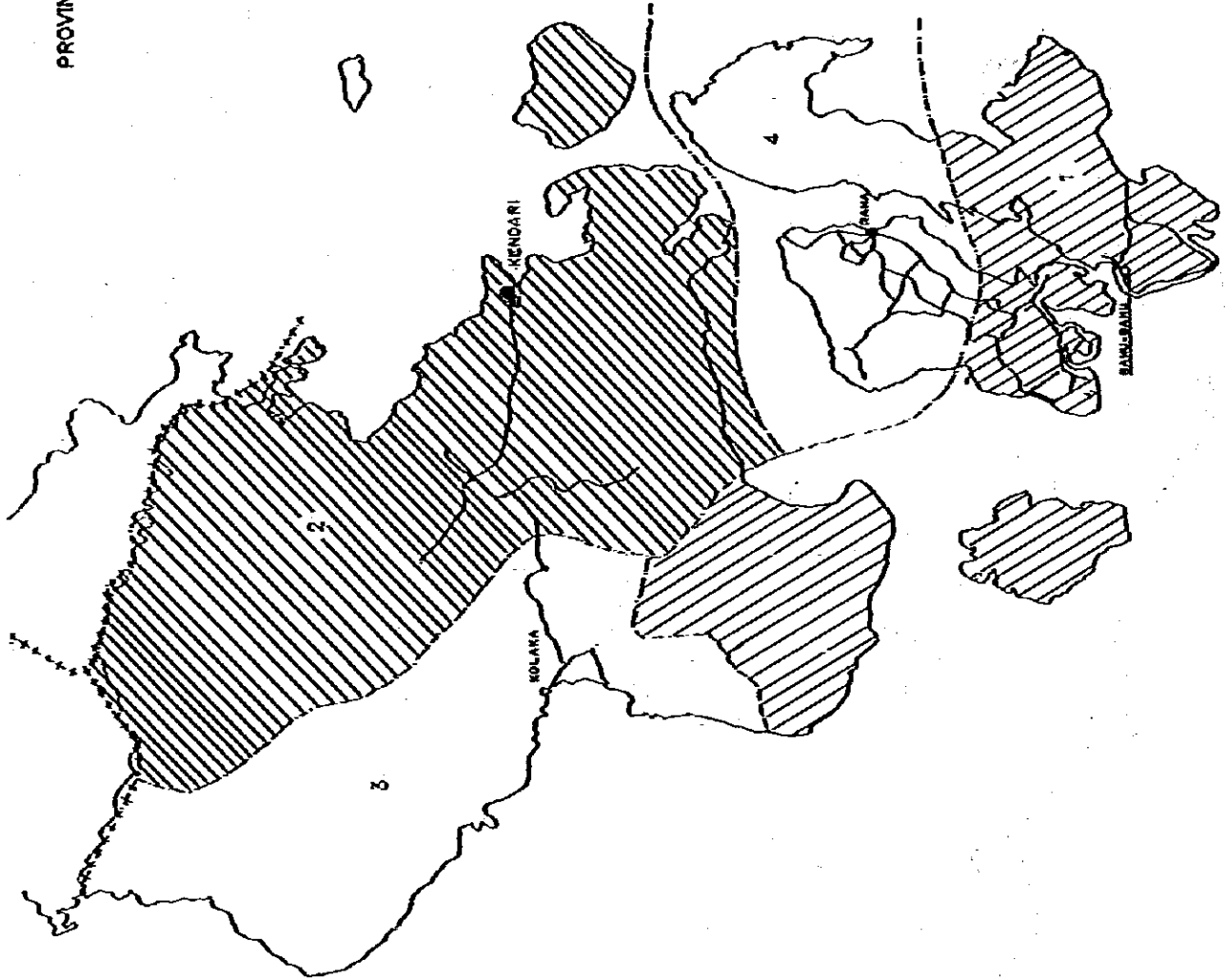


Province Sulawesi Tenggara
Kabupaten :

- 1 BUTON
- 2 KENDARI
- 3 KOLAKA
- 4 MUNA

PROVINCE CAPITAL
KABUPATEN CAPITAL
PROVINCIAL BORDER
KABUPATEN BORDER
LOCATION OF THE PROJECT AREA.

SCALE :
0 100 200 300 KM.



**APPENDIX B-2 SOCIAL AND ECONOMIC DATA OF EACH PROVINCES
AND
KABPATENS IN THE PROJECT AREA**

DATA PROVINCE NEAU

POPULATION

1971	1978	Annual Growth Rate (%)
1,641,074	2,037,265	3.14

AREA

Area (km ²)	No. of Kabupaten	No. of Kecamatan	No. of Desa
94,561.60	6	67	873

LAND USE

	Wet field for Rice	Dry Land	Village	Forest	Others	Total
Ha	109,971	555,861	-	6,600,000	2,190,348	9,456,160
%	1.2	5.9	-	69.8	23.1	100

FOOD CROPS PRODUCTION

	1972			1977		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy *	86,644	2.28	202,228	109,971	2.13	263,709
Dry Paddy *	48,704	1.04	51,001	56,684	1.33	75,473
Cassava	6,349	6.74	42,804	7,131	10.03	71,765
Maize	6,379	0.83	5,334	12,686	0.92	11,717
Sweet Potato	1,342	5.03	8,646	2,744	6.39	17,551
Soya bean + Peanut + Small green pea	963	0.72	693	2,341	0.39	1,393

* Paddy X 93% X 64% = Rice

CASH CROPS PRODUCTION

	1972			1977		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Rubber	256,317	0.23	61,145	262,123	0.24	63,610
Cocosnut	139,828	0.60	84,018	179,182	0.33	95,433
Clove	1,250	0.13	188	4,643	0.09	400
Coffee	1,776	0.11	201	2,249	0.13	303
Pepper	13	0.30	4	20	0.30	6
Sugar Cane	227	1.07	244	294	1.00	294

FOOD BALANCE

	Consumption (Ton)	Kg per capita*	Production (Ton)
Rice	227,879	120.0	194,060
Cassava + sweet Potato	118,117	62.2	89,314
Corn	27,915	14.7	11,717

REGIONAL INCOME AT 1969 CONSTANT PRICES

	Agriculture	Mining & Quarrying	Transport & Communication	Others	Total (Millions)
1972	20,267	8,217	5,806	29,232	63,522
1976	22,732	9,601	10,280	42,097	85,310

* Source: National Socio Economic Survey 1976

KABUPATEN KAMPAR

1977

Kecamatan	Area (Km ²)	Population	Population Density (Km ²)
Bangkayang	547.39	38,928	71.1
Kampar	1,003.53	68,489	68.2
Siak Baru	4,150.87	51,313	12.4
Kampar Kiri	1,961.41	21,583	11.0
Langgam	3,069.17	7,825	2.5
Bunet	3,485.21	9,236	2.6
Pangkalan Kuras	1,724.75	9,214	5.3
Kuala Kampar	3,707.77	19,305	5.2
Pepeuban	918.82	7,491	7.8
III Koto Kampar	1,752.90	15,414	8.8
Koto IV Koto	1,114.31	9,924	8.9
Katbah	1,029.60	34,502	33.5
Yadua	1,016.57	9,131	9.0
Koto Darussalam	1,179.49	6,046	5.1
Teboassi	1,429.02	9,393	5.8
Total	28,291.86	317,494	11.2

KABUPATEN KEP. RIAU

1977

Kecamatan	Area (Km ²)	Population	Population Density (Km ²)
Bintan Utara	501.75	15,093	30.1
Bintan Selatan	632.08	71,459	113.1
Bintan Timur	521.30	25,547	49.0
Ujung	892.73	19,065	21.4
Senayang	397.49	12,168	30.6
Singkap	808.02	28,878	35.7
Kundur	358.39	43,473	121.3
Karimau	221.55	40,011	180.6
Koro	260.65	15,503	59.5
Jenaja	260.65	6,412	24.6
Tabelan	169.42	4,064	24.0
Siatan	267.17	21,027	78.7
Misal	39.10	4,278	109.4
Batan	612.53	30,958	50.5
Serasan	231.58	6,124	26.1
Bunguran Barat	938.34	11,806	12.6
Bunguran Timur	583.95	9,700	9.9
Total	8,059.70	365,566	45.1

ROAD NETWORK

1977

Kabupaten	National Road (km)	Provincial Road (km)	Kabupaten Road (km)	Others (km)	Total (km)
Kodja Pekanbaru	5				
Kampar	95	356	813		1,264
Indragiri Hulu		336			
Indragiri Hilir		68			
Bengkalis		225			
Kepulauan Riau			473		473
Total (Province)	100	1,005	1,639		2,744

METEOROLOGY

at Pekanbaru 1977

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temp. (°C)	31.4, 21.5	31.4, 21.5	32.3, 22.0	33.0, 22.3	33.6, 22.2	33.5, 21.6	32.5, 21.3	31.8, 21.1	33.0, 21.1	31.9, 21.9	32.1, 22.2	32.1, 22.2
Rainfall (mm)	91	343	160	168	125	178	142	194	252	215	420	300
Humidity (%)												

DATA KAP. KAMPAR

POPULATION

1971	1978	Annual Growth Rate (%)
258,692	339,566	3.96

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (Km ²)
28,291.86	15	123	12.0

LAND USE

	1972					Total
	Wet field for Rice	Dry Land	Village	Forest	Others	
Ha	14,973	120,769	-	-	-	2,829,186
%	0.5	4.3	-	-	-	100

FOOD CROPS PRODUCTION

	1972			1977		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	-	-	-	14,973	2.36	35,378
Dry Paddy	-	-	-	36,415	1.31	47,737
Cassava + Sweet Potato	-	-	-	1,936	7.31	14,281
Maize + Peanut + Soya bean	-	-	-	3,515	0.76	2,664

CASH CROPS PRODUCTION

	1972			1977		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee	-	-	-	657	0.16	123
Pepper	-	-	-	17.5	0.29	5.2
Clove	-	-	-	620	0.01	5.4
Rubber	-	-	-	60,812	0.28	17,356
Coconut	-	-	-	6,180	0.64	3,967
Sugar Cane	-	-	-	233	1.17	274

DATA KAP. KEP. BEAU

POPULATION

1971	1978	Annual Growth Rate (%)
301,136	379,235	1.96

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (Km ²)
8,099.70	17	147	46.8

LAND USE

	1972					Total
	Wet field for Rice	Dry Land	Village	Forest	Others	
Ha	370	96,975	-	-	-	809,970
%	0.0	12.0	-	-	-	100

FOOD CROPS PRODUCTION

	1972			1977		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	375	0.94	352.5	370	3.68	1,362
Dry Paddy	46.3	0.81	37.67	203	0.69	141.6
Cassava + Sweet Potato	1,700	7.41	12,600	3,612	6.12	22,095
Maize + Peanut + Soya bean	47.5	0.79	37.79	168.5	0.93	165.6

CASH CROPS PRODUCTION

	1972			1977		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee	-	-	-	-	-	-
Pepper	-	-	-	-	-	-
Clove	788.5	-	-	2,770	0.11	317
Rubber	-	-	-	58,488	0.22	12,920
Coconut	21,230	-	-	30,175	0.41	12,260
Sugar Cane	-	-	-	-	-	-

KABUPATEN KUPANG RIANG

VEHICLE REGISTRATION

Vehicle Type	19	19	Growth Rate (% annual)
Passenger Car			
Truck			
Bus			
Motor Cycle			
Non Motor Vehicle			
Total			

KABUPATEN KAMPAR

VEHICLE REGISTRATION

Vehicle Type	19	19	Growth Rate (% annual)
Passenger Car			
Truck			
Bus			
Motor Cycle			
Non Motor Vehicle			
Total			

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School (Class Room)	Junior High School (Class Room)	Hospital	Health Center	Public Polyclinic
Bintan Utara					
Bintan Selatan					
Bintan Timur					
Lingga					
Semayang					
Singkep					
Kundur					
Karimun					
Moro					
Jemaja					
Tambelan					
Silakan					
Milai					
Batam					
Serasan					
Bunguran Barat					
Bunguran Timur					
Total	272 (1657)	36 (202)	1	17	17

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School (Class Room)	Junior High School (Class Room)	Hospital	Health Center	Public Polyclinic
Bangkiling					
Kampar					
Siak Hulu					
Kampar Kiri					
Lampang					
Bunut					
Panglajan Kuala					
Kuala Kampar					
Kepanuhan					
XIII Koto Kampar					
Koman IV Koto					
Kambah					
Tandun					
Kunto Darussalam					
Tembusel					
Total	264 (1507)	19 (101)	1	15	6

DATA PROVINCE SUMATRA SELATAN

POPULATION

1971		1977	Annual Growth Rate (%)
3.476.216	4.135.088	2.92	

AREA

Area (in 2)	No. of Kabupaten	No. of Kecamatan	No. of Desa
109.254	10	193	---

LAND USE

	Wet field for rice	Dry Land	Village	Forest	Others	Total
Ha	262,522	719,802	56,041	5,425,941	4,429,094	10,925,400
%	2.4	6.6	0.4	50.1	40.5	100

FOOD CROPS PRODUCTION

	1972		1978	
	Ha	Ton	Ha	Ton
Wet Paddy *	239,036	2,77	603,231	2,81
Dry Paddy *	123,266	1,27	159,145	1,33
Cassava	20,938	12,14	234,463	23,207
Maize	6,384	0,77	4,933	0,77
Sweet Potato	4,721	4,71	22,266	7,137
Soya bean, Peanut + Green small bean	7,769	0,76	5,876	7,196
				1,17
				6,486

* Paddy X 92% x 64% = Rice

CASH CROPS PRODUCTION

	1975		1978	
	Ha	Ton	Ha	Ton
Rubber			151,986	475,510
Coconut			10,916	33,229
Clove			16	9,509
Coffee			34,812	82,003
Pepper			12,844	15,312
Sugar cane			-	-

FOOD BALANCE

	Consumption (Ton)	Kg Per Capite	Production (Ton)
Rice	496,210	120.0	560,200
Cassava + Sweet Potato	257,200	62.2	209,293
Corn	60,790	14.7	4,955

REGIONAL INCOME AT 1975 CONSTANT PRICES

	Agriculture	Mining & Quarrying	Transport & Communication	Others	Total (Thousand Rp.)
1975	133,435,775	141,595,590	25,165,315	323,869,599	724,066,279
1977	140,599,152	131,823,701	32,565,951	479,843,371	784,832,175

KABUPATEN O.K.I 1978

KABUPATEN LAPAT 1978

Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)	Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)
Kayu Agung	1,049	46,120	44.0	Labat	912	55,355	60.7
Muara Karang	610	29,259	48.0	Tanjung Sakti	220	24,617	111.9
Tg. Lubuk	545	47,662	87.5	Pagar Alam	750	70,313	93.8
Pedamaran	1,624	31,022	19.1	Muara Pinang	570	41,450	72.7
Mesaji	3,656	11,166	3.0	Pendopo	149	33,138	236.7
Tg. Batu	900	52,126	57.9	PD Tepung / Ulu Mast	837	38,792	46.3
Tg. Raja	107	90,422	845.1	Tebing Tinggi	769	42,811	57.9
Sirih Pulau Padang	571	62,981	110.3	Jaraf	323	39,674	122.8
Indralaya	572	52,126	91.1	Kt. Agung / Tg. Tebak	249	28,501	114.5
Pecututan	332	56,479	147.9	Pulau Pinang	2,439	24,814	10.0
Tulang Selapan	9,933	36,608	3.7	Marapi	406	26,561	65.4
Paspangan	1,659	34,824	21.0	Kilim / Bunga Mas	2,400	32,671	13.6
Total	21,658	551,015	25.4	Total	10,028	458,697	45.7

ROAD NETWORK

Kabupaten	National Road (Km)	Provincial Road (Km)	Kabupaten Road (Km)	Others (Km)	Total (Km)
1. Kab. Nias Kepulauan			338.0		
2. Kab. Ogan Komering Ilir	35.5	159.5	393.0		588.0
3. Kab. Ogan Komering Lulu			533.9		
4. Kab. Labat			271.5		
5. Kab. Masi Rawas			98.6		
6. Kab. Bangka			573.7		
7. Kab. Belitung			335.7		
8. Kab. Lint			217.5		
Total (Province)	662.5	2,634.5	2,749.4	-	6,046.4

METEOROLOG

at Palembang 1977

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temp. (°C)	215	226	245	352	153	108	149	145	89	99	365	159
Rainfall (mm)												
Humidity (%)												

DATA KAN. LAMAT

POPULATION

1976	1978	Annual Growth Rate (%)
433,087	438,697	2.84

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (/Km ²)
10,028	12	-	43.7

LAND USE

Wet field for rice	Dry Land	Village	Forest	Others	Total
					Ha
21,083					1,002,800
2.1					100

FOOD CROPS PRODUCTION

	1972			1979		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	18,942	3.91	75,080	21,083	4.37	92,170
Dry Paddy	16,170	2.10	36,157	13,678	2.23	30,431
Cassava + Sweet Potato	1,022	9.03	9,224	998	5.79	5,780
Maize + Peanut + Soya bean	1,900	0.69	1,319	3,009	0.83	2,511

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee						
Pepper						
Clove						
Rubber						
Coconut						
Sugar Cane						

DATA KAN. O.K.I.T

POPULATION

1976	1978	Annual Growth Rate (%)
520,116	551,015	2.93

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (/Km ²)
21,658	12	314	23.4

LAND USE

Wet field for rice	Dry Land	Village	Forest	Others	Total
					Ha
71,007					2,165,800
3.2					100

FOOD CROPS PRODUCTION

	1977			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	61,544	2.00	123,228	71,007	2.21	157,114
Dry Paddy	12,521	1.05	13,186	21,024	1.21	26,616
Cassava + Sweet Potato	3,116	4.52	16,082	7,328	4.65	34,065
Maize + Peanut + Soya bean	1,845	0.65	1,195	3,670	0.59	2,160

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee				120	0.23	27
Pepper				-	-	-
Clove				232	-	-
Rubber				49,383	0.26	18,737
Coconut				2,282	0.27	618
Sugar Cane				-	-	-

KABUPATEN O.K.I

VEHICLE REGISTRATION

Vehicle Type	19	19	Growth Rate (% annual)
Passenger Car			
Truck			
Bus			
Motor Cycle			
Non Motor Vehicle			
Total			

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School (Class Room)	Junior High School (Class Room)	Hospital	Health Centre	Public Polyclinic
Kayu Agung	38 (255)		1	1	
Pedamaran	11 (96)			1	
Tanjung Lubuk	28 (202)			1	
Tanjung Raja	58 (411)			1	
Inderalaya	28 (200)			1	
Tanjung Batu	38 (245)			1	
Mesuji	20 (134)			1	
Pesulutan	32 (211)			1	
Muara Kuang	28 (165)			1	
Sira Pulu Padang	32 (261)			1	
Paopangan	23 (135)			1	
Tlg. Selapan	22 (134)			1	
Total	358 (2449)	32 (148)	1	12	

DATA KUMUDATIN 1977 (KEMUDATIN SELATAN OCEAN TUNGGAL)

POPULATION 1977

KORUMUDATIN	AREA (Km ²)	POPULATION	POPULATION DENSITY / Km ²
1. Semendo	900	26,197	29
2. Tanjung Agung	850	52,101	61
3. Muara Itim	475	31,764	67
4. Gunung Megang	1,000	41,163	22
5. Talang Uda	1,050	80,911	44
6. Pradumulien	2,150	103,084	47
7. Gelumbang	1,450	70,253	48
TUNGGAL	9,575	403,553	42

POPULATION

1971	1977	ANNUAL GROWTH RATE (%)
363,769	403,553	1.74

AREA

AREA (Km ²)	NO OF KORUMUDATIN	NO OF DESA	POPULATION DENSITY (Km ²)
9,575	7	32	42

LAND USE

WET FIELD FOR RICE	DRY LAND	VILLAGE	FOREST	OTHERS	TOTAL
19,202	156,933		92,303	698,975	937,500
2	16	9	73		100

	1971		1977	
	HA	TON/HA	HA	TON/HA
Wet Paddy	16,475	3.66	50,360	2.84
Dry Paddy	31,640	0.99	31,321	1.15
Cassava	1,370	6.00	10,960	8.39
Yams	610	0.70	427	0.87
Peanuts " Sweet "	710	6.30	4,470	2.98
Potatoes				2,373

CASH CROPS PRODUCTION

	1971		1977	
	HA	TON/HA	HA	TON
Rubber	105,101	0.23	24,158	108,963
Coconut	814	1.41	1,146	1,094
Clove	140	0.003	0.39	970
Coffee	4,545	0.49	2,207	7,091
Pepper	39	0.74	29	42
Sugar Cane				
Other	120	0.42	50	92

VEHICLE REGISTRATION

VEHICLE TYPE	1971		1977		GROWTH RATE (% ANNUAL)
	1971	1977	1971	1977	
Passenger Car	126	154			3.4
Truck	675	643			- 0.0
Bus	97	133			5.4
Motor Cycle			16	27	9.2
Non Motor Cycle					
TOTAL			916	957	0.77

DATA KAD. OKU

POPULATION 1977

KECAMATAN	AREA (Km ²)	POPULATION	POPULATION DENSITY / Km ²
1. Kota Batuaja	815	54,750	67
2. Pengadonan	2,397	39,373	17
3. Perisijawan	1,134	27,737	24
4. Marapura	501	45,735	91
5. Bway Madang	1,060	135,259	127
6. Belisang	900	93,660	117
7. Cempaka	885	79,469	89
8. Sibung	500	35,617	71
9. Muara Dua	1,143	48,710	42
10. Mendang Agung	2,365	46,786	19
11. Maradua Kalam	870	17,230	23
12. Pulau Berangin	750	16,773	29
JUMLAH	13,200	635,198	48

POPULATION

1968	1977	ANNUAL GROWTH RATE (%)
494,179	635,198	2.8

AREA

AREA (Km ²)	NO OF KECAMATAN	NO OF DESA	POPULATION DENSITY (Km ²)
13,200	12	40	48

LAND USE

	WET FIELD FOR RICE	DRY LAND	VILLAGE	FOREST	OTHERS	TOTAL
HA	45,634	114,182				1,320,000
%	3.46	8.65				100

EDUCATION & MEDICAL SALES

KECAMATAN	ELEMENTARY SCHOOL	JUNIOR HIGH SCHOOL	HOSPITAL	HEALTH CENTER	PUBLIC POLICE CLINIC
1. Serendo	121	59	"	1	3
2. Tanjung Agung	108	49	"	1	4
3. Muara Dua	114	72	1	1	4
4. Gunung Megang	114	27	"	1	4
5. Talang Ubi	214	27	"	2	4
6. Prabumulih	201	5	1	1	6
7. Calumpang	186	95	"	1	6
JUMLAH	1,229	333	2	8	31

KAN. OKY

WOOD CROPE PRODUCTION

	1971		1977	
	KA	TON/KA	KA	TON/KA
Wec Yaddy	31,916	3.38	107,966	45,034
Dry Taddy	36,894	1.16	42,757	27,601
Cassava	3,353	7.75	25,913	3,820
Maline	1,453	0.59	863	1,907
Sweet Potatoes, Soyabean, Peanut, Greenne Small Tea	1,257	1.04	2,316	2,368
				1.83
				4,377

CASH CROPE PRODUCTION

	1968		1977	
	KA	TON/KA	KA	TON/KA
Rubber	46,466	0.49	22,955	41,350
Cocunut	2,627	0.32	840	3,225
Clove	0	"	-	1,032
Coffee	34,936	0.53	18,457	31,000
Pepper	257	0.44	114	369
Sugar Cane				0.27
Others				100
				14,761
				998
				0.58
				17,624

KARUPATAN OKY

VEHICLE REGISTRATION

VEHICLE TYPE	1968	1977	GROWTH RATE (% ANNUAL)
Passenger Car	76	303	16.6
Truck	409	891	9.0
Bus	117	207	10.9
Motor Cycle	-	-	-
Non Motor Vehicle	-	-	-
	602	1,491	10.6

REGISTRATION & MEDICAL CARE

KOMUNITAS	ELEMENTARY SCHOOL	JUNIOR HIGH SCHOOL	HOSPITAL	HEALTH CENTER	PUBLIC HEALTH CLINIC
1. Kota Batuaja				1	6
2. Pangandean				1	4
3. Paninjawan				1	3
4. Marcapura				1	3
5. Buay Madang				1	7
6. Belitang				1	2
7. Cempaka				1	3
8. Simpang				1	2
9. Muara Dua				1	4
10. Bاندung Agung				1	2
11. Muara Kiam				1	2
12. Pulau Berinyah				1	3
	2,260	177		12	43

DATA PROVINCE LAUNING

Area (Ha ²)	No. of Kabupaten	No. of Kecamatan	No. of Desa
33,376.50	4	71	1,492

POPULATION

1972	1977	Annual Growth Rate (%)
2,848,276	3,707,324	5.41

AREA

	Wet Field for Rice	Lotry Land	Village	Forest	Ochres	Total
Ha	135,654	352,206	---	2,352,849	297,041	3,037,650
%	4.0	10.6	---	76.5	8.9	100

LAND USE

FOOD CROPS PRODUCTION

	1972			1977		
	Ha	Ton/ha	Ton	Ha	Ton/ha	Ton
Wet Paddy *	236,887	2.17	513,982	135,354	3.00	406,992
Dry Paddy *	43,507	10.70	465,332	117,283	2.02	236,966
Cassava	59,423	1.32	78,634	71,873	12.10	868,142
Maize	3,341	6.20	20,789	41,060	1.50	61,658
Sweet Potato				2,073	8.32	22,232
Soya bean *						
Peanut *						
Green Shall						
Yam						
	35,786	0.64	23,019	1,388	0.62	989

* Paddy X 95% X 64% = Rice

CASH CROPS PRODUCTION

	1972			1977		
	Ha	Ton/ha	Ton	Ha	Ton/ha	Ton
Rubber	15,738	0.34	5,300	18,500	0.36	6,790
Cocunut	38,760	0.72	28,000	85,663	0.44	37,773
Clove	9,616	0.46	4,300	35,750	0.17	6,230
Coffee	52,808	0.59	31,129	87,382	0.60	52,734
Pepper	34,290	0.49	17,000	36,667	0.61	22,500
Sugar Cane	204	0.19	40	270	1.01	273

REGIONAL INCOME AT 1971 CONSTANT PRICES

	Agriculture	Mining & Quarrying	Transport & Communication	Others	Total
1971	41,202	-	2,945	29,864	74,011
1976	57,440	-	4,082	48,653	110,975

FOOD BALANCE

	Consumption (Ton)	Kg. per Capita	Production (Ton)
Rice	444,879	120.0	391,530
Cassava *	230,396	62.2	890,396
Sweet Potato			
Corn	65,620	14.7	61,638

* Source National Socio Economic Survey 1976

KABUPATEN LANGUNG SELATAN

Kecamatan	Area (Km ²)	Population	Population Density (Km ²)
Cekuh Belak	232.83	30,151	129.5
Wonosobo	220.21	67,300	305.6
Kota Agung	207.21	52,738	254.5
Talang Paliang	188.77	109,083	577.9
Pulau Panggung	1,233.56	62,434	50.6
Pagelaran	268.65	83,950	312.5
Palingseru	85.42	64,613	756.4
Sukoharjo	110.72	71,504	645.8
Gasing Rejo	50.63	45,958	908.3
Fardasuka	131.91	35,546	269.5
Kelondong	114.36	58,629	512.7
Gedong tataan	349.78	105,687	303.0
Ketar	1,212.02	102,991	85.0
Vedaton	323.85	158,921	490.7
Telukbetung/Panjang	157.32	107,001	680.1
Paliang Cernia	349.33	53,054	154.1
Kelibung	406.64	106,066	260.7
Kalianda	176.09	47,559	270.1
Panengah	110.59	38,160	345.1
Pales	440.07	36,596	83.2
Total	6,765.68	1,437,916	212.5

KABUPATEN LANGUNG UTARA

Kecamatan	Area (Km ²)	Population	Population Density (Km ²)
Kotabont	303.59	74,579	245.7
Abung Barat	366.76	63,767	173.9
Abung Timur	303.09	30,822	101.7
Abung Selatan	306.98	39,670	129.2
Bukit Kemuning	393.10	30,915	78.6
Tanjung Raja	295.81	20,433	69.1
Sumber Jaya	287.35	37,557	130.7
Kesuy	310.34	25,734	82.9
Benjit	250.00	17,669	70.7
Banbangan Dupa	1,450.42	28,649	19.8
Paradatu	304.66	36,492	119.8
Sungkal Utara	311.79	18,436	59.1
Sungkal Selatan	395.70	29,703	75.2
Talang Kawang Udik	283.86	35,801	126.1
Talang Kawang Tengah	1,129.53	36,436	32.3
Kenggala	2,338.84	35,034	14.6
Faluan Batu	1,157.81	14,932	12.9
Bahaga	394.08	26,138	66.3
Mesaji Langung	2,610.04	10,724	3.9
Balik Bukit	487.57	18,651	38.3
Kelalan	1,203.61	33,063	27.5
Pesisir Utara	551.66	14,534	26.3
Pesisir Tengah	169.30	35,718	211.0
Pesisir Selatan	1,477.50	18,502	12.5
Total	17,368.50	713,519	41.1

ROAD NETWORK

1977

Kabupaten	National Road (Km)	Provincial Road (Km)	Kabupaten Road (Km)	Others (Km)	Total (Km)
Langung Selatan	37.6	432.2	234.3	-	704.1
Langung Tengah	37.7	513.9	378.6	-	930.2
Langung Utara	164.5	417.5	648.5	-	1,230.5
Kota raja T.K - T.B	5.0	8.5	83.6	-	97.1
Total (Province)	244.8	1,372.1	1,345.0	-	2,961.9

METEOROLOGY

at Tanjungkarang 1977

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temp. (°C)	25.5	25.2	26.6	26.4	26.1	25.6	25.4	25.3	25.8	26.9	26.7	26.0
Rainfall (mm)	376.3	356.1	316.1	84.9	241.0	118.0	77.6	91.3	51.2	72.7	111.0	352.2
Humidity (%)												

DATA KABUPATEN SULTAN

POPULATION

1971	1977	Annual Growth Rate (%)
1,114,174	1,437,916	3.71

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (/km ²)
6,765.9	20	569	212.5

LAND USE

	Wet Field for Rice	Dry Land	Village	Forest	Others	Total
Ha	48,344	255,750	17,600	316,270	38,424	676,388
%	7.2	37.8	2.6	46.7	5.7	100

FOOD CROPS PRODUCTION

	1972			1976		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	64,614	3.95	175,404	48,544	4.12	200,179
Dry Paddy	24,303	2.22	53,875	30,288	1.91	57,950
Cassava + Sweet Potato	10,601	8.74	92,716	12,863	11.99	154,230
Mais + Peanut + Soya bean	23,318	1.08	25,363	10,902	2.14	23,369

CASH CROPS PRODUCTION

	1976			1977		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee	30,122	0.77	23,055	48,673	0.59	28,920
Pepper	1,140	0.11	120	999	0.51	510
Clove	12,580	0.19	2,358	15,855	0.19	3,055
Rubber	4,016	0.48	1,947	4,230	0.59	1,687
Coconut	32,565	0.28	9,184	41,997	0.46	19,550

DATA KABUPATEN UTARA

POPULATION

1971	1978	Annual Growth Rate (%)
468,920	713,519	6.18

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (/km ²)
17,369.5	24	454	41.1

LAND USE

	Wet Field for Rice	Dry Land	Village	Forest	Others	Total
Ha	13,506					1,736,850
%	0.8					100

FOOD CROPS PRODUCTION

	1977			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	13,506	3.18	43,051	-	-	-
Dry Paddy	43,703	1.74	73,962	49,698	1.67	83,016
Cassava + Sweet Potato	16,754	16.08	269,464	15,373	16.08	247,217
Mais + Peanut + Soya bean	7,206	0.94	6,769	9,714	0.60	5,819

CASH CROPS PRODUCTION

	1977			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee	29,876	0.58	17,379	29,658	0.66	19,582
Pepper	24,276	0.60	14,740	24,683	0.77	19,073
Clove	10,447	0.20	2,159	10,377	0.08	859
Rubber	11,945	0.35	4,209	11,777	0.47	5,546
Coconut	22,904	0.41	9,420	20,203	0.38	7,598

KABUPATEN LAMPUNG UTARA

VEHICLE REGISTRATION

Vehicle Type	19	1978	Growth Rate (% annual)
Passenger Car			
Truck			
Bus			
Motor Cycle			
Non Motor Vehicle		9,323	
Total			

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School	Junior High School	Hospital	Health Center	Public Polyclinic
Pesisir Selatan	-				
Pesisir Tengah	-				
Pesisir Utara	3				
Balik Bukit	4				
Sumba Jaya	2				
Bukit Kemuning	7				
Kotabumi	15				
Sungkai Selatan	4				
Kasuy	3				
Blaabangan Umpu	1				
Pakuon Ratu	1				
Tulang Bawang Udik	-				
Tl. Bawang Tengah	6				
Menggala	6				
Mesuji Lampung	2				
Belalau	5				
Tanjung Raja	2				
Abung Timur	6				
Abung Barat	8				
Abung Selatan	2				
Sungkai Utara	2				
Banjit	1				
Baradatu	2				
Bahuga	5				
Total	87	-	1	-	24

DATA PROVINSI NUSA TENGGARA TIMOR

Area (Km ²)	No. of Kabupaten	No. of Kecamatan	No. of Desa
49,879.98	12	98	1720

POPULATION		AREA	
1971	1978	Annual Growth Rate (%)	
2,295,279	2,594,943	1.77	

LAND USE

	Wet field Cm Rice	Dry Land	Village	Forest	Others	Total
Ha	142,108	53,926	35,913	2,440,627	1,715,424	4,987,998
%	2.8	13.1	0.7	48.9	34.4	100

FOOD CROPS PRODUCTION

	1974		1978	
	Ha	Ton	Ha	Ton
Wet	114,145	206,492	142,108	213,786
Dry	62,869	490,378	77,344	318,037
Cassava	464,711	139,330	200,230	157,149
Maize	23,637	144,803	19,733	73,370
Sweet Potato	18,030	10,030	23,049	10,614
Soye bean, Peanut + Green small Pea				

* Paddy x 92% x 64%

CASH CROPS PRODUCTION

	1976		1978	
	Ha	Ton	Ha	Ton
Rubber	79,862	0.27	80,276	0.38
Coconut	437	20,392	936	31,180
Clove	12,970	0.26	15,812	0.00
Coffee	9	-	-	0.21
Pepper	-	-	-	-
Sugar Cane	-	-	-	-

FOOD BALANCE

	Consumption (Ton)	Kg per capita	Production (Ton)
Rice	311,390	120.0	129,980
Cassava + Sweet Potato	161,400	62.2	393,407
Corn	34,150	14.7	157,140

NATIONAL INCOME AT 1975 CONSUMER PRICES

	Agriculture	Mining & Quarrying	Transport & Communication	Others	Total Million Rp
1975	44,528,325	169,176	1,720,385	46,900,541	93,334,427
1977	46,336,738	195,799	2,030,741	58,992,141	105,892,082

KABUPATEN MANGGARAI

KABUPATEN BELU

Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)	Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)
1. Ruteng	128.2	36,874	288	Kamaknen	214	15,154	70.8
2. Perw. Ruteng	56.0	13,292	237	Yasifeto Timur	326	20,775	63.7
3. Kopata Ruteng	70.0	20,615	295	Yasifeto Barat	442	30,282	68.5
4. Satar Mese	756.0	30,587	40	Malaka Timur	573	19,827	34.6
5. Leabor	707.0	29,737	42	Malaka Tengah	294	32,129	109.3
6. Kosodo	810.9	17,282	21	Malaka Barat	315	50,631	160.7
7. Perw. Kosodo	864.1	15,274	18				
8. Kuvus	388.1	24,114	62				
9. Perw. Kuvus	307.2	15,007	49				
10. Reok	340.5	15,027	44				
11. Cibai	167.4	23,421	140				
12. Lumba - Leda	280.4	18,442	66				
13. Perw. L. Leda	334.6	30,206	90				
14. Borong	503.4	26,334	52				
15. Perw. Borong	383.6	22,112	58				
16. Elar	588.0	15,289	26				
17. Perw. Elar	420.0	13,161	31				
Total 17	7,105.0	366,774	51.5	Total	2,174	178,072	81.9

NUSA TENGGARA TIMUR (S.T.T)

ROAD NETWORK

Kabupaten	National Road (Km)	Provincial Road (Km)	Kabupaten Road (Km)	Others (Km)	Total (Km)
Manggarai			408.0		
Belu			287.0		
Total (Province)	968.3	1,565.8	2,292.1	-	4,826.2

METEOROLOGY

at Kupang 1978

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temp. (°C)	26.9	26.0	27.0	26.9	27.4	26.1	25.1	25.8	26.7	28.2	28.7	27.5
Rainfall (mm)	238.0	766.4	116.1	85.6	162.1	55.1	38.2	11.9	2.0	-	192.9	263.2
Humidity (%)	84	87	81	74	75	74	74	72	64	61	69	77

DATA KAD. MANGARAI

POPULATION

1971	1976	Annual Growth Rate (%)
-	366,031	---

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (/km ²)
7,105.08	17	255	51.5

LAND USE

	1972					Total
	Wet field for Rice	Dry Land	Village	Forest	Others	
Ha	2,046	-	-	228,589	-	710,508
%	0.3	-	-	32.2	-	100

FOOD CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Rice	-	-	-	20,458	2.71	55,495
Dry Rice	-	-	-	19,683	0.36	7,085
Cassava + Sweet Potato	-	-	-	9,568	1.68	16,106
Maize + Peanut + Soya bean	-	-	-	27,204	0.67	18,269

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee	-	-	-	9,563	-	-
Pepper	-	-	-	-	-	-
Clove	-	-	-	77	-	-
Rubber	-	-	-	-	-	-
Coconut	-	-	-	6,827	-	-
Sugar Cane	-	-	-	-	-	-

DATA KAD. DINGEL

POPULATION

1974	1979	Annual Growth Rate (%)
173,925	178,072	2.38

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (/km ²)
2,174	6	73	81.90

LAND USE

	1977					Total
	Wet field for Rice	Dry Land	Village	Forest	Others	
Ha	4,187	-	-	-	-	217,400
%	1.9	-	-	-	-	100

FOOD CROPS PRODUCTION

	1977			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	3,765	1.20	4,513	4,187	1.70	7,138
Dry Paddy	1,176	0.86	1,016	1,143	0.89	1,025
Cassava + Sweet Potato	4,137	0.74	3,072	4,016	2.27	10,503
Maize + Peanut + Soya bean	19,415	0.67	13,137	17,370	0.40	6,988

CASH CROPS PRODUCTION

	1977			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee	-	-	-	-	-	-
Pepper	-	-	-	-	-	-
Clove	-	-	-	-	-	-
Rubber	-	-	-	-	-	-
Coconut	-	-	-	19.5	-	-
Sugar Cane	-	-	-	-	-	-

KABUPATEN NILLU

VEHICLE REGISTRATION

Vehicle Type	19	1978	Growth Rate (% annual)
Passenger Car	-	-	-
Truck	-	82	-
Bus	-	69	-
Motor Cycle	-	386	-
Non Motor Vehicle	-	-	-
Total	-	537	-

KABUPATEN MANGGARAI

VEHICLE REGISTRATION

Vehicle Type	19	1978	Growth Rate (% annual)
Passenger Car	-	-	-
Truck	-	105	-
Bus	-	6	-
Motor Cycle	-	361	-
Non Motor Vehicle	-	120	-
Total	-	592	-

1978

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School	Junior High School	Hospital	Health Center	Public Polyclinic
1. Lematlen	13				
2. Tas - Tim	18				
3. Tas - Mar	27				
4. Mala - Timur	30				
5. Mala - Tengah	27				
6. Mala - Barat	43				
Total	158		2	6	8

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School	Junior High School	Hospital	Health Center	Public Polyclinic
Total	330	25	2	17	49

DATA PROVINCE SULAWESI UTARA

Area (km ²)	No. of Kabupaten	No. of Kecamatan	No. of Desa
25,786	7	83	1,235

AREA

1974	1978	Annual Growth Rate (%)
1,826,407	1,975,367	1.98

LAND USE

	Wet field for Rice	Dry Land	Village	Forest	Others	Total
Ha	78,638	421,068	21,600	1,475,422	581,672	2,578,600
%	3.0	16.3	0.8	57.2	22.7	100

FOOD CROPS PRODUCTION

	1974		1978	
	Ha	Ton/Ha	Ha	Ton/Ha
Wet Paddy *	65,308	3.91	255,824	78,638
Dry Paddy *	22,020	1.61	35,383	23,924
Cassava	13,140	7.96	104,542	12,862
Maise	112,129	1.12	125,037	127,163
Sweet Potato	1,461	3.16	48,913	10,946
Soya bean				
Peanut + Green				
Small Pns	6,240	0.71	4,422	24,728
				1.02
				25,138

* Paddy x 92% x 64% = Rice

FOOD BALANCE

	Consumption (Tons)	Kg per Capita	Production (Ton)
Rice	237,040	120	202,400
Cassava *	122,870	62.2	166,003
Sweet Potato	29,040	14.7	155,923

REGIONAL INCOME AT 1974 CONSTANT PRICES

	Agriculture	Mining & Quarrying	Transport & Communication	Others	Total Million Rup.
1974	63,349	233	10,322	66,858	142,942
1977	90,014	809	16,486	99,211	206,520

CASH CROPS PRODUCTION

	1974		1978	
	Ha	Ton/Ha	Ha	Ton/Ha
Rubber	227,731	0.67	150,340	0.90
Coconut	20,846	0.03	700	28,432
Clove	2,855	0.44	1,244	3,104
Coffee	16,330	0.44	7,132	21,629
Number				8,627

ROAD NETWORK

Kabupaten	National Road (km)	Provincial Road (km)	Kabupaten Road (km)	Others (km)	Total (km)
Singir Talud	-	191.0			
Korad Manado	-	-			
Minahasa	231.9	118.3			
Bol. Mongondow	225.9	97.8	591.0		914.7
Korad Gorontalo	-	-			
Gorontalo	380.0	25.3	937.0		1,352.3
Kota Am. Bontung	-	-			
Total (Province)	819.8	439.4	3,188.8	-	4,440.2

METEOROLOGY

At Sam Ratulangi Manado 1978

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temp. (°C)	25.3	25.4	25.5	25.6	26.4	25.3	25.5	26.5	25.7	26.3	25.9	25.5
Rainfall (mm)	368	262	435	167	332	271	230	257	303	103	495	530
Humidity (%)												

KANUPATEK GORONTALO

Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)
Limboto		42,524	
Telaga		44,692	
Tapa		22,303	
Kabila		28,967	
Suwawa		15,437	
Bonepantai		23,498	
Betudaa		61,261	
Tibawa		44,066	
Kwandang		31,295	
Atteggola		11,017	
Samalata		16,281	
Pagayanaan		45,956	
Tilasate		28,583	
Paguat		18,587	
Marisa		18,866	
Pogayato		20,065	
Total	11,030	473,950	43.0

DATA KAD. BOY. MONGONDOW

POPULATION

1974	1978	Annual Growth Rate (%)
233,066	273,606	4.09

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (/km ²)
7,600	15	202	36.0

LAND USE

	1978				Total
	Wet field for Rice	Dry Land	Village	Forest	
Ha	10,665	62,150	2,640	600,490	84,055
%	1.4	8.2	0.3	79.0	11.1
					100

FOOD CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Rice				20,394	3.70	75,411
Dry Rice				6,458	1.50	9,670
Cassava + Sweet Potato				2,227	9.11	20,277
Maize + Peanut + Soya bean				27,921	1.22	34,077

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee				1,271	0.58	735
Nutmeg				1,414	-	-
Clove				2,622	0.05	120
Rubber				-	-	-
Coconut				36,132	0.83	30,017

DATA KAD. GORONTALO

POPULATION

1974	1978	Annual Growth Rate (%)
425,703	473,930	2.72

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (km ²)
11,030	16	219	43.0

LAND USE

	1978				Total
	Wet field for Rice	Dry Land	Village	Forest	
Ha	12,114	58,260	5,260	721,205	306,077
%	1.1	5.3	0.5	65.4	27.7
					100

FOOD CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy				29,374	4.13	96,371
Dry Paddy				3,543	1.48	5,231
Cassava + Sweet Potato				3,988	7.51	29,948
Maize + Peanut + Soya bean				38,710	1.21	46,937

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee				800	0.51	410
Nutmeg				1,334	-	-
Clove				1,498	0.02	33
Rubber				-	-	-
Coconut				32,040	0.90	28,713

KANTAUTAN CORONTAKO

VEHICLE REGISTRATION

Vehicle Type	1979	Growth Rate (% annual)
Passenger Car	232	
Truck	40	
Bus	65	
Motor Cycle	974	
Non Motor Vehicle	17,682	
Total	18,993	

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School	Junior High School	Hospital	Health Center	Public Policlinic
		20	2	17	55
Total	466	20	2	17	55

KANTAUTAN NOL. MONKONDOW

VEHICLE REGISTRATION

Vehicle Type	19	Growth Rate (% annual)
Passenger Car		
Truck		
Bus		
Motor Cycle		
Non Motor Vehicle		
Total		

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School (Class Room)	Junior High School	Hospital	Health Center	Public Policlinic
Kacamobagu	33 (213)				
Pasal	26 (180)				
Modayag	19 (126)				
Leluyan	25 (158)				
Dumoga	36 (310)				
No. 1, Didi	25 (133)				
Pimelusan	16 (111)				
Kotabunan	16 (115)				
Moger	16 (103)				
Belalang	19 (115)				
Lolak	15 (93)				
Sang Tombelang	11 (63)				
Belang Karang	19 (136)				
Kidantauna	12 (72)				
Kadipang	17 (104)				
Total	305 (2078)		1	18	51

DATA PROVINCE NITAMUSI SUKATAN

POPULATION

1971	1978	Annual Growth Rate (%)
5,189,227	5,722,301	1.41

AREA

Area (Km ²)	No. of Kabupaten	No. of Kecamatan	No. of Desa
85,080.72	23	169	1,170

LAND USE

	Wet field for Rice	Dry Land	Village	Forest	Others	Total
Ha	597,752	1,167,000	-	3,220,000	3,324,120	8,308,872
%	7.1	13.7	-	37.8	41.4	100

FOOD CROPS PRODUCTION

	1972		1978	
	Ha	Ton	Ha	Ton
Wet Paddy *	359,171	1,205,860	597,752	2,314,060
Dry Paddy *	20,493	27,389	32,107	48,191
Cassava	42,576	315,744	59,607	282,619
Maize	107,304	117,842	293,626	228,793
Sweet Potato	12,212	64,742	11,471	59,039
Soya bean				
Peanut	48,756	26,431	104,294	65,306
Green small peas				

* Paddy X 95% = 64% = Rice

FOOD BALANCE

	Consumption (Ton)	Ka per capite	Production (Ton)
Rice	686,700	120	1,430,250
Cassava	333,940	62.2	341,678
Sweet Potato	84,120	16.7	228,793
Corn			

REGIONAL INCOME AT 1949 CONSTANT PRICES

	Agriculture	Minings & Quarantine	Transport & Communication	Others	Total billion Rp
1969	59,354	14,942	1,714	18,298	88,308
1977	72,290	39,139	7,245	74,808	193,482

CASH CROPS PRODUCTION

	1974		1978	
	Ha	Ton/Ha	Ha	Ton
Rubber	-	-	74	-
Coconut	-	61,791	106,000	72,258
Clove	-	10.5	11,750	75
Coffee	-	6,094	26,200	6,000
Pepper	-	107.6	850	200.0
Sugar Cane	-	2,637	750	4,500

ROAD NETWORK

1978

Kabupaten	Nasional Road (Km)	Provincial Road (Km)	Kabupaten Road (Km)	Others (km)	Total (km)
Total (Province)	583.2	1,848.8			

METEOROLOGY

at Ujung Pandang 1978

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temp. (°C)	25.9	25.7	26.2	26.4	27.3	25.1	25.3	25.9	26.0	27.2	26.4	25.7
Rainfall (mm)	561	494	230	190	202	198	139	35	58	36	162	700
Humidity (%)	85	88	84	81	85	83	83	78	79	73	81	89

KABUPATEN TAKALAR

KABUPATEN BONE

Kecamatan	Area (km ²)	Population	Population Density (/km ²)	Kecamatan	Area (km ²)	Population	Population Density (/km ²)
Polembangkang Utara	255.5	31,890	12.5	T. Blattang	33	52,024	1,576.5
Polembangkang Selatan	73.8	33,251	45.0	Palakka	122	34,037	278.1
Galesong Utara	22.7	25,245	111.2	Awang Fore	137	34,456	249.4
Galesong Selatan	35.1	32,204	89.9	Sibulue	151	22,358	148
Mappakasunggu	25.8	19,478	75.5	Barekko	152	23,808	156.7
Mangarabombang	24.0	21,433	29.0	Ponre	268	12,780	44.4
				Cies	159	17,493	110.1
				Mare	278	18,959	68.3
				Tonra	171	14,942	87.4
				Salocello	169	17,953	121.3
				Fajjara	146	24,417	167.3
				Kabo	256	24,354	95.2
				Uluweng	217	42,877	197.6
				Lappartaja	302	45,677	154.6
				Liboreng	368	20,221	55.1
				Lauca	236	36,524	49.7
				Tello Siatlinge	116	44,911	307.6
				Dua Bocoe	159	38,101	239.7
				Ajangalle	177	45,675	263.7
				Cenrana	49	24,724	504.7
				Bontecani	362	12,725	35.2
Total	455.9	163,493	335.8	Total	4,555	610,221	134.0

KAMPATEN SIDRAP

KAMPATEN PINRANG

Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)	Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)
Maritenggae	121.0	36,638	302.8	Watasng Sevitto	237.0	69,217	292.1
Panca Hijang	59.6	33,695	56.6	Mattirobulu	161.0	21,184	135.6
Baranti	48.2	25,281	52.5	Soppa	123.0	22,576	183.6
Wattang Pulu	105.2	15,676	149.1	Mattiro Sopa	176.0	35,984	204.4
Dua Pitce	1,825.0	50,912	27.9	Watanpanas	330.0	28,414	86.1
Telle Lisape	42.8	16,285	38.5	Duaspanas	571.0	50,451	88.4
Panca Lantang	138.0	19,426	140.8	Leabang	910.0	27,640	30.4
Total	2,339.7	197,913	84.6	Total	2,508.0	255,456	101.9

KAMPATEN POMAS

Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)
Polewali	378.0	66,364	175.6
Woccolyo	858.0	74,231	86.5
Campalagian	600.0	57,203	95.4
Titanbung	643.0	71,010	110.5
Masesa	1,754.0	29,241	16.7
Masyi	2,332.0	28,589	12.5
Samaroreng	1,570.0	13,066	8.3
Pana	1,850.0	16,335	8.9
Total	9,985	356,442	35.4

DATA KAD. TANJANG

POPULATION

1971	1978	Annual Growth Rate (%)
152,353	163,499	1.00

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (/km ²)
484.9	6	25	335.8

LAND USE

	Wet field for Rice	Dry Land	Village	Forest	Others	Total
Ha	17,048			15,022		48,690
%	35.0			32.1		100

FOOD CROPS PRODUCTION

	1976			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	16,113	2.75	44,465	17,048	3.43	58,634
Dry Paddy	736	2.13	1,583	300	2.03	610
Cassava + Sweet Potato	737	7.25	5,348	406	5.79	2,351
Maize + Peanut + Soya bean	3,059	0.79	2,439	5,860	0.43	2,516

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee						
Pepper						
Clove						
Rubber						
Coconut				1,280	0.18	236
Sugar Cane				100	5.70	570

DATA KAD. BONE

POPULATION

1971	1978	Annual Growth Rate (%)
596,800	610,221	0.32

AREA

Area (km ²)	No. of Kecamatan	No. of Desa	Population Density (/km ²)
4,555	21	205	134.0

LAND USE

	Wet field for Rice	Dry Land	Village	Forest	Others	Total
Ha	78,551		-	162,955		455,500
%	17.2			35.8		100

FOOD CROPS PRODUCTION

	1976			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	60,516	2.52	152,824	78,551	3.10	236,637
Dry Paddy	4,536	1.39	6,345	6,144	1.45	8,970
Cassava + Sweet Potato	711	5.10	3,627	4,357	6.35	23,039
Maize + Peanut + Soya bean	23,403	0.50	12,726	79,200	0.60	47,590

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee				135	0.16	22
Pepper				36	0.14	5
Clove				430	0.07	3
Rubber				-	-	-
Coconut				9,300	0.47	4,384
Sugar Cane				155	6.48	1,005

DATA KAN. PINRANG

POPULATION

1971	1978	Annual Growth Rate (%)
258,214	255,656	---

AREA

Area (Km ²)	No. of Kecamatan	No. of desa	Population Density (/Km ²)
2,508.51	7	44	101.8

LAND USE

	1978					Total
	Wet field for Rice	Dry Land	Village	Forest	Others	
Ha	61,145			91,700		250,851
%	24.4			36.6		100

FOOD CROPS PRODUCTION

	1976			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	50,093	4.22	211,297	61,145	5.67	346,484
Dry Paddy	63	1.07	89	111	1.12	124
Cassava + Sweet Potato	620	10.32	6,463	963	8.66	8,328
Maize + Peanut + Soya bean	2,443	0.85	2,069	1,753	0.84	1,474

CASH CROPS PRODUCTION

	1976			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee				355	0.18	63
Pepper				2.5	0.04	0.1
Clove				25	0.00	0.1
Rubber				-	-	-
Coconut				6,952	0.63	5,800
Sugar Cane				-	-	-

DATA KAN. SIDRAP

POPULATION

1971	1978	Annual Growth Rate (%)
181,588	197,913	4.24

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (/Km ²)
2,339.74	7	32	84.6

LAND USE

	1978					Total
	Wet field for Rice	Dry Land	Village	Forest	Others	
Ha	61,825					233,974
%	26.4					100

FOOD CROPS PRODUCTION

	1976			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	55,648	4.88	271,491	61,825	4.61	285,200
Dry Paddy	14	0.71	10	195	0.75	146
Cassava + Sweet Potato	541	7.09	3,838	864	6.48	5,940
Maize + Peanut + Soya bean	404	0.69	278	3,840	0.70	2,684

CASH CROPS PRODUCTION

	1976			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee				25	0.12	3
Pepper				3	0.23	0.7
Clove				48	0.00	0.1
Rubber				-	-	-
Coconut				3,870	0.62	2,401
Sugar Cane				25	3.80	95

DATA KAP. DOLMAS

POPULATION

1971	1978	Annual Growth Rate (%)
313,339	336,442	1.85

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (/Km ²)
9,985.0	8	83	35.7

KARUPATAN RONE

VEHICLE REGISTRATION

Vehicle Type	19	19	Growth Rate (% annual)
Passenger Car			
Truck			
Bus			
Motor Cycle			
Non Motor Vehicle			
Total			

LAND USE

	Wet Field For Rice	Dry Land	Village	Yoranc	Others	Total
Ha	27,362					998,500
%	2.7					100

FOOD CROPS PRODUCTION

	1976		1978	
	Ha	Ton/Ha	Ha	Ton/Ha
Wet Paddy	18,683	3.98	74,383	27,362
Dry Paddy	303	1.12	339	2,791
Cereals + Sweet Potato	3,477	7.45	25,917	2,735
Wet + Peanut + Soya bean	2,032	0.63	1,290	3,693
				0.86
				3,172

CASH CROPS PRODUCTION

	1972		1977	
	Ha	Ton/Ha	Ha	Ton
Coffee			5,400	0.27
Pepper			3	0.20
Clova			300	0.00
Rubber			-	-
Coconut			11,900	0.89
Sugar Cane			5	5.00

EDUCATION & MEDICAL CARE

	1978			
Kecamatan	Elementary School (Class Room)	Junior High School (Class Room)	Hospital	Health Center
Total	411 (2,391)	19 (183)	2	21
				39

KAWUPATEN PINRANG

VEHICLE REGISTRATION

Vehicle Type	1977	Growth Rate (% annual)
Passenger Car	35	
Truck	64	
Bus	56	
Motor Cycle	887	
Non Motor Vehicle	5,711	
Total	6,753	

KAWUPATEN PINRANG

VEHICLE REGISTRATION

Vehicle Type	1976	Growth Rate (% annual)
Passenger Car	-	-
Truck	59	-
Bus	-	-
Motor Cycle	174	-
Non Motor Vehicle	18,554	-
Total	-	-

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School	Junior High School	Hospital	Health Center	Public Polyclinic
Total	220	25	2	8	28

EDUCATION & MEDICAL CARE

Kecamatan	Elementary School	Junior High School	Hospital	Health Center	Public Polyclinic
Mecang Sapiwo	18	-	1	1	5
Matiso Bulu	24	-	-	1	2
Suppa	15	-	-	1	1
Matsiro Sompè	22	-	-	1	2
Pesampuan	20	-	-	1	5
Wumpangua	32	-	-	1	2
Lambak	27	-	-	1	1
Total	156	-	-	7	16

KANDHAYAN ENKESANG

POPULATION 1978

	KECAMATAN	AREA (km ²)	POPULATION	POPULATION DENSITY / km ²
1.	Enrekang	308	31,223	80.5
2.	Matene	582	19,850	34.1
3.	Anggeraja	243	22,920	94.4
4.	Alle	388	32,804	84.5
5.	Banta	340	22,534	66.3
	TOTAL	1,941	129,347	66.6

POPULATION

	1971	1978	ANNUAL GROWTH RATE (%)
	121,140	129,347	0.8

AREA

AREA (km ²)	NO OF KECAMATAN	NO OF DESA	POPULATION DENSITY (km ²)
1,941	5	20	66.6

LAND USE

	WET FIELD FOR RICE	DRY LAND	VILLAGE	FOREST	OTHERS	TOTAL
KA	2,601	26,233	-	164,806	-	194,100
%	1.30	13.66	-	84.06	-	100

FOOD CROPS PRODUCTION

	1976		1978	
	KA	TON/KA	TON	TON/KA
Wet Paddy	6,137	2.47	15,184	6.623
Dry Paddy	223	0.72	161	0.771
Cassava	896	8.79	7,875	11.27
Mashed	3,446	0.68	2,340	0.65
Sweet Potatoes	60	4.30	258	4.43
Soya Bean, Peanut, Green Small Pea	671	0.66	443	1.241

CASH CROPS PRODUCTION

	1976		1978	
	KA	TON/KA	TON	TON/KA
Rubber	-	-	-	-
Coconut	-	-	92	0.30
Clove	-	-	25	0.07
Coffee	-	-	236	0.30
Pepper	-	-	3	0.30
Sugar Cane	-	-	-	-
Others	-	-	54	0.24

FOOD BALANCE

	CONSUMPTION (TON)	XG. PENDAPATAN	PRODUCTION (TON)
Rice	15,522	150	15,345
Cassava + Sweet Potatoes	8,045	62.2	16,552
Corn	1,901	14.7	8,585

DATA KAWASAN PERSEKUTU

POPULATION 1976

KECAMATAN	AREA (Km ²)	POPULATION	POPULATION DENSITY / Km ²
1. BIRAHU		51,354	
2. TAMMALASA		51,082	
3. BANGKALA		44,776	
4. BAWANG		40,388	
5. MELAKA		37,556	
TOTAL	790	225,026	286

POPULATION

1971	1977	ANNUAL GROWTH RATE (%)
200,605	225,026	1.7

AREA

AREA (Km ²)	NO OF KECAMATAN	NO OF DESA	POPULATION DENSITY (Km ²)
790	5	20	286

	1976			1970		
	HA	TON/HA	TON	HA	TON/HA	TON
Wet Paddy	20,056	2.79	50,386	26,876	2.93	70,012
Dry Paddy	150	1.17	185	436	1.41	615
Carehaya	3,219	7.62	24,540	3,961	7.57	29,985
Kelapa	23,926	0.64	15,298	27,791	0.62	22,500
Peanut + Sweet Potatoe	9,284	0.64	4,080	8,309	0.69	5,766

	1976			1970		
	HA	TON/HA	TON	HA	TON/HA	TON
Rubber						
Cocoa				1,550	1.1	1,705
Glove						
Coffee				65	0.2	14
Copok Tree				593	0.2	133
Tobacco				150	0.3	45

VEHICLE REGISTRATION

VEHICLE TYPE	1971	1978	GROWTH RATE (% ANNUAL)
Passenger Car		16	
Truck		27	
Bus		12	
Motor Cycle		502	
Non Motor Vehicle		3,532	
		4,089	

KECAMATAN	ELEMENTARY SCHOOL	JUNIOR HIGH SCHOOL	HOSPITAL	HEALTH CENTER	PUBLIC HEALTH CLINIC
BIRAHU	310	62		1	
TAMMALASA	282	15		1	
BANGKALA	211	10		1	
BAWANG	265	13		1	
MELAKA	226	8		1	
	1,303	108		5	

DATA PROVINCE SUKAWATI TINGGARA

POPULATION

	1971	1978	Annual Growth Rate (%)
	714,120	844,498	2.43

AREA

Area (Km ²)	No. of Kabupaten	No. of Kecamatan	No. of Desa
36,140	4	43	603

LAND USE

	Wet field for Rice	Dry Land	Village	Forest	Others	Total
Ha	14,471	162,720	-	2,166,000	1,485,280	3,814,000
%	0.4	4.3	-	56.8	38.5	100

FOOD CROPS PRODUCTION

	1973			1978		
	Ha	Ton/ha	Ton	Ha	Ton/ha	Ton
Wet Paddy	15,238	2.55	36,872	14,471	2.12	30,647
Dry Paddy	17,206	1.38	27,261	24,739	1.20	29,650
Cassava	19,818	11.50	227,607	24,591	5.92	143,521
Maize	52,000	1.46	75,920	54,540	0.84	43,724
Sweet Potato	4,478	7.6	34,033	6,378	12.2	77,788
Soya bean, Peanut & Green small pea	1,564	0.74	1,156	2,489	0.55	1,372

* Paddy X 93% X 64% = Rice

** Area & Production on 1974

FOOD BALANCE

	Consumption (Ton)	Kg per capita	Production (Ton)
Rice	101,340	120	36,640
Cassava**	52,330	62.2	233,509
Sweet Potato	12,410	14.7	43,724

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/ha	Ton	Ha	Ton/ha	Ton
Rubber	-	-	-	-	-	-
Coconut	-	-	-	33,624	0.48	16,212
Clove	-	-	-	1,231	0.00	6
Coffee	-	-	-	4,238	0.17	733
Pepper	-	-	-	233	0.18	45
Sugar Cane	-	-	-	290	0.27	77

REGIONAL INCOME AT 1969 CONSTANT PRICES

	Agriculture	Mining & Quarrying	Transport & Communication	Others	Total Million Rp
1969	6,413.4	1,418.0	108.6	1,298.3	9,238.3
1973	6,472.7	4,772.2	162.1	2,301.6	13,708.6

KABUPATEN KENDARI

Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)
1. Tinanggea	1,338.93	20,453	15.0
2. Laloea	2,062.97	18,178	8.8
3. Mavonli	404.80	15,416	38.1
4. Moraro	1,828.83	17,258	9.4
5. Rasoneto	1,011.97	22,850	22.6
6. Lasbua	1,408.83	16,863	12.0
7. Wawotebi	1,276.54	22,900	17.9
8. Saspara	1,091.66	14,669	13.4
9. Madoonga	62.34	18,269	435.4
10. Poasta	87.32	11,329	130.2
11. Kendari	31.42	33,858	1,092.5
12. Soropta	37.37	6,472	174.9
13. Lasolo	2,314.58	12,978	5.6
14. Ura-Aha	1,412.13	16,679	11.8
15. Asera	2,076.86	7,517	3.8
Total	16,450.0	255,658	15.5

KABUPATEN BUTON

Kecamatan	Area (Km ²)	Population	Population Density (/Km ²)
Bicoogko	156	10,328	66.6
Tonia	115	14,110	122.7
Kalebupa	104	15,174	145.9
Yangi-Yangi	458	31,187	68.6
Lasalibu	597	10,033	16.8
Pasar Wajo	473	23,470	49.6
Saspoleva	206	19,671	95.5
Katauga	182	17,418	122.7
Wolio	221	49,287	223.0
Esportori	113	6,601	58.4
G.U	339	28,110	82.9
Kawasangka	548	19,781	35.1
Kaba Epa	939	21,717	23.1
Poleang	1,062	25,023	23.6
Bumbia	1,000	13,050	13.0
Total	6,453	355,028	47.2

ROAD NETWORK

Kabupaten	National Road (Km)	Provincial Road (Km)	Kabupaten Road (Km)	Others (Km)	Total (Km)
1. BUTON	-	-	550	-	-
2. MUNA	-	-	388	-	-
3. KENDARI	-	-	550	-	-
4. KOLAKA	-	-	301	-	-
Total (Province)	197	239	1,829	-	2,265

METEOROLOGY

Month	1978											
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temp. (°C)	27.0	28.1	28.1	26.2	26.8	25.9	25.5	25.5	25.9	26.4	27.1	28.9
Rainfall (mm)	184	279	459	330	149	148	142	160	352	121	127	108
Humidity (%)	81	87	85	85	85	89	88	87	85	85	83	84

DATA KAS. KENDARI

POPULATION

1971	1978	Annual Growth Rate (%)
169,948	255,866	4.35

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (/Km ²)
16,440	15	242	15.5

LAND USE

	Wet field for rice	Dry Land	Village	Forest	Others	Total
Ha	6,709	-	-	-	-	1,648,000
%	0.4	-	-	-	-	100

FOOD CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy				6,709	1.94	13,018
Dry Paddy				2,169	1.21	16,687
Cassava + Sweet Potato				1,209	6.91	8,347
Melina + Peanut + Noya bean				5,504	0.62	3,290

CASH CROPS PRODUCTION

	1972			1978		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee				1,742	0.17	302
Pepper				178	0.15	26
Clove				469	0.01	4
Rubber				-	-	-
Coconut				13,720	0.41	5,576
Sugar Cane				214	0.24	52

DATA KAS. BONTON

POPULATION

1971	1978	Annual Growth Rate (%)
300,434	365,028	0.22

AREA

Area (Km ²)	No. of Kecamatan	No. of Desa	Population Density (/Km ²)
6,463	15	169	47.2

LAND USE

	Wet field for rice	Dry Land	Village	Forest	Others	Total
Ha	3,067	74,033	-	200,000	369,200	646,300
%	0.5	11.5	-	31.0	57.0	100

FOOD CROPS PRODUCTION

	1978			1979		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Wet Paddy	2,112	2.81	5,934	3,067	2.04	18,298
Dry Paddy	2,975	1.29	3,831	5,901	-	-
Cassava + Sweet Potato	17,085	5.06	86,446	21,386	6.79	145,287
Melina + Peanut + Noya bean	26,890	0.73	19,724	30,039	0.73	21,895

CASH CROPS PRODUCTION

	1978			1979		
	Ha	Ton/Ha	Ton	Ha	Ton/Ha	Ton
Coffee	612	0.27	164	710	0.23	166
Pepper	16	-	-	-	-	-
Clove	84	-	-	-	-	-
Rubber	12	-	-	-	-	-
Coconut	9,013	0.67	6,048	9,127	0.65	5,955
Sugar Cane	2	-	-	-	-	-

KANUPATIN TUDON

VEHICLE REGISTRATION

Vehicle Type	1978	1979	Growth Rate (% annual)
Passenger Car	-	-	-
Truck	127	-	-
Bus	9	-	-
Motor Cycle	1,276	-	-
Non Motor Vehicle	1,000	-	-
Total	2,412	-	-

EDUCATION & MEDICAL CARE

1979

Kodamatan	Elementary School (Class Room)	Junior High School (Class Room)	Hospital	Health Center	Public Polyclinic
Total	301 (618)	23 (97)	2	15	11

KANUPATIN KUNDALI

VEHICLE REGISTRATION

Vehicle Type	1978	1979	Growth Rate (% annual)
Passenger Car	398	-	-
Truck	43	-	-
Bus	4,614	-	-
Motor Cycle	1,624	-	-
Non Motor Vehicle	6,679	-	-
Total	-	-	-

EDUCATION & MEDICAL CARE

Kodamatan	Elementary School (Class Room)	Junior High School (Class Room)	Hospital	Health Center	Public Polyclinic
Total	287 (1265)	18 (126)	15	14	11

**APPENDIX B-3 FORCAST OF AGRICULTURAL PRODUCTION
OF
7 KABUPATEN**

1. Without Project

(1) Population	401,980/'81	2.0 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	370 ha	0 %/annual
	b. dry paddy	220 ha	2 %/annual
	c. cassava + sweet potato	6,600 ha	4 %/annual
	d. maize + soya bean + ...	300 ha	4 %/annual
o cash crops	a. clove	3,500 ha	6.0 %/annual
	b. rubber	58,500 ha	-2.0 %/annual
	c. coconut	40,000 ha	2.0 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	3.70 t/ha	1.8 %/annual
	b. dry paddy	0.70 t/ha	0 %/annual
	c. cassava +	6.10 t/ha	0 %/annual
	d. maize +	0.95 t/ha	3.0 %/annual
o cash crops	a. clove	0.10 t/ha	0 %/annual
	b. rubber	0.20 t/ha	0 %/annual
	c. coconut	0.40 t/ha	0 %/annual

2. With Project

(1) Population	401,980/'81	2.1 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	370 ha	0 %/annual
	b. dry paddy	220 ha	2.1 %/annual
	c. cassava + ...) 3 years	6,600 ha	4.2 %/annual
	d. maize +) 10% increase	300 ha	4.2 %/annual
cash crops	a. clove	3,500 ha	6.1 %/annual
	b. rubber) 3 years	58,500 ha	-2.1 %/annual
	c. coconut) 10% increase	40,000 ha	2.0 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	3.70 t/ha	1.8 %/annual
	b. dry paddy	0.70 t/ha	0 %/annual
	c. cassava + ...	6.10 t/ha	0 %/annual
	d. maize + ...	0.95 t/ha	3.0 %/annual
o cash crops	a. clove	0.10 t/ha	0 %/annual
	b. rubber	0.20 t/ha	1.0 %/annual
	c. coconut	0.40 t/ha	0 %/annual

3. Road Condition

Area;	flat
Road surface type;	earth 92.7 % gravel (stone) 0 %
Road length;	total 473 Km supported 411 Km.
Surface condition;	good 41.3 %, fair 6.9 %, poor 30.4%, bad 21.4 %

4. Consumption

(1) rice	120	Kg/capita annual
(2) cassava + ...	62,2	Kg/capita annual
(3) maize +	14,7	Kg/capita annual
(4) others	4,5	Kg/capita annual

5. Road Network

(1) National road length	0	Km
(2) Provincial road length	0	Km
(3) Kabupaten road length	473	Km (411)
(4) T o t a l	473	Km

KAB. KEMULIAN RAYA (Without Project)

Year	Population	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION				FOOD CONSUMPTION					Production to be transported.
		Wet paddy	Dry paddy	Cassava + ..	Maize + ..	Coconut	Clove	Rubber	Rice	Cassava + ..	Maize + ..	Others			
'81	401,980	370 HA 3.70 t/ha 1,370 ton	.220 0.70 150	6,600 6.10 40,260	300 0.95 290	40,000 0.40 16,000	3,300 0.10 11,700	58,500 0.20 11,700	48,240	25,000	5,910	1,810	98,060		
'82	410,020	370 3.77 1,390	.220 0.70 150	6,860 6.10 41,850	310 0.98 300	40,800 0.40 16,320	3,710 0.10 11,470	57,330 0.20 11,470	49,200	25,500	6,050	1,850	100,350		
'83	418,220	370 3.83 1,420	.230 0.70 160	7,140 6.10 43,550	320 1.01 320	41,620 0.40 16,650	3,930 0.10 11,240	56,180 0.20 11,240	50,190	26,010	6,150	1,880	102,760		
'84	426,580	370 3.90 1,440	.230 0.70 160	7,420 6.10 45,260	340 1.04 350	42,430 0.40 16,980	4,170 0.10 11,010	55,060 0.20 11,010	51,190	26,530	6,270	1,920	105,200		
'85	435,120	370 3.97 1,470	.240 0.70 170	7,720 6.10 47,090	350 1.07 370	43,300 0.40 17,320	4,420 0.10 10,790	59,960 0.20 10,790	52,210	27,060	6,400	1,960	107,780		
'86	443,020	370 4.05 1,500	.240 0.70 170	8,030 6.10 48,980	360 1.10 400	44,160 0.40 17,660	4,680 0.10 10,580	57,860 0.20 10,580	53,260	27,610	6,520	2,000	110,460		
'87	452,690	370 4.12 1,520	.250 0.70 180	8,350 6.10 50,940	380 1.13 430	45,050 0.40 18,020	4,960 0.10 10,360	57,820 0.20 10,360	54,320	28,160	6,650	2,040	113,210		
'88	461,750	370 4.19 1,550	.250 0.70 180	8,690 6.10 53,010	390 1.17 460	45,250 0.40 18,380	5,260 0.10 10,160	50,790 0.20 10,160	55,410	28,720	6,790	2,080	116,130		
'89	470,980	370 4.27 1,580	.260 0.70 180	9,030 6.10 55,080	410 1.20 490	46,870 0.40 18,750	5,580 0.10 9,950	49,770 0.20 9,950	56,520	29,290	6,920	2,120	119,050		
'90	480,400	370 4.34 1,610	.260 0.70 180	9,390 6.10 57,280	430 1.24 530	47,800 0.40 19,120	5,910 0.10 9,750	48,770 0.20 9,750	57,650	29,880	7,060	2,160	122,110		
'91	490,010	370 4.42 1,640	.270 0.70 190	9,770 6.10 59,600	440 1.28 560	48,760 0.40 19,500	6,270 0.10 9,560	47,800 0.20 9,560	58,800	30,480	7,200	2,210	125,350		
'92	499,810	370 4.50 1,670	.270 0.70 190	10,160 6.10 61,980	450 1.32 590	49,730 0.40 19,890	6,640 0.10 9,390	46,840 0.20 9,390	59,980	31,090	7,430	2,250	128,770		
'93	509,810	370 4.58 1,690	.280 0.70 200	10,570 6.10 64,480	470 1.35 630	50,730 0.40 20,290	7,040 0.10 9,160	45,910 0.20 9,160	61,180	31,710	7,490	2,290	132,150		

KAR. KOPULAUAN RIAU (With Project)

Year	Population	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION				FOOD CONSUMPTION				Production to be transported.
		Wet paddy	Dry paddy	Cassava *..	Maize *..	Coconut	Clove	Rubber	Rice	Cassava *..	Maize *..	Others		
'81	401,980	370 ha 3.70 t/ha 1,370 ton	220 0.70 150	6,600 6.10 40,260	300 0.95 290	40,000 0.40 16,000	3,500 0.10 350	58,500 0.20 11,700	48,240	25,000	5,910	1,810	98,050	
'82	410,420	370 3.77 1,390	220 0.70 150	7,100 6.10 43,310	320 0.98 310	42,130 0.40 16,850	3,710 0.10 370	59,220 0.20 11,840	49,230	25,530	6,030	1,850	102,720	
'83	419,040	370 3.83 1,420	230 0.70 160	7,610 6.10 46,420	350 1.01 350	44,290 0.40 17,720	3,930 0.10 390	59,970 0.20 11,990	50,280	26,060	6,160	1,890	107,480	
'84	427,840	370 3.90 1,440	230 0.70 160	8,130 6.10 49,590	370 1.04 380	46,450 0.40 18,580	170 0.10 420	60,740 0.21 12,760	51,340	26,610	6,290	1,930	112,950	
'85	436,820	370 3.97 1,470	240 0.70 170	8,470 6.10 51,670	390 1.07 420	47,380 0.40 18,950	4,420 0.10 440	59,470 0.21 12,690	52,420	27,170	6,420	1,970	115,770	
'86	446,000	370 4.05 1,500	240 0.70 170	8,830 6.10 53,860	400 1.10 440	48,320 0.40 19,330	4,680 0.10 470	58,220 0.21 12,230	53,520	27,740	6,560	2,010	118,780	
'87	455,260	370 4.12 1,520	250 0.70 180	9,200 6.10 56,120	420 1.13 470	49,290 0.40 19,720	4,960 0.10 500	56,990 0.21 11,970	54,640	28,320	6,690	2,050	121,870	
'88	464,930	370 4.19 1,550	250 0.70 180	9,580 6.10 58,440	440 1.17 510	50,280 0.40 20,110	5,260 0.10 530	55,800 0.21 11,720	55,790	28,920	6,830	2,090	125,030	
'89	474,690	370 4.27 1,580	260 0.70 180	9,990 6.10 60,940	450 1.20 540	51,280 0.40 20,510	5,480 0.10 550	54,630 0.22 12,020	56,960	29,530	6,980	2,140	128,940	
'90	484,660	370 4.34 1,610	260 0.70 180	10,410 6.10 63,500	470 1.24 580	52,310 0.40 20,920	5,910 0.10 590	53,480 0.22 11,770	58,160	30,150	7,120	2,180	132,420	
'91	494,840	370 4.42 1,640	270 0.70 190	10,840 6.10 66,120	490 1.27 620	53,350 0.40 21,340	6,270 0.10 630	52,360 0.22 11,520	59,380	30,780	7,270	2,230	135,980	
'92	505,230	370 4.50 1,670	270 0.70 190	11,300 6.10 69,930	510 1.32 670	54,420 0.40 21,770	6,640 0.10 610	51,260 0.22 11,280	60,630	31,430	7,430	2,270	139,720	
'93	515,840	370 4.58 1,690	280 0.70 200	11,770 6.10 71,800	540 1.35 730	55,510 0.40 22,200	7,040 0.10 700	50,180 0.23 11,540	61,900	32,090	7,580	2,320	144,070	

1. WITHOUT PROJECT

(1) Population		498,900/1981	2.8 %/annual
(2) Harvested Area			
- food crops	a. wet paddy	21,700 ha	2.8 %/annual
	b. dry paddy	12,600 ha	- 4.0 %/annual
	c. cassava + sweet potato	1,000 ha	2.6 %/annual
	d. maize + soya bean	3,400 ha	6.0 %/annual
- cash crops	a. coffee	38,200 ha	6.0 %/annual
(3) Yield Rate			
- food crops	a. wet paddy	4.50 t/ha	1.6 %/annual
	b. dry paddy	2.25 t/ha	0.9 %/annual
	c. cassava +	5.10 t/ha	0.0 %/annual
	d. maize +	0.90 t/ha	2.5 %/annual
- cash crops	a. coffee	0.55 t/ha	0.0 %/annual

2. WITH PROJECT

(1) Population		489,900/1981	2.9 %/annual
(2) Harvested Area			
	a. wet paddy	21,700 ha	2.8 %/annual
	b. dry paddy	12,600 ha	- 1.8 %/annual
	c. cassava +	1,000 ha	2.7 %/annual
	d. maize +	3,400 ha	6.2 %/annual
(3) Yield Rate			
- food crops	a. wet paddy	4.50 t/ha	1.6 %/annual
	b. dry paddy	2.25 t/ha	0.9 %/annual
	c. cassava +	5.10 t/ha	0.0 %/annual
	d. maize +	0.90 t/ha	2.5 %/annual
- cash crops	a. coffee	0.55 t/ha	0.0 %/annual

3. Road condition

area	; rolling area
road surface type	; earth 16.1% gravel (stone) 68.5%
road length	; total 325 Km, supported 255 Km
surface condition	; good 45.4% fair 4.5% poor 22.1% bad 28%

4. Consumption

(1) rice	120.0 Kg/capita annual	
(2) cassava +	62.2 Kg/capita annual	
(3) maize+	14.7 Kg/capita annual	
(4) others	4.5 Kg/capita annual	(salt, sugar, pepper, cooking oil)

5. Road Network

(1) national road length	125
(2) provincial road length	260
(3) Kabupaten road length	325 " (255)
(4) Total	710

KANDAMATIN LAMAT
(with project)

YEAR	POPULATION	FOOD CROPS PRODUCTION						CASH CROPS PRODUCTION				FOOD CONSUMPTION			PRODUCTION TO BE TRANSPORTED	ROAD LENGTH IMPROVED
		wet paddy	dry paddy	corn	soybean	rice	others	maize*	coffee	rice	corn	soybean	others			
1981	498,900	21,700 ha	12,600	1,000	3,400	38,200	0.90	0.55	59,870	31,030	7,300	2,230	79,610	85 km		
1982	513,370	4,500/ha	28,350	3,100	3,220	41,840	0.92	0.55	61,600	31,030	7,550	2,310	83,360	170		
1983	528,260	4.57	22,310	2,270	3,420	45,990	0.95	0.55	63,300	32,860	7,770	2,380	87,230	255		
1984	543,580	101,960	22,930	2,290	3,510	49,570	0.97	0.55	65,230	33,810	7,990	2,450	91,480	255		
1985	559,360	4.72	111,290	24,230	3,550	52,840	0.99	0.55	67,120	34,790	8,220	2,520	95,420	255		
1986	575,560	4.79	116,060	24,230	3,550	55,910	1.02	0.55	69,070	35,800	8,460	2,590	99,750	255		
1987	592,250	4.87	121,310	24,230	3,550	59,370	1.04	0.55	71,070	36,840	8,710	2,670	104,200	255		
1988	609,430	5.00	126,770	24,230	3,550	63,030	1.07	0.55	73,130	37,910	8,960	2,740	108,430	255		
1989	627,100	5.00	132,300	24,230	3,550	66,960	1.10	0.55	75,250	39,010	9,220	2,820	111,280	255		
1990	643,290	5.00	139,100	24,230	3,550	71,120	1.12	0.55	77,430	40,140	9,490	2,900	114,410	255		
1991	664,000	5.00	147,000	24,230	3,550	75,520	1.15	0.55	79,680	41,300	9,760	2,980	117,530	255		
1992	683,250	5.00	151,150	24,230	3,550	80,210	1.18	0.55	81,990	42,500	10,040	3,070	120,810	255		
1993	703,070	5.00	151,150	24,230	3,550	85,180	1.21	0.55	84,370	43,730	10,340	3,160	124,290	255		

MANUPATTEN SAHAT
(without project)

YEAR	POPULATION	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION				FOOD CONSUMPTION				PRODUCTION TO BE TRANSPORTED
		wet paddy	dry paddy	cassava*	maize**	wet paddy	maize**	coffee	rice	cassava**	maize**	others		
1981	498,000	21,700 ha	12,000	1,000	3,400	38,200	0.55	21,010	59,870	31,030	7,330	2,250	79,610	
1982	512,870	4,502/ha	2.25	5.10	0.90	40,490	0.55	22,270	61,540	31,900	7,540	2,310	82,260	
1983	527,230	97,650/ton	28,350	3,100	3,000	42,920	0.55	23,610	63,270	32,790	7,730	2,370	85,010	
1984	541,990	22,310	12,100	1,030	3,600	45,500	0.55	25,030	65,049	33,710	7,970	2,440	88,240	
1985	557,170	4.57	2.27	5.10	0.92	48,230	0.55	26,530	66,860	34,660	8,190	2,510	91,650	
1986	572,770	101,960	27,470	5,250	3,310	51,120	0.55	28,120	68,730	35,630	8,420	2,580	95,080	
1987	588,810	22,930	11,610	1,050	3,820	54,190	0.55	29,800	70,660	36,620	8,640	2,650	98,980	
1988	605,290	4.64	2.29	5.10	0.95	57,440	0.55	31,590	72,630	37,650	8,900	2,720	102,450	
1989	622,240	106,600	26,500	3,360	3,630	60,880	0.55	33,480	74,670	38,700	9,180	2,800	106,660	
1990	639,660	23,570	11,150	1,080	4,050	64,540	0.55	35,500	76,740	39,790	9,400	2,880	107,150	
1991	657,580	4.72	2.31	5.10	0.97	68,410	0.55	37,630	78,910	40,900	9,670	2,960	109,710	
1992	675,980	311,250	25,760	5,510	3,930	72,550	0.55	39,890	81,120	42,050	9,940	3,040	112,370	
1993	694,910	24,230	10,700	1,110	4,290	76,870	0.55	42,280	83,300	43,220	10,220	3,130	115,260	

1. WITHOUT PROJECT

(1) Population	1,663,470/1981	3.5 %/annual
 (2) Harvested Area		
- food crops	a. wet paddy	49,000 ha 2.8 %/annual
	b. dry paddy	30,500 ha 0 %/annual
	c. cassava+sweet potato	13,000 ha 0 %/annual
	d. maize+soya bean	10,100 ha 0 %/annual
- cash crops	a. coffee	71,250 ha 3.5 %/annual
	b. pepper	1,000 ha 0 %/annual
	c. clove	38,700 ha 3.5 %/annual
	d. rubber	4,750 ha 0 %/annual
	e. coconut	58,600 ha 3.5 %/annual
 (3) Yield Rate		
- food crops	a. wet paddy	4.35 t/ha 1 %/annual
	b. dry paddy	2.00 t/ha 0 %/annual
	c. cassava+	13.50 t/ha 0 %/annual
	d. maize +	2.15 t/ha 0 %/annual
- cash crops	a. coffee	0.60 t/ha 0 %/annual
	b. pepper	0.55 t/ha 4 %/annual
	c. clove	0.20 t/ha 0 %/annual
	d. rubber	0.35 t/ha 0 %/annual
	e. coconut	0.45 t/ha 0 %/annual

2. WITH PROJECT

(1) Population	1,663,470/1980	3.7 %/annual
 (2) Harvested Area		
- food crops	a. wet paddy	49,000 ha 2.8 %/annual
	b. dry paddy	30,500 ha 0 %/annual
	c. cassava+	13,000 ha 0 %/annual
	d. maize +	10,100 ha 0 %/annual

- cash crops	a. coffee	71,250 ha	3.7 %/annual
	b. pepper	1,000 ha	0 %/annual
	c. clove	38,700 ha	3.7 %/annual
	d. rubber	4,750 ha	0 %/annual
	e. coconut	58,600 ha	3.7 %/annual

(3) Yield Rate

- food crops	a. wet paddy	4.35 t/ha	1 %/annual
	b. dry paddy	2.00 t/ha	1.0 %/annual
	c. cassava†	13.50 t/ha	1.0 %/annual
	d. maize†	2.15 t/ha	1.0 %/annual
- cash crops	a. coffee	0.60 t/ha	1 %/annual
	b. pepper	0.55 t/ha	4 %/annual
	c. clove	0.20 t/ha	1 %/annual
	d. rubber	0.35 t/ha	1 %/annual
	e. coconut	0.45 t/ha	1 %/annual

3. Road condition

area ; flat
road surface type ; earth 0 % gravel (stone) 67.1 %
road length ; 348 Km supported 225 Km
surface condition ; good 71.2% 1.3 poor 18.4, bad 9.1%

4. Road Network

(1) national road length	38 Km
(2) provincial road length	432 Km
(3) Kabupaten road length	348 Km (225)
(4) Total	818 Km

KAMPATIN LAMPUNG SELATAN
(without project)

YEAR	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION							FOOD CONSUMPTION				PRODUCTION TO BE TRANSPORTED
	wet paddy	dry paddy	cassava	maize	coconut	coffee	pepper	cloves	rubber	rice	cassava	maize	others			
1981	1,663,470	4,358/ha	13,300	2,15	58,600	71,250	1,000	38,700	4,750	110,02	103,470	24,450	7,490	194,260		
1982	1,721,690	4,39	30,500	2,15	60,650	73,740	1,000	40,050	4,750	205,400	107,090	25,310	7,750	196,590		
1983	1,781,950	4,44	30,500	2,15	62,770	76,320	1,000	41,440	4,750	219,830	110,840	26,190	8,070	198,690		
1984	1,844,320	4,48	30,500	2,15	64,970	79,000	1,000	42,910	4,750	221,320	114,720	27,110	8,300	201,210		
1985	1,906,870	4,53	30,500	2,15	67,240	81,760	1,000	44,410	4,750	229,040	118,730	28,060	8,590	203,460		
1986	1,975,680	4,57	30,500	2,15	69,600	84,620	1,000	45,960	4,750	237,040	122,890	29,040	8,890	206,100		
1987	2,044,830	4,62	30,500	2,15	72,030	87,580	1,000	47,570	4,750	245,380	127,190	30,040	9,200	208,530		
1988	2,116,400	4,66	30,500	2,15	74,500	90,450	1,000	49,240	4,750	253,970	131,640	31,110	9,520	211,380		
1989	2,190,470	4,71	30,500	2,15	77,170	93,820	1,000	50,960	4,750	262,860	136,250	32,200	9,860	213,980		
1990	2,267,140	4,76	30,500	2,15	79,870	97,110	1,000	52,740	4,750	272,040	141,020	33,310	10,200	216,630		
1991	2,346,490	4,81	30,500	2,15	82,660	100,510	1,000	54,590	4,750	281,580	145,950	34,490	10,560	219,410		
1992	2,428,620	4,85	30,500	2,15	85,350	104,020	1,000	56,500	4,750	291,430	151,040	35,700	10,930	222,640		
1993	2,513,620	4,90	30,500	2,15	88,550	107,680	1,000	58,480	4,750	301,630	156,350	36,950	11,310	225,590		

KARIPATEN LAMPUNG SELATAN
(with project)

YEAR	POPULATION*	WOOD CORNS PRODUCTION				CASH CORNS PRODUCTION				WOOD CONSTRUCTION				PRODUCTION TO BE TRANSPORTED
		wcc paddy	dry paddy	cassava*	maize*	coconut	coffee	pepper	clove	rubber	rice	cassava*	maize*	
1981	(1,027)	49,000	30,500	13,000	10,100	58,600	71,250	1,000	38,700	4,750				
	1,663,470	4,355/ha	2,00	13,30	2,13	0,45	0,60	0,55	0,20	0,35				
		213,150ccm	61,000	175,500	21,720	26,370	42,250	530	7,740	1,000	199,620	103,470	24,450	7,400
1982	1,725,020	50,370	30,500	13,000	10,100	60,770	73,890	1,000	40,130	4,750				
		4,39	2,02	13,64	2,17	0,43	0,61	0,57	0,20	0,35				
		221,120	61,610	177,320	21,920	27,150	45,070	570	8,330	1,000	202,000	107,300	25,360	7,760
1983	1,788,840	51,780	30,500	13,000	10,100	63,020	76,820	1,000	41,620	4,750				
		4,44	2,04	13,77	2,19	0,46	0,61	0,59	0,20	0,36				
		229,000	62,220	179,010	22,120	28,990	46,740	590	8,320	1,210	214,660	111,270	26,300	8,050
1984	1,853,030	53,230	30,500	13,000	10,100	65,330	79,450	1,000	43,160	4,750				
		4,48	2,06	13,91	2,22	0,46	0,62	0,62	0,21	0,36				
		238,470	62,830	180,830	22,420	30,060	49,260	620	9,060	1,210	222,600	113,380	27,270	8,350
1985	1,923,760	54,720	30,500	13,000	10,100	67,770	82,390	1,000	44,750	4,750				
		4,53	2,08	14,05	2,24	0,47	0,62	0,64	0,21	0,36				
		247,080	63,640	182,050	22,620	31,850	51,950	640	9,400	1,210	230,840	119,070	28,280	8,660
1986	1,994,840	56,260	30,500	13,000	10,100	70,270	85,440	1,000	46,410	4,750				
		4,57	2,10	14,19	2,26	0,47	0,63	0,67	0,21	0,37				
		257,110	64,050	184,470	22,830	33,030	53,830	670	9,750	1,260	239,380	124,080	29,320	8,980
1987	2,068,650	57,830	30,500	13,000	10,100	72,870	88,600	1,000	48,130	4,750				
		4,62	2,12	14,33	2,28	0,48	0,64	0,70	0,21	0,37				
		267,170	64,660	186,290	23,030	34,980	56,760	700	10,110	1,260	248,240	128,670	30,410	9,310
1988	2,145,190	59,450	30,500	13,000	10,100	75,370	91,880	1,000	49,910	4,750				
		4,66	2,14	14,47	2,31	0,48	0,64	0,72	0,21	0,38				
		277,040	65,270	188,110	23,320	36,270	58,800	730	10,480	1,310	257,420	133,430	31,530	9,650
1989	2,224,560	61,110	30,500	13,000	10,100	78,370	95,280	1,000	51,750	4,750				
		4,71	2,17	14,62	2,33	0,49	0,65	0,75	0,22	0,38				
		287,830	66,185	190,060	23,530	38,400	61,220	750	11,300	1,310	266,950	138,370	32,200	10,010
1990	2,306,070	62,830	30,500	13,000	10,100	81,270	98,810	1,000	53,670	4,750				
		4,76	2,19	14,76	2,35	0,49	0,66	0,78	0,22	0,38				
		299,070	66,800	191,860	23,740	39,820	63,210	780	11,810	1,310	276,820	143,400	33,910	10,380
1991	2,392,230	64,380	30,500	13,000	10,100	84,270	102,480	1,000	55,650	4,750				
		4,81	2,21	14,91	2,37	0,50	0,66	0,81	0,22	0,39				
		310,630	67,410	193,830	23,940	42,140	67,020	810	12,240	1,350	287,070	148,800	35,170	10,770
1992	2,480,740	66,390	30,500	13,000	10,100	87,390	106,260	1,000	57,710	4,750				
		4,85	2,23	15,0	2,40	0,50	0,67	0,85	0,22	0,39				
		321,990	68,020	195,000	24,240	45,700	71,100	850	12,700	1,350	297,690	154,300	36,470	11,160
1993	2,572,530	68,230	30,500	13,000	10,100	90,620	110,190	1,000	59,850	4,750				
		4,90	2,25	15,0	2,42	0,51	0,68	0,88	0,23	0,39				
		334,430	68,630	195,000	24,460	46,220	74,930	880	13,770	1,350	308,700	160,010	37,820	11,580

1. Without Project

(1) Population	385,020/'81	1.7 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	24,000 ha	5.5 %/annual
	b. dry paddy	23,100 ha	5.5 %/annual
	c. cassava + sweet potato	10,400 ha	2.9 %/annual
	d. maize + soya bean + ...	27,200 ha	1.7 %/annual
o cash crops	a. coffee	12,500 ha	10 %/annual
	b. coconut	7,700 ha	4.2 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	2.70 t/ha	0 %/annual
	b. dry paddy	0.35 t/ha	0 %/annual
	c. cassava + ...	1.70 t/ha	0 %/annual
	d. maize +	0.70 t/ha	0 %/annual
o cash crops	a. coffee	0.20 t/ha	0 %/annual
	b. coconut	0.40 t/ha	0 %/annual

2. With Project

(1) Population	385,020/'81	1.8 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	24,000 ha	5.5 %/annual
	b. dry paddy	23,100 ha	5.5 %/annual
	c. cassava + ..) 6 years	10,400 ha	3.0 %/annual
	d. maize +) 10 %	27,200 ha	1.8 %/annual
o cash crops	a. coffee) 6 years	12,500 ha	10 %/annual
	b. coconut) 10 %	7,700 ha	4.2 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	2.70 t/ha	0 %/annual
	b. dry paddy	0.35 t/ha	0 %/annual
	c. cassava + ...	1.70 t/ha	0 %/annual
	d. maize +	0.70 t/ha	0 %/annual
o cash crops	a. coffee	0.20 t/ha	0 %/annual
	b. coconut	0.40 t/ha	0 %/annual

3. Road Condition

Area;	rolling
Road surface type;	earth 65.1 % gravel (stone) 33.7 %
Road length;	total 408 Km supported 332 Km.
Surface condition;	good 60.9%, fair 1.5%, poor 14.8%, bad 22.8%.

4. Consumption

(1) rice	120	Kg/capita annual
(2) cassava + ...	62,2	Kg/capita annual
(3) maize +	14,7	Kg/capita annual
(4) others	4,5	Kg/capita annual (salt, sugar, pepper, etc.).

5. Road Network

(1) National road length	310	Km
(2) Provincial road length	25	Km
(3) Kabupaten road length	408	Km (332)
(4) T o t a l	743	Km

KURUPATEN MANCARAI (Without Project)

Year	Popula- tion	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION				FOOD CONSUMPTION				Production to be Transported.
		wet paddy	Dry paddy	Cassava * ..	Maize * ..	Coconut	Coffee	Rice	Cassava * ..	Maize * ..	Others			
'81	385,020	24,000 ha 2.70 t/ha 64,800 ton	23,100 0.35 8,080	10,400 1.70 17,680	27,200 0.70 19,040	7,700 0.40 3,080	12,500 0.20 2,500	46,200	23,950	5,660	1,730	28,850		
'82	391,570	25,320 2.70 68,360	24,370 0.35 8,530	10,700 1.70 18,190	27,660 0.70 19,360	8,020 0.40 3,210	13,750 0.20 2,750	46,990	24,360	5,760	1,760	27,730		
'83	398,220	26,710 2.70 72,120	25,710 0.35 9,000	11,010 1.70 18,720	28,130 0.70 19,690	8,360 0.40 3,340	15,125 0.20 3,020	47,790	24,770	5,850	1,790	30,430		
'84	404,990	28,180 2.70 76,090	27,120 0.35 9,490	11,330 1.70 19,260	28,610 0.70 20,030	8,720 0.40 3,480	16,640 0.20 3,330	48,600	25,190	5,950	1,820	34,000		
'85	411,080	29,730 2.70 80,270	28,620 0.35 10,020	11,660 1.70 19,820	29,100 0.70 20,370	9,080 0.40 3,630	18,300 0.20 3,660	49,430	25,620	6,050	1,850	37,810		
'86	418,880	31,370 2.70 84,700	30,190 0.35 10,570	12,000 1.70 20,400	29,660 0.70 20,760	9,460 0.40 3,780	20,130 0.20 4,030	50,270	26,050	6,160	1,880	41,900		
'87	426,000	33,090 2.70 89,340	31,850 0.35 11,150	12,350 1.70 21,000	30,100 0.70 21,070	9,860 0.40 3,940	22,140 0.20 4,430	51,120	26,500	6,260	1,920	46,190		
'88	433,240	34,910 2.70 94,260	33,600 0.35 11,760	12,700 1.70 21,590	30,610 0.70 21,430	10,270 0.40 4,110	24,360 0.20 4,870	51,990	26,950	6,370	1,950	50,840		
'89	440,610	36,830 2.70 99,440	35,450 0.35 12,410	13,070 1.70 22,220	31,130 0.70 21,790	10,700 0.40 4,280	26,790 0.20 5,360	52,870	27,410	6,480	1,980	55,770		
'90	448,100	38,860 2.70 104,920	37,400 0.35 13,090	13,450 1.70 22,860	31,660 0.70 22,160	11,150 0.40 4,460	29,470 0.20 5,890	53,770	27,870	6,590	2,020	61,040		
'91	455,710	41,000 2.70 110,700	39,460 0.35 13,810	13,840 1.70 23,530	32,190 0.70 22,530	11,620 0.40 4,650	32,420 0.20 6,480	54,690	28,350	6,700	2,050	66,660		
'92	463,460	43,250 2.70 116,780	41,630 0.35 14,570	14,240 1.70 24,210	32,740 0.70 22,920	12,110 0.40 4,840	35,660 0.20 7,130	55,620	28,830	6,810	2,090	72,660		
'93	471,340	45,630 2.70 123,200	43,920 0.35 15,370	14,680 1.70 24,920	33,300 0.70 23,310	12,620 0.40 5,030	38,230 0.20 7,850	56,560	29,320	6,930	2,120	79,060		

KANUPATEN MANGGARAI (with Project)

Year	Population	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION			FOOD CONSUMPTION				Production to be transported.
		Wet paddy	Dry paddy	Cassava * * *	Maize * * *	Coconut	Coffee	Rice	Cassava * * *	Maize * * *	Others		
'81	385,030	24,000 ha 2.70 t/ha 64,800 ton	23,100 0.35 8,080	10,400 1.70 17,680	27,200 0.70 19,040	7,700 0.40 3,080	12,500 0.20 2,500	46,200	23,950	5,660	1,730	28,850	
'82	391,950	25,320 2.70 68,360	24,370 0.35 8,530	10,840 1.70 18,430	28,140 0.70 19,700	8,150 0.40 3,260	13,960 0.20 2,790	47,030	24,300	5,760	1,760	27,980	
'83	399,010	26,710 2.70 72,120	25,710 0.35 9,000	11,380 1.70 19,350	29,200 0.70 20,370	8,620 0.40 3,450	15,250 0.20 3,110	47,880	24,820	5,870	1,800	30,580	
'84	406,190	28,180 2.70 76,090	27,120 0.35 9,490	11,880 1.70 20,200	30,030 0.70 21,020	9,050 0.40 3,620	17,260 0.20 3,450	48,740	25,270	5,970	1,830	34,160	
'85	413,590	29,730 2.70 80,270	28,020 0.35 10,020	12,400 1.70 21,080	31,020 0.70 21,710	9,590 0.40 3,840	19,130 0.20 3,030	49,620	25,720	6,080	1,860	38,050	
'86	420,940	31,370 2.70 84,700	30,190 0.35 10,570	12,930 1.70 21,980	32,030 0.70 22,410	10,100 0.40 4,040	21,170 0.20 4,230	50,510	26,180	6,190	1,890	42,170	
'87	428,220	33,090 2.70 89,340	31,850 0.35 11,150	13,460 1.70 22,880	32,990 0.70 23,090	10,630 0.40 4,230	23,370 0.20 4,680	51,420	26,650	6,300	1,930	46,550	
'88	436,230	34,910 2.70 94,260	33,600 0.35 11,760	13,860 1.70 23,560	33,580 0.70 23,510	11,080 0.40 4,430	25,730 0.20 5,150	52,350	27,130	6,410	1,960	51,100	
'89	444,080	36,030 2.70 99,460	35,450 0.35 12,410	14,280 1.70 24,280	34,190 0.70 23,930	11,540 0.40 4,620	26,310 0.20 5,660	53,290	27,620	6,530	2,000	57,420	
'90	452,080	38,860 2.70 104,920	37,400 0.35 13,090	14,710 1.70 25,010	34,800 0.70 24,360	12,030 0.40 4,810	27,730 0.20 6,230	54,250	28,120	6,650	2,030	61,230	
'91	460,220	41,000 2.70 110,700	39,460 0.35 13,810	15,150 1.70 25,760	35,430 0.70 24,800	12,530 0.40 5,010	34,230 0.20 6,850	55,230	28,630	6,770	2,070	66,810	
'92	468,500	43,250 2.70 116,780	41,630 0.35 14,570	15,600 1.70 26,520	36,070 0.70 25,250	13,060 0.40 5,220	37,680 0.20 7,540	56,220	29,140	6,890	2,110	72,790	
'93	476,930	45,030 2.70 123,200	43,920 0.35 15,370	16,070 1.70 27,320	36,720 0.70 25,700	13,610 0.40 5,440	43,440 0.20 8,290	57,230	29,670	7,010	2,150	79,140	

1. Without Project

(1) Population	308,570/'81	4.0 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	23,300 ha	4.5 %/annual
	b. dry paddy	6,800 ha	2.0 %/annual
	c. cassava + sweet potato	2,300 ha	1.5 %/annual
	d. maize + soya bean +...	33,200 ha	6.0 %/annual
o cash crops	a. coffee	1,350 ha	2.0 %/annual
	b. clove	3,300 ha	8.0 %/annual
	c. coconut	37,200 ha	1.0 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	3.8 t/ha	0 %/annual
	b. dry paddy	1.5 t/ha	0 %/annual
	c. cassava + ...	7.0 t/ha	1 %/annual
	d. maize +	1.2 t/ha	2 %/annual
o cash crops	a. coffee	0.6 t/ha	0 %/annual
	b. clove	0.05 t/ha	7 %/annual
	c. coconut	0.85 t/ha	2 %/annual

2. With Project

(1) Population	308,570/'80	4.2 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	23,300 ha	4.5 %/annual
	b. dry paddy	6,800 ha	2.0 %/annual
	c. cassava + ...) 6 years	2,300 ha	1.6 %/annual
	d. maize +) 10 %	33,200 ha	6.3 %/annual
o cash crops	a. coffee 6 years 10%	1,350 ha	2.0 %/annual
	b. clove	3,300 ha	8.0 %/annual
	c. coconut 6 years 10%	37,200 ha	1.0 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	3.8 t/ha	0 %/annual
	b. dry paddy	1.5 t/ha	0 %/annual
	c. cassava + ...	7.0 t/ha	1 %/annual
	d. maize +	1.2 t/ha	2 %/annual
o cash crops	a. coffee	0.6 t/ha	0 %/annual
	b. clove	0.05 t/ha	7 %/annual
	c. coconut	0.85 t/ha	2 %/annual

3. Road Condition

Area;	rolling
Road surface type;	earth 57.6 % gravel (stone) 31.0 %
Road length;	total 591 Km supported 474 Km
Surface condition;	good 45.1%, fair 5.5%, poor 17.9%, bad 31.5%.

4. Consumption

(1) rice	120	Kg/capita annual	
(2) cassava + ...	62,2	Kg/capita annual	
(3) maize +	14,7	Kg/capita annual	
(4) others	4,5	Kg/capita annual	(salt, sugar, pepper, cooking oil etc.).

5. Road Network

(1) National road length	225,9	Km	
(2) Provincial road length	97,8	Km	
(3) Kabupaten road length	591,0	Km	(474)
(4) T o t a l	914,7	Km	

KANUPATTIN NO.1. HONGKONG (WILDONE PROJECT)

Year	Population	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION				FOOD CONSUMPTION				Production to be transported.
		Wet paddy	Dry paddy	Cassava + ..	Maize + ..	Coconut	Coffee	Clove	Rice	Cassava + ..	Maize + ..	Others		
'01	308,370	23,300 ha 3.80 t/ha 88,540 ton	6,800 1.50 10,200	2,300 7.00 16,100	33,200 1.20 39,840	37,200 0.85 31,620	1,350 0.60 810	3,300 0.05 170	37,030	19,190	4,540	1,390	108,320	
'02	320,910	24,350 3.80 92,530	6,940 1.50 10,410	2,330 7.07 16,473	35,190 1.22 42,930	37,570 0.87 32,690	1,380 0.80 830	3,560 0.05 180	38,510	19,960	4,720	1,440	114,460	
'03	333,750	25,440 3.80 96,670	7,070 1.50 10,610	2,370 7.14 16,920	37,300 1.25 46,630	37,950 0.88 33,400	1,400 0.60 840	3,850 0.06 230	40,050	20,760	4,910	1,500	120,870	
'04	347,100	26,590 3.80 101,040	7,220 1.50 10,830	2,410 7.21 17,380	39,540 1.27 50,220	38,330 0.90 34,500	1,430 0.60 860	4,160 0.06 250	41,650	21,590	5,100	1,560	127,700	
'05	360,980	27,790 3.80 105,600	7,360 1.50 11,040	2,440 7.23 17,760	41,910 1.30 54,480	38,710 0.90 34,840	1,460 0.60 880	4,490 0.07 310	43,320	22,450	5,310	1,620	134,630	
'06	375,420	29,040 3.80 110,350	7,510 1.50 11,270	2,480 7.35 18,230	44,430 1.32 58,650	39,100 0.90 35,190	1,490 0.60 890	4,850 0.07 340	45,060	23,350	5,520	1,690	141,510	
'07	390,440	30,340 3.80 115,200	7,660 1.50 11,490	2,510 7.43 18,650	47,090 1.35 63,570	39,490 0.90 35,540	1,520 0.60 910	5,240 0.08 420	46,860	24,290	5,740	1,760	149,340	
'08	406,060	31,710 3.80 120,500	7,810 1.50 11,720	2,550 7.50 19,130	49,920 1.38 68,090	39,880 0.90 35,890	1,550 0.60 930	5,660 0.08 450	48,730	25,260	5,970	1,830	157,620	
'09	422,300	33,130 3.80 125,890	7,970 1.50 11,940	2,590 7.58 19,630	52,920 1.41 74,620	40,280 0.90 36,230	1,580 0.60 950	6,110 0.09 550	50,680	26,270	6,210	1,900	166,470	
'90	439,190	34,630 3.80 131,590	8,130 1.50 12,200	2,630 7.66 20,140	56,090 1.43 80,210	40,690 0.90 36,620	1,610 0.60 970	6,600 0.09 590	52,700	27,320	6,460	1,980	175,350	
'91	456,760	36,100 3.80 137,480	8,290 1.50 12,440	2,670 7.73 20,640	59,460 1.46 86,810	41,090 0.90 36,980	1,640 0.60 980	7,120 0.10 710	54,810	28,410	6,710	2,060	185,300	
'92	475,030	37,810 3.80 143,680	8,450 1.50 12,680	2,710 7.81 21,170	63,020 1.49 93,900	41,500 0.90 37,350	1,670 0.60 1,000	7,690 0.11 850	57,000	29,550	6,980	2,140	196,120	
'93	494,030	39,510 3.80 150,140	8,620 1.50 12,930	2,750 7.89 21,700	66,800 1.52 101,340	41,920 0.90 37,730	1,700 0.60 1,020	8,110 0.11 910	59,280	30,730	7,260	2,220	207,480	

KARUPATTIN VOL. MANGONDOV (With Project)

Year	Population	FOOD CROPS PRODUCTION			CASH CROPS PRODUCTION					FOOD CONSUMPTION				Production to be transported
		Wet paddy	Dry paddy	Cassava + ..	Maize + ..	Coconut	Coffee	Clove	Rice	Cassava + ..	Maize + ..	Others		
'81	308,570	23,300 ha 3.80 t/ha 88,540 ton	6,800 1.50 10,200	2,300 7.00 16,100	33,200 1.20 39,840	37,200 0.85 31,820	1,350 0.60 810	3,300 0.03 170	37,030	19,190	4,340	1,390	108,320	
'82	321,530	24,350 3.80 92,550	6,940 1.50 10,410	2,380 7.07 16,830	35,840 1.22 43,720	38,190 0.87 33,230	1,400 0.60 840	3,560 0.03 190	36,586	20,000	4,730	1,450	115,370	
'83	335,030	25,440 3.80 96,670	7,070 1.50 10,610	2,450 7.14 17,490	38,620 1.25 48,280	39,190 0.88 34,490	1,440 0.60 860	3,850 0.06 230	40,200	20,040	4,920	1,510	122,900	
'84	349,110	26,590 3.80 101,040	7,220 1.50 10,830	2,530 7.21 18,240	41,540 1.27 52,750	40,190 0.90 36,170	1,500 0.60 900	4,160 0.06 250	41,090	21,710	5,130	1,570	130,810	
'85	363,770	27,390 3.80 105,600	7,360 1.50 11,040	2,610 7.28 19,000	44,600 1.30 57,980	42,190 0.90 37,070	1,550 0.60 930	4,490 0.07 310	43,650	22,630	5,330	1,640	138,810	
'86	379,050	29,040 3.80 110,350	7,510 1.50 11,270	2,690 7.35 19,770	47,830 1.32 63,140	42,200 0.90 37,980	1,600 0.60 960	4,850 0.07 340	45,400	23,580	5,570	1,710	146,830	
'87	394,970	30,340 3.80 115,290	7,660 1.50 11,490	2,760 7.43 20,510	51,230 1.35 69,130	43,220 0.90 38,890	1,650 0.60 990	5,240 0.08 420	47,400	24,570	5,810	1,780	155,660	
'88	411,550	31,710 3.80 120,500	7,810 1.50 11,720	2,800 7.50 21,000	54,450 1.38 75,140	43,540 0.90 39,280	1,680 0.60 1,010	5,660 0.08 450	49,390	25,600	6,050	1,850	164,720	
'89	428,040	33,130 3.80 125,890	7,970 1.50 11,960	2,850 7.58 21,660	57,880 1.41 81,610	44,080 0.90 39,870	1,720 0.60 1,030	6,110 0.09 550	51,460	26,670	6,300	1,930	174,110	
'90	446,850	34,650 3.80 131,590	8,130 1.50 12,200	2,890 7.66 22,340	61,520 1.43 87,970	44,520 0.90 40,070	1,750 0.60 1,050	6,600 0.09 590	53,620	27,790	6,570	2,010	183,590	
'91	465,620	36,180 3.80 137,480	8,290 1.50 12,440	2,940 7.73 22,730	65,400 1.46 95,480	44,960 0.90 40,460	1,790 0.60 1,070	7,120 0.10 710	55,870	28,960	6,840	2,100	194,340	
'92	485,180	37,810 3.80 143,680	8,450 1.50 12,680	2,990 7.81 23,350	69,520 1.49 103,580	45,410 0.90 40,870	1,820 0.60 1,090	7,690 0.11 850	58,220	30,180	7,130	2,180	205,840	
'93	505,550	39,510 3.80 150,140	8,620 1.50 12,930	3,040 7.89 23,990	73,900 1.52 112,330	45,870 0.90 42,280	1,860 0.60 1,120	8,310 0.11 910	60,670	31,450	7,430	2,270	218,060	

1. WITHOUT PROJECT

(1) Population	616,100/1981	0.3 %/annual
(2) Harvested Area		
- food crops	a. wet paddy	88,400 ha 4 %/annual
	b. dry paddy	6,900 ha 0 %/annual
	c. cassava†	4,900 ha 0 %/annual
	d. maize†soya bean	89,100 ha 0 %/annual
- cash crops	a. coconut	105,000 ha 1 %/annual
(3) Yield Rate		
- food crops	a. wet paddy	3.75 t/ha 3 %/annual
	b. dry paddy	1.55 t/ha 2 %/annual
	c. cassava†	4.75 t/ha 4 %/annual
	d. maize†	0.60 t/ha 2 %/annual
- cash crops	a. coconut	0.50 t/ha 0 %/annual

2. WITH PROJECT

(1) Population	616,100/1981	0.9 %/annual
(2) Harvested area		
- food crops	a. wet paddy	88,400 ha 4.2 %/annual
	b. dry paddy	6,900 ha 0.6 %/annual
	c. cassava†	4,900 ha 0.6 %/annual
	d. maize†	89,100 ha 0.6 %/annual
- cash crops	a. coconut	105,000 ha 1 %/annual
(3) Yield Rate		
- food crops	a. wet paddy	3.75 t/ha 3.2 %/annual
	b. dry paddy	1.55 t/ha 2.1 %/annual
	c. cassava†	4.75 t/ha 4.2 %/annual
	d. maize†	0.60 t/ha 2.1 %/annual
- cash crops	a. coconut	0.50 t/ha 0 %/annual

3. Road Condition

area ; flat
road surface type ; earth 24.1 % gravel (stone) 70.1 %
road length ; 312 Km supported 295 Km
surface condition ; good 44.7%; fair 5.2%, poor 29.9%
bad 20.2%

4. Road Network

(1) national road length	0 Km
(2) provincial road length	309 Km
(3) Kabupaten road length	312 Km (295)
(4) Total	621 Km

KANNIAPATTIN BOUNTY

(with project)

YEAR	POPULATION	FOOD CROPS PRODUCTION						CASH CROPS PRODUCTION				FOOD CONSUMPTION				PRODUCTION TRANSPORTED		
		wet paddy		dry paddy		casava*		maize*		coconut		rice		casava*			maize + others	
		ha	kg/ha	ha	kg/ha	ha	kg/ha	ha	kg/ha	ha	kg/ha	ha	kg/ha	ha	kg/ha		ha	kg/ha
1981	616,100	88,400	6,900	4,900	89,100	105,000	0.50	0.50	0.50	0.50	73,930	38,320	9,040	2,770	326,280			
1982	621,640	92,110	6,940	4,930	89,630	106,050	0.50	0.50	0.50	74,600	38,670	9,140	2,800	349,420				
1983	627,240	95,980	6,980	4,980	90,170	107,110	0.50	0.50	0.50	75,270	39,010	9,220	2,820	374,970				
1984	632,880	100,010	7,020	4,990	90,710	108,180	0.50	0.50	0.50	75,950	39,370	9,300	2,850	403,030				
1985	638,580	104,210	7,070	5,020	91,260	109,260	0.50	0.50	0.50	76,630	39,720	9,390	2,870	432,690				
1986	644,330	108,590	7,110	5,050	91,810	110,360	0.50	0.50	0.50	77,320	40,080	9,470	2,900	466,500				
1987	650,130	113,130	7,150	5,080	92,360	111,460	0.50	0.50	0.50	78,020	40,440	9,560	2,930	501,570				
1988	655,980	117,900	7,200	5,110	92,910	112,570	0.50	0.50	0.50	78,720	40,800	9,640	2,950	538,210				
1989	661,880	122,860	7,240	5,140	93,470	113,700	0.50	0.50	0.50	79,430	41,170	9,730	2,980	577,960				
1990	667,840	128,020	7,280	5,170	94,030	114,840	0.50	0.50	0.50	80,140	41,540	9,820	3,010	621,400				
1991	673,850	133,390	7,320	5,200	94,590	115,990	0.50	0.50	0.50	80,840	41,910	9,910	3,030	650,440				
1992	679,910	138,990	7,330	5,230	95,160	117,130	0.50	0.50	0.50	81,590	42,290	9,990	3,060	677,510				
1993	686,030	144,830	7,410	5,260	95,730	118,320	0.50	0.50	0.50	82,320	42,670	10,080	3,090	706,610				

1. Without Project

(1) Population	307,050/'81	0.2 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	3,500 ha	7 %/annual
	b. dry paddy	6,700 ha	7 %/annual
	c. cassava + sweet potato	24,000 ha	2 %/annual
	d. maize + soya bean + ...	32,500 ha	4 %/annual
o cash crops	a. coffee	750 ha	2 %/annual
	b. coconut	9,300 ha	1 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	3.0 t/ha	0 %/annual
	b. dry paddy	1.4 t/ha	0 %/annual
	c. cassava + ...	5.9 t/ha	5 %/annual
	d. maize +	0.7 t/ha	0 %/annual
o cash crops	a. coffee	0.25 t/ha	0 %/annual
	b. coconut	0.65 t/ha	0 %/annual

2. With project

(1) Population	307,050/'81	0.21 %/annual	
(2) Harvested Area			
o food crops	a. wet paddy	3,500 ha	7 %/annual
	b. dry paddy	6,700 ha	7 %/annual
	c. cassava + ...) 6 years	24,000 ha	2.1 %/annual
	d. maize + ...) 10 %	32,500 ha	4.2 %/annual
o cash crops	a. coffee) 6 years	750 ha	2 %/annual
	b. coconut) 10 %	9,300 ha	1 %/annual
(3) Yield Rate			
o food crops	a. wet paddy	3.0 t/ha	0 %/annual
	b. dry paddy	1.4 t/ha	0 %/annual
	c. cassava + ...	5.9 t/ha	5.3 %/annual
	d. maize +	0.7 t/ha	0 %/annual
o cash crops	a. coffee	0.25 t/ha	0 %/annual
	b. coconut	0.65 t/ha	0 %/annual

3. Road Condition

Area;	flat
Road surface type;	earth 40.5 % gravel (stone) 49.1 %
Road length;	total 580 Km supported 405 Km
Surface condition;	good 22.9%, fair 0.2%, poor 10.8%, bad 66.1%.

4. Consumption

(1) rice	120	Kg/capita annual
(2) cassava + ...	62,2	Kg/capita annual
(3) maize +	14,7	Kg/capita annual
(4) others	4,5	Kg/capita annual

5. Road Network

(1) National road length	
(2) Provincial road length	
(3) Kabupaten road length	580 Km (405)
(4) T o t a l	

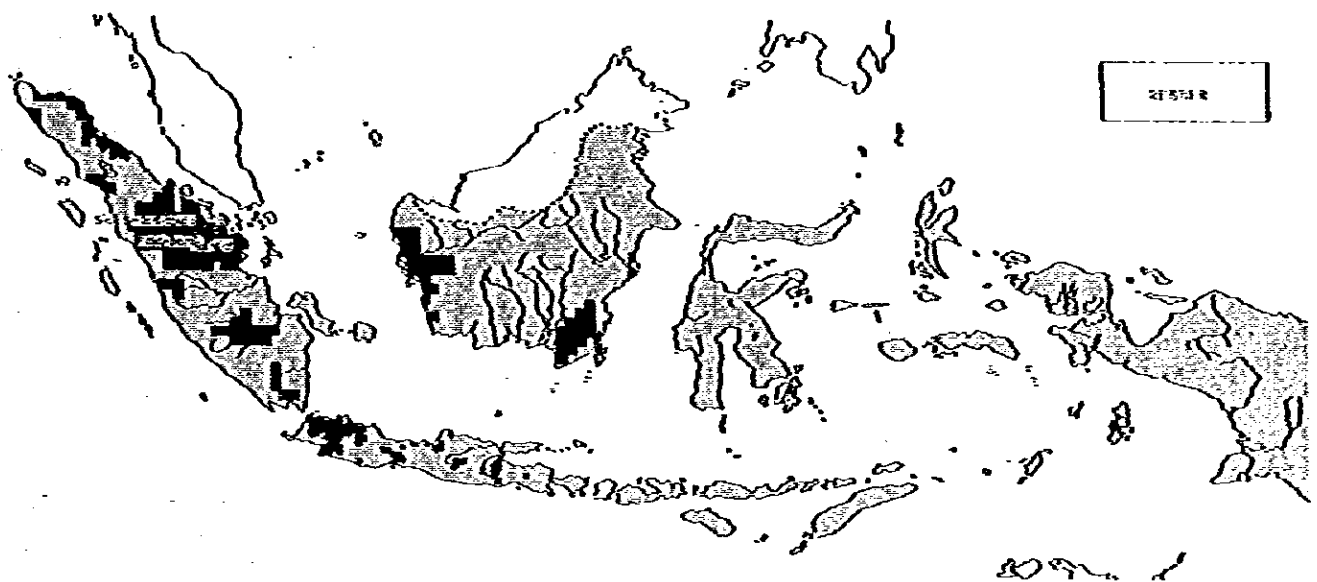
KARUPATTI MOTION (Without Project)

Year	Popula- tion	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION			FOOD CONSUMPTION				Production to be transported.
		wet paddy	Dry paddy	Cassava * ..	Maize * ..	Coconut	Coffee	Rice	Cassava * ..	Maize * ..	Others		
'81	307,050	3,500 ha 3.0 t/ha 10,500 ton	6,700 1.4 9,380	24,000 5.9 142,500	32,500 0.7 22,750	9,300 0.65 6,050	750 0.25 190	36,850	19,100	4,510	1,300	273,120	
'82	307,660	3,750 3.0 11,250	7,170 1.4 10,040	24,480 6.20 151,780	33,800 0.7 23,660	9,490 0.65 6,170	770 0.25 190	36,920	19,140	4,520	1,380	163,430	
'83	308,280	4,010 3.0 12,030	7,670 1.4 10,740	24,970 6.50 162,310	35,150 0.7 24,610	9,680 0.65 6,290	780 0.25 200	36,990	19,170	4,530	1,390	194,130	
'84	308,900	4,290 3.0 12,870	8,210 1.4 11,490	25,470 6.83 173,960	36,560 0.7 25,590	9,580 0.65 6,230	800 0.25 200	37,070	19,210	4,540	1,390	205,860	
'85	309,510	4,590 3.0 13,770	8,780 1.4 12,290	25,980 7.17 186,280	30,020 0.7 26,610	9,680 0.65 6,290	810 0.25 200	37,140	19,250	4,550	1,390	218,270	
'86	310,130	4,910 3.0 14,730	9,400 1.4 13,160	26,500 7.53 199,550	39,540 0.7 27,680	9,770 0.65 6,350	830 0.25 210	37,220	19,290	4,560	1,400	231,910	
'87	310,750	5,250 3.0 15,750	10,050 1.4 14,070	27,030 7.91 213,610	41,120 0.7 28,780	9,870 0.65 6,420	840 0.25 210	37,290	19,330	4,570	1,400	245,880	
'88	311,370	5,620 3.0 16,860	10,760 1.4 15,060	27,370 8.30 220,030	42,770 0.7 29,940	9,970 0.65 6,480	860 0.25 220	37,360	19,370	4,580	1,400	260,870	
'89	312,000	6,010 3.0 18,030	11,510 1.4 16,110	28,120 8.72 245,210	44,480 0.7 31,140	10,070 0.65 6,550	880 0.25 220	37,440	19,410	4,590	1,400	277,200	
'90	312,620	6,430 3.0 19,290	12,320 1.4 17,250	28,680 9.15 262,420	46,360 0.7 32,380	10,170 0.65 6,610	900 0.25 230	37,510	19,450	4,600	1,410	294,290	
'91	313,250	6,890 3.0 20,670	13,180 1.4 18,450	29,260 9.61 281,190	48,110 0.7 33,680	10,270 0.65 6,680	910 0.25 230	37,590	19,480	4,600	1,410	312,920	
'92	313,870	7,370 3.0 22,110	14,100 1.4 19,740	29,840 10.69 301,090	50,030 0.7 35,020	10,380 0.65 6,750	930 0.25 230	37,660	19,520	4,610	1,410	332,590	
'93	314,500	7,880 3.0 23,640	15,090 1.4 21,130	30,440 10.59 322,360	52,030 0.7 36,420	10,480 0.65 6,810	950 0.25 240	37,740	19,560	4,620	1,410	353,580	

KANUPATEN RUTON (WICH Project)

Year	Popula- tion	FOOD CROPS PRODUCTION				CASH CROPS PRODUCTION				FOOD CONSUMPTION				Production to be Transported.
		wet paddy	Dry paddy	Cassava + ..	Maize + ..	Coconut	Coffee	Rice	Cassava + ..	Maize + ..	Others			
'01	307,050	3,500 ha 3.0 t/ha 10,500 ton	6,700 2.4 9,380	24,000 5.9 141,600	32,500 0.7 22,750	9,300 0.65 6,050	750 0.25 190	36,850	19,100	4,510	1,380	173,120		
'02	307,690	3,750 3.0 11,250	7,170 1.4 10,040	24,500 6.21 152,140	34,410 0.7 24,090	4,550 0.65 6,210	780 0.25 300	36,920	19,140	4,520	1,300	184,340		
'03	308,340	4,010 3.0 12,030	7,670 2.4 10,740	25,020 6.54 163,630	36,370 0.7 25,460	2,800 0.65 6,370	810 0.25 200	37,000	19,180	4,530	1,390	196,500		
'04	308,990	4,290 3.0 12,870	8,210 1.4 11,490	25,540 6.89 175,970	38,590 0.7 26,870	10,050 0.65 6,530	840 0.25 210	37,000	19,220	4,540	1,390	209,480		
'05	309,640	4,590 3.0 13,770	8,780 1.4 12,290	26,080 7.25 189,080	40,480 0.7 28,340	10,300 0.65 6,700	860 0.25 220	37,100	19,260	4,550	1,390	223,240		
'06	310,290	4,910 3.0 14,730	9,400 1.4 13,180	26,630 7.64 203,450	42,630 0.7 29,840	10,550 0.65 6,860	890 0.25 220	37,200	19,300	4,560	1,400	238,180		
'07	310,940	5,250 3.0 15,750	10,050 1.4 14,070	27,190 8.04 218,610	44,850 0.7 31,400	10,800 0.65 7,020	920 0.25 230	37,310	19,340	4,570	1,400	253,930		
'08	311,590	5,620 3.0 16,860	10,760 1.4 15,060	27,760 8.47 235,130	46,730 0.7 32,710	10,920 0.65 7,090	940 0.25 240	37,390	19,380	4,580	1,400	270,690		
'09	312,250	6,010 3.0 18,030	11,510 1.4 16,110	28,340 8.92 252,990	48,700 0.7 34,090	11,020 0.65 7,160	960 0.25 240	37,470	19,420	4,590	1,410	288,390		
'90	312,900	6,430 3.0 19,290	12,320 1.4 17,250	28,940 9.39 271,750	50,740 0.7 35,520	11,130 0.65 7,230	980 0.25 250	37,550	19,460	4,600	1,410	307,430		
'91	313,560	6,890 3.0 20,670	13,180 1.4 18,450	29,540 9.89 292,150	52,870 0.7 37,010	11,240 0.65 7,300	1,000 0.25 250	37,630	19,500	4,610	1,410	327,430		
'92	314,220	7,370 3.0 22,110	14,100 1.4 19,740	30,160 10.41 313,970	55,090 0.7 38,560	11,350 0.65 7,380	1,020 0.25 260	37,710	19,540	4,620	1,410	349,690		
'93	314,880	7,880 3.0 23,640	15,090 1.4 21,130	30,800 10.96 337,570	57,410 0.7 40,190	11,460 0.65 7,450	1,040 0.25 260	37,790	19,590	4,630	1,420	373,240		

**APPENDIX B-4 SEVERAL CASH CROPS PRODUCTION AREAS
IN
INDONESIA**



APPENDIX B-5 TRANSPORT COST CALCULATION RESULTS

VEHICLE OPERATING COST (ON EARTH ROAD) Financial Cost

VEHICLE TYPE	MOTOR CYCLE				LIGHT BUS				LIGHT TRUCK				MEDIUM TRUCK			
	Good	Fair	Poor	Bad	Good	Fair	Poor	Bad	Good	Fair	Poor	Bad	Good	Fair	Poor	Bad
	40	25	15	10	40	30	10	5	40	30	15	5	40	30	20	10
Road Surface Condition	100															
Average Running Speed (Km/hr)	100															
Fuel Unit Price (Rp/l)	100															
Fuel + Oil Consumption (l/Km)	0.040	0.055	0.070	0.080	0.270	0.350	0.550	0.620	0.260	0.330	0.460	0.580	0.395	0.520	0.680	0.850
(Fuel Equivalent)																
Fuel + Oil Cost (Rp/Km)	4.0	5.5	7.0	8.0	27.0	35.0	55.0	62.0	26.0	33.0	46.0	56.0	13.8	18.6	23.8	29.8
Cost of New Tyre (Rp)	26,450															
No. of Tyre per Vehicle (excluding spares)	4															
New Tyre Service Life (Km)	21,000	20,000	17,900	13,200	12,000	11,400	10,200	7,500	11,000	10,500	9,400	7,000	14,000	13,300	11,900	9,000
Tyre Cost (Rp/Km)	0.5	0.6	0.6	0.8	8.8	9.3	10.4	16.1	9.6	10.1	11.3	15.1	37.7	39.7	44.4	58.7
Repair & Maintenance Cost (Rp/Km)	2.9	3.2	3.6	4.4	7.8	8.6	9.8	11.7	2.9	10.9	12.4	14.9	15.2	16.7	19.0	22.8
New Vehicle Price (10 ³ Rp)	725 (4% Tax)															
Vehicle Life (Km)	90,000	81,000	72,800	60,000	360,000	324,000	288,000	240,000	360,000	324,000	288,000	240,000	480,000	432,000	384,000	320,000
Opportunity Cost (%)	18															
Total Depreciation (%)	95															
Distance Dep. Cost (Rp/Km)	11.7	12.5	13.5	15.3	20.2	23.0	25.4	29.3	18.4	19.6	21.1	23.9	34.6	36.9	39.7	45.0
Standing Cost (Rp/Km)	3.3	5.3	8.8	13.2	6.6	8.8	26.4	52.8	9.9	13.2	26.4	79.2	24.6	32.8	49.2	98.4
Driver's Wage (Rp/hr)	200 X 1															
Helper's Wage (Rp/hr)	50 X 1															
Wage Cost (Rp/Km)	6.3															
Average Passengers per Vehicle	8.5															
Maximum Loads per Vehicle (Ton)	0.85															
Vehicle Operating Cost (Rp/Passenger Km)	13.2	15.9	19.7	24.5	9.0	11.0	17.9	25.9	-	-	-	-	-	-	-	-
Vehicle Operating Cost (Rp/Ton.Km)	-	-	-	-	-	-	-	-	95.5	113.6	161.1	294.2	27.7	32.2	39.6	60.8

Source: JICA field Survey
 Special Report for Vehicle Operating Cost for 1/10/79.
 Prepared by screening Feasibility Project office,
 Yogyakarta Rural Roads Study Report by Enax of New Zealand.

VEHICLE OPERATING COST (ON GRAVEL ROAD)

Financial Cost

VEHICLE TYPE	MOTOR CYCLE					LIGHT BUS					LIGHT TRUCK					MEDIUM TRUCK				
	Good	Fair	Poor	Bad	100	Good	Fair	Poor	Bad	100	Good	Fair	Poor	Bad	100	Good	Fair	Poor	Bad	100
Road Surface Condition	4.0	3.0	1.5	1.0	100	4.0	3.0	1.5	1.0	100	4.0	3.0	1.5	1.0	100	4.0	3.0	1.5	1.0	100
Average Running Speed (km/hr)	40	30	15	10	100	40	30	15	10	100	40	30	15	10	100	40	30	15	10	100
Fuel Unit Price (Rp/l)	0.040	0.050	0.070	0.080	0.270	0.310	0.490	0.620	0.620	0.260	0.300	0.410	0.580	0.580	0.395	0.460	0.680	0.830	0.830	0.830
Fuel + Oil Consumption (l/km) (Fuel Equivalent)	4.0	5.0	7.0	8.0	27.0	31.0	49.0	62.0	62.0	20.0	30.0	41.0	58.0	58.0	13.8	16.1	23.8	29.8	29.8	29.8
Fuel + Oil Cost (Rp/km)	5.300	3.300	2.100	1.600	7.290	9.610	15.230	19.160	19.160	5.200	9.000	12.410	17.660	17.660	4.900	5.800	8.300	10.100	10.100	10.100
Cost of New Tyre (Rp)	2	2	2	2	26,450	26,450	26,450	26,450	26,450	26,450	26,450	26,450	26,450	26,450	88,000	88,000	88,000	88,000	88,000	88,000
No. of Tyre per Vehicle (including spares)	2	2	2	2	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6
New Tyre Service Life (km)	25,000	22,500	17,500	11,700	14,000	12,600	9,800	6,500	6,500	13,000	11,700	9,100	6,000	6,000	16,500	14,900	11,600	7,600	7,600	7,600
Tyre Cost (Rp/km)	0.4	0.5	0.6	0.9	7.6	8.4	10.8	16.3	16.3	8.1	9.0	11.6	17.6	17.6	32.0	35.4	45.3	69.3	69.3	69.3
Repair & Maintenance Cost (Rp/km)	2.9	3.2	3.6	4.4	7.8	8.6	9.8	11.7	11.7	9.9	10.9	12.4	14.9	14.9	15.2	16.7	19.0	22.8	22.8	22.8
New Vehicle Price (10 ³ Rp)	725 (65% Tax)	725 (65% Tax)	725 (65% Tax)	725 (65% Tax)	5,504 (11% Tax)	5,504 (11% Tax)	5,504 (11% Tax)	5,504 (11% Tax)	5,504 (11% Tax)	4,291 (13% Tax)	4,291 (13% Tax)	4,291 (13% Tax)	4,291 (13% Tax)	4,291 (13% Tax)	10,190 (12% Tax)	10,190 (12% Tax)	10,190 (12% Tax)	10,190 (12% Tax)	10,190 (12% Tax)	10,190 (12% Tax)
Vehicle life (km)	90,000	81,000	72,000	60,000	360,000	324,000	288,000	240,000	240,000	360,000	324,000	288,000	240,000	240,000	480,000	432,000	384,000	320,000	320,000	320,000
Opportunity Cost (%)	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Total Depreciation (%)	85	85	85	85	95	95	95	95	95	90	90	90	90	90	95	95	95	95	95	95
Distance Dep. Cost (Rp/km)	11.7	12.5	13.5	13.3	20.2	23.3	25.4	29.3	29.3	18.6	19.6	21.1	23.9	23.9	34.6	36.9	39.7	45.0	45.0	45.0
Standing Cost (Rp/km)	3.3	4.4	8.8	13.2	6.6	7.5	17.6	52.8	52.8	9.9	11.3	19.8	79.2	79.2	14.6	28.1	49.2	98.4	98.4	98.4
Driver's Wage (Rp/hr)	---	---	---	---	200 X 1	200 X 1	200 X 1	200 X 1	200 X 1	190 X 1	190 X 1	190 X 1	190 X 1	190 X 1	380 X 1	380 X 1	380 X 1	380 X 1	380 X 1	380 X 1
Helper's Wage (Rp/hr)	---	---	---	---	50 X 1	50 X 1	50 X 1	50 X 1	50 X 1	105 X 1	105 X 1	105 X 1	105 X 1	105 X 1	115 X 1	115 X 1	115 X 1	115 X 1	115 X 1	115 X 1
Wage Cost (Rp/km)	---	---	---	---	6.3	7.1	16.7	50.0	50.0	7.4	8.4	14.8	59.0	59.0	12.4	14.1	19.8	49.5	49.5	49.5
Average Passengers per Vehicle	1.7	1.7	1.7	1.7	8.5	8.5	8.5	8.5	8.5	---	---	---	---	---	---	---	---	---	---	---
Maximum Loads per Vehicle (Ton)	---	---	---	---	---	---	---	---	---	0.85	0.85	0.85	0.85	0.85	---	---	---	---	---	---
Vehicle Operating Cost (Rp / Passenger km)	13.1	15.1	19.7	24.6	8.9	10.1	13.2	26.1	26.1	---	---	---	---	---	---	---	---	---	---	---
Vehicle Operating Cost (Rp/Ton Km)	---	---	---	---	---	---	---	---	---	93.8	104.9	142.0	297.2	297.2	24.5	29.5	39.4	63.0	63.0	63.0

Source: JICA field Survey
 Special Report for Vehicle Operating Costs for 1/10/79.
 Prepared by screening Feasibility Project office,
 Yogyakarta Rural Roads Study Report by Enax of New Zealand.

TRANSPORT COST BY MANPOWER OR ANIMAL

	Back Pack or Over Head	Animal Cart	Bicycle
Movable Distances (Km)	25	30	60
Hours (hr)	8	8	8
Average Speed (Km/hr)	3	4	8
Average Capacity (Kg)	20	100	60
Wage Rate (Rp/Day)	800	1,000	1,500
Vehicle Price (Rp)	---	---	50,000
Transport Cost (Rp/Ton Km)	1,667	333	391

Source : JICA Field Survey

**APPENDIX B-6 PRODUCER'S SURPLUS CALCULATION TABLES
OF
7 KABUPATEN**

KABUPATEN KEPULAUAN RIAU

1. Reduction of transport Cost

- 107 Rps./ton.km.
- Average transport distance 10.8 km.
- Cost Reduction $107 \text{ Rps./ton.km} \times 10.8 \text{ km} = 1,156 \text{ Rps./ton.}$

2. Agricultural production cost

- Cassava	21,380	→	21,380	Rps./ton
- Coconut	91,200	→	91,200	Rps./ton
- Clove	127,200	→	127,200	Rps./ton
- Rubber	70,000	→	70,000	Rp./ton

3. Farmgate price

- Cassava	40,000	→	41,156	Rps./ton
- Coconut	115,000	→	116,156	Rps./ton
- Clove	9,600,000	→	9,601,156	Rps./ton
- Rubber	200,000	→	201,156	Rps./ton

4. Transport cost

- On improved road 59 Rps./ton.km
- On non-improved road 166 Rps./ton.km

5. Market price of consumption

- Rice	225	Rps./kg
- Cassava	90	Rps./kg
- Maize	175	Rps./kg

KABUPATEN KEPULAUAN RIAU (Without Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION				S U R P L U S					PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	CASSAVA	COCONUT	CLOVE	RUBBER	PADDY	CASSAVA	PAIZE	OTHERS	CASSAVA	COCONUT	CLOVE	RUBBER	OTHERS	MILLION Rps.	MILLION Rps.	MILLION Rps.	TRANS. COST	PRICE
1981	425	11,800	4,690	100	3,430	22,085	7,325	1,730	530	4,475	4,690	100	3,430	- 16,120	776.2	2,364.4	1,588.2	28.9	3,421.8
1982	430	12,260	4,780	110	3,360	22,525	7,470	1,765	540	4,790	4,780	110	3,360	- 16,445	787.5	2,469.3	1,681.8	29.5	3,490.6
1983	440	12,760	4,880	115	3,295	22,975	7,620	1,800	550	5,140	4,880	115	3,295	- 16,770	800.2	2,529.8	1,729.6	30.1	3,560.0
1984	445	13,260	4,975	125	3,225	23,435	7,775	1,835	560	5,485	4,975	125	3,225	- 17,110	812.6	2,636.5	1,823.9	30.7	3,631.7
1985	455	13,800	5,075	130	3,160	23,905	7,930	1,875	575	5,870	5,075	130	3,160	- 17,460	826.1	2,698.4	1,872.3	31.3	3,704.9
1986	465	14,350	5,175	135	3,100	24,385	8,085	1,910	585	6,265	5,175	135	3,100	- 17,805	840.1	2,761.7	1,921.6	31.9	3,778.8
1987	475	14,925	5,280	145	3,035	24,870	8,250	1,950	595	6,675	5,280	145	3,035	- 18,155	855.1	2,873.2	2,018.1	32.5	3,854.2
1988	480	15,530	5,385	155	2,975	25,370	8,415	1,990	610	7,115	5,385	155	2,975	- 18,530	871.2	2,986.9	2,115.7	33.2	3,932.5
1989	490	16,140	5,495	165	2,915	25,875	8,580	2,030	620	7,560	5,495	165	2,915	- 18,895	887.8	3,101.3	2,213.5	33.9	4,010.7
1990	500	16,765	5,600	170	2,855	26,395	8,755	2,070	635	8,030	5,600	170	2,855	- 19,275	903.9	3,168.2	2,264.3	34.6	4,091.2
1991	510	17,460	5,715	185	2,800	26,920	8,930	2,110	645	8,530	5,715	185	2,800	- 19,655	923.1	3,334.4	2,411.3	35.2	4,172.3
1992	515	18,160	5,825	195	2,745	27,460	9,105	2,155	660	9,055	5,825	195	2,745	- 20,060	941.8	3,453.1	2,511.3	36.0	4,257.2
1993	525	18,890	5,945	205	2,690	28,010	9,290	2,195	670	9,600	5,945	205	2,690	- 20,455	961.8	3,573.7	3,611.9	36.7	4,341.9

KABUPATEN KEPULAUAN RIAU (With Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION				S U R P L U S					PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	CASSAVA	COCONUT	CLOVE	RUBBER	PADDY	CASSAVA	PAI2E	OTHERS	CASSAVA	COCONUT	CLOVE	RUBBER	OTHERS	MILLION Rps.	MILLION Rps.	MILLION Rps.	TRANS. COST	PRICE
1981	425	11,795	4,690	100	3,430	22,085	7,325	1,730	530	4,470	4,690	100	3,430	- 16,120	776.1	2,365.3	1,589.2	27.4	3,421.8
1982	430	12,690	4,935	110	3,470	22,550	7,480	1,765	540	5,210	4,935	110	3,470	- 16,460	818.4	2,529.9	1,711.5	24.8	3,494.2
1983	440	13,600	5,190	115	3,515	23,020	7,635	1,805	550	5,965	5,190	115	3,515	- 16,805	861.5	2,649.6	1,788.1	22.0	3,567.4
1984	445	14,530	5,445	125	3,740	23,505	7,795	1,845	565	6,735	5,445	125	3,740	- 17,170	918.3	2,854.3	1,936.0	19.3	3,643.5
1985	455	15,140	5,550	130	3,660	24,000	7,960	1,880	575	7,180	5,550	130	3,660	- 17,525	932.4	2,919.8	1,987.4	16.2	3,719.5
1986	465	15,780	5,665	135	3,585	24,505	8,125	1,920	590	7,655	5,665	135	3,585	- 17,895	948.4	2,988.8	2,040.4	13.1	3,797.8
1987	475	16,445	5,775	145	3,505	25,015	8,295	1,960	600	8,150	5,775	145	3,505	- 18,265	964.7	3,103.4	2,138.7	11.6	3,876.8
1988	480	17,120	5,890	155	3,435	25,545	8,470	2,000	615	8,650	5,890	155	3,435	- 18,655	982.3	3,219.3	2,237.0	11.9	3,957.4
1989	490	17,855	6,010	160	3,520	26,080	8,650	2,045	625	9,205	6,010	160	3,520	- 19,045	1,011.7	3,321.2	2,309.5	12.1	4,042.8
1990	500	18,605	6,130	170	3,450	26,625	8,830	2,085	640	9,775	6,130	170	3,450	- 19,445	1,031.2	3,440.5	2,409.3	12.4	4,126.9
1991	510	19,375	6,250	185	3,375	27,185	9,015	2,130	650	10,360	6,250	185	3,375	- 19,850	1,051.3	3,607.5	2,556.2	12.6	4,214.0
1992	515	20,195	6,380	185	3,305	27,755	9,205	2,175	665	10,930	6,380	195	3,305	- 20,275	1,072.9	3,730.4	2,657.5	12.9	4,303.2
1993	525	21,035	6,505	205	3,380	28,340	9,400	2,220	680	11,635	6,505	205	3,380	- 20,700	1,104.7	3,882.6	2,777.9	13.2	4,393.9

KABUPATEN LAHAT

1. Transport Cost Reduction

- 225 Rps/ton Km
- Average transportation distance 8.7 Km
- Cost Reduction $225 \text{ Rps/ton Km} \times 8.7 \text{ Km} = 2000 \text{ Rp/ton}$

2. Agricultural production cost Reduction

- Paddy 55,080 \longrightarrow 55,010 Rps/ton
- Coffee 138,000 \longrightarrow 138,000 Rps/ton

3. Farmgate production price increase

- Paddy 90,000 \longrightarrow 92,000 Rps/ton
- Coffee 800,000 \longrightarrow 802,000 Rps/ton

4. Transport cost

- On improved road 89 Rps/ton Km
- On non-improved road 314 Rps/ton Km

5. Market Price of Consumption Goods

- Rice 225 Rps/Kg
- Cassava 90 Rps/Kg
- Maize 175 Rps/Kg

KARUPATAN LAMAT (Without Project)

	Agricultural Production						Local Consumption				Surplus			Production Cost		Production Price		Production Benefit		Food Consumption			
	Paddy	Casava	Maize	Coffee	Paddy	Casava	Maize	Others	Paddy	Coffee	Others	Paddy	Coffee	Paddy	Coffee	Paddy	Coffee	Paddy	Coffee	Paddy	Coffee	Trans.	Price
'81	29,355	1,190	710	4,895	21,795	7,230	1,715	525	6,095	4,895	-7,570	336	676	349	3,916	3,453	3,916	21	702				
'82	30,160	1,225	765	5,190	22,405	7,430	1,760	540	6,245	5,190	-7,740	344	716	562	4,152	3,654	4,152	21	733				
'83	30,990	1,250	845	5,500	23,030	7,640	1,865	530	6,410	5,500	-7,900	353	759	577	4,400	3,865	4,400	22	743				
'84	31,925	1,285	915	5,800	23,675	7,855	1,855	565	6,655	5,850	-8,075	367	805	599	4,664	4,091	4,664	22	756				
'85	32,850	1,320	990	6,180	24,340	8,075	1,910	585	6,865	6,180	-8,260	378	853	618	4,944	4,331	4,944	23	769				
'86	33,890	1,355	1,085	6,550	25,020	8,300	1,965	609	7,175	6,550	-8,425	395	904	646	5,240	4,587	5,240	23	779				
'87	34,980	1,390	1,165	6,940	25,725	8,530	2,020	615	7,505	6,945	-8,610	413	958	675	5,556	4,860	5,556	24	792				
'88	35,970	1,425	1,275	7,360	26,440	8,770	2,080	630	7,730	7,360	-8,780	426	1,016	696	5,888	5,142	5,888	24	796				
'89	36,650	1,460	1,385	7,800	27,185	9,015	2,135	650	7,630	7,800	-8,955	420	1,076	687	6,240	5,431	6,240	24	811				
'90	37,375	1,500	1,495	8,270	27,945	9,720	2,190	670	7,560	8,270	-9,135	416	1,141	680	6,616	5,759	6,616	25	821				
'91	38,120	1,535	1,630	8,770	28,730	9,530	2,250	690	7,485	8,770	-9,305	412	1,210	674	7,016	6,068	7,016	25	828				
'92	38,895	1,580	1,770	9,295	29,530	9,795	2,360	705	7,420	9,295	-9,510	409	1,280	668	7,436	6,412	7,436	26	843				
'93	39,715	1,615	1,930	9,850	30,360	10,070	2,380	730	7,370	9,850	-9,635	406	1,359	663	7,880	6,778	7,880	26	840				

KAMPATAY LAMAY (Wich Project)

	Agricultural Production				Local Consumption				Surplus			Production Cost			Production Price		Food Consumption		
	Paddy	Cassava	Maize	Coffee	Paddy	Cassava	Maize	Coffee	Paddy	Coffee	Others	Paddy	Coffee	Others	Paddy	Coffee	Others	Production Benefit	Food Consumption
	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons	X 10 ³ Tons
'81	29,355	1,190	710	4,895	21,795	7,250	1,705	530	6,090	4,895	-7,565	335	676		560	3,926		3,475	18
'82	30,325	1,260	800	5,560	22,425	7,440	1,760	535	6,380	5,560	-7,675	351	740		587	4,399		3,793	13
'83	31,325	1,330	900	5,850	23,080	7,655	1,810	555	6,685	5,850	-7,790	368	807		615	4,692		4,132	11
'84	32,420	1,400	1,000	6,355	23,745	7,875	1,860	575	7,050	6,355	-7,910	388	877		649	5,097		4,481	6
'85	33,510	1,435	1,080	6,745	24,435	8,105	1,915	590	7,395	6,745	-8,095	407	931		680	5,409		4,751	6
'86	34,695	1,470	1,180	7,165	25,145	8,340	1,970	605	7,815	7,165	-8,265	430	989		719	5,746		5,046	6
'87	35,930	1,520	1,280	7,605	25,510	8,585	2,030	615	8,620	7,605	-8,430	474	1,049		793	6,099		5,369	7
'88	37,060	1,555	1,400	8,080	26,625	8,835	2,085	635	8,585	8,080	-8,600	472	1,115		790	6,480		5,683	7
'89	37,875	1,605	1,530	8,580	27,395	9,090	2,150	655	8,590	8,580	-8,760	473	1,184		790	6,881		6,014	7
'90	38,720	1,640	1,650	9,115	28,190	9,350	2,210	675	8,595	9,115	-8,945	473	1,258		790	7,310		6,369	7
'91	39,590	1,685	1,800	9,675	29,010	9,620	2,275	700	8,600	9,675	-9,110	473	1,335		791	7,759		6,742	7
'92	40,485	1,735	1,965	10,280	29,845	9,900	2,340	720	8,615	10,280	-9,260	474	1,419		793	8,245		7,145	7
'93	41,415	1,780	2,140	10,915	30,715	10,190	2,410	735	8,630	10,915	-9,415	475	1,506		794	8,754		7,567	7

KABUPATEN LAMPUNG SELATAN
(without project)

YEAR	AGRICULTURAL PRODUCTION							LOCAL CONSUMPTION				SURPLUS				others	PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	TRANSPORT COST
	paddy	coconut	coffee	pepper	clove	cassava†	maize†	rice	cassava†	maize†	others	cocorot	coffee	pepper	clove		x 10 ⁶ Rps.	x 10 ⁶ Rps.	X 10 ⁶ Rps.	X 10 ⁶ Rps.
1981	47,975	4,615	7,480	95	1,355	30,710	3,800	34,935	18,105	4,280	1,310	4,615	7,480	95	1,355	-20,450	1,657	19,614	17,957	13
1982	49,370	4,775	7,740	100	1,400	30,710	3,800	36,155	18,740	4,430	1,355	4,775	7,740	100	1,400	-20,388	1,721	20,277	18,566	13
1983	50,905	4,945	8,015	105	1,450	30,710	3,800	37,420	19,395	4,585	1,405	4,945	8,015	105	1,450	-20,255	1,776	21,001	19,225	13
1984	52,405	5,115	8,295	110	1,500	30,710	3,800	38,730	20,075	4,745	1,450	5,115	8,295	110	1,500	-20,190	1,838	21,730	19,892	13
1985	54,055	5,295	8,585	110	1,555	30,710	3,800	40,085	20,775	4,910	1,505	5,295	8,585	110	1,555	-20,060	1,902	22,511	20,609	13
1986	55,670	5,480	8,885	115	1,610	30,710	3,800	41,490	21,505	5,085	1,555	5,480	8,885	115	1,610	-19,975	1,976	23,305	21,329	13
1987	57,430	5,670	9,195	120	1,665	30,710	3,800	42,940	22,255	5,260	1,610	5,670	9,195	120	1,665	-19,840	2,037	24,107	22,070	13
1988	59,155	5,870	9,520	125	1,725	30,710	3,800	44,445	23,035	5,445	1,665	5,870	9,520	125	1,725	-19,750	2,110	24,971	22,861	13
1989	61,045	6,075	9,850	130	1,785	30,710	3,800	46,000	23,840	5,635	1,725	6,075	9,850	130	1,785	-19,605	2,183	25,839	23,656	13
1990	63,010	6,290	10,195	135	1,845	30,710	3,800	47,610	24,675	5,835	1,785	6,290	10,195	135	1,845	-19,445	2,260	26,721	24,461	13
1991	65,035	6,510	10,555	140	1,910	30,710	3,800	49,275	25,540	6,035	1,845	6,510	10,555	140	1,910	-19,280	2,339	27,663	25,324	13
1992	67,025	6,735	10,920	150	1,975	30,710	3,800	51,000	26,430	6,250	1,910	6,735	10,920	150	1,975	-19,180	2,422	28,615	26,193	12
1993	69,200	6,975	11,305	155	2,045	30,710	3,800	52,785	27,355	6,465	1,980	6,975	11,305	155	2,045	-19,000	2,507	29,627	27,120	12

KABUPATEN LAMPUNG SELATAN
(with project)

YEAR	AGRICULTURAL PRODUCTION							LOCAL CONSUMPTION				SURPLUS					PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	TRANSPORT COST
	paddy	coconut	coffee	pepper	clove	cassava†	maize†	rice	cassava†	maize†	others	coconut	coffee	pepper	clove	others	x 10 ⁶ Rps.	x 10 ⁶ Rps.	x 10 ⁶ Rps.	x 10 ⁶ Rps.
1981	47,975	4,615	7,480	95	1,355	30,710	3,800	34,935	18,105	4,280	1,310	4,615	7,480	95	1,355	-20,450	1,657	19,614	17,957	12
1982	49,475	4,785	7,885	100	1,405	31,030	3,835	36,225	18,775	4,435	1,360	4,785	7,885	100	1,405	-20,650	1,736	20,445	18,709	10
1983	51,120	5,075	8,180	105	1,455	31,325	3,870	37,565	19,470	4,600	1,410	5,075	8,180	105	1,455	-20,775	1,811	21,201	19,390	7
1984	52,710	5,260	8,620	110	1,585	31,645	3,925	38,955	20,190	4,770	1,460	5,260	8,620	110	1,585	-20,960	1,907	22,828	20,921	6
1985	54,480	5,575	8,940	110	1,645	31,965	3,960	40,395	20,940	4,950	1,515	5,575	8,940	110	1,645	-21,105	1,988	23,696	21,708	6
1986	56,200	5,780	9,420	115	1,705	32,280	3,995	41,890	21,715	5,130	1,570	5,780	9,420	115	1,705	-21,305	2,082	24,685	22,603	6
1987	58,070	6,120	9,920	120	1,770	32,600	4,030	43,440	22,515	5,320	1,630	6,120	9,920	120	1,770	-21,455	2,192	25,753	23,561	6
1988	59,905	6,345	10,290	125	1,835	32,920	4,080	45,050	23,350	5,515	1,690	6,345	10,290	125	1,835	-21,640	2,273	26,704	24,431	6
1989	61,950	6,720	10,745	130	1,995	33,260	4,115	46,715	24,215	5,720	1,750	6,720	10,745	130	1,995	-21,860	2,392	28,652	26,260	6
1990	64,025	6,970	11,410	135	2,065	33,580	4,155	48,445	25,110	5,935	1,815	6,970	11,410	135	2,065	-21,900	2,517	29,890	27,373	6
1991	66,155	7,375	11,835	140	2,140	33,920	4,190	50,235	26,040	6,155	1,885	7,375	11,835	140	2,140	-22,070	2,624	31,002	28,378	7
1992	68,250	7,645	12,460	150	2,220	34,125	4,240	52,095	27,005	6,380	1,955	7,645	12,460	150	2,220	-22,140	2,748	32,311	29,563	7
1993	70,535	8,090	13,110	155	2,410	34,125	4,275	54,020	28,000	6,615	2,025	8,090	13,110	155	2,410	-21,950	2,905	34,711	31,806	7

KABUPATEN MANGGARAI

1. Reduction of transport Cost

- 215 Rps./ton.km
- Average transport distance 27.7 km.
- Cost Reduction 215 Rps./ton.km x 27.7 km = 5,956 Rps./ton.

2. Agricultural production cost

- Paddy	55,080	→	54,900	Rps./ton
- Maize	25,700	→	25,090	Rps./ton
- Coconut	91,200	→	91,200	Rps./ton
- Coffee	138,000	→	138,000	Rps./ton

3. Farmgate price

- Paddy	90,000	→	95,956	Rps./ton
- Maize	60,000	→	65,956	Rps./ton
- Coconut	115,000	→	120,956	Rps./ton
- Coffee	960,000	→	965,956	Rps./ton

4. Transport cost

- On improved road 89 Rps./ton.km
- On non-improved road 304 Rps./ton.km

5. Market price of consumption

- Rice	225	Rps./kg
- Cassava	90	Rps./kg
- Maize	175	Rps./kg

KABUPATEN MANOGARAI (Without Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION				S U R P L U S					PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	CASSAVA	MAIZE	COCONUT	COFFEE	PADDY	CASSAVA	MAIZE	OTHERS	PADDY	MAIZE	COCONUT	COFFEE	OTHERS	MILLION Rps.	MILLION Rps.	MILLION Rps.	TRANS. COST	PRICE
1981	21,325	5,445	5,865	950	770	22,235	7,375	1,745	530	-	4,120	950	770	- 3,040	298.8	1,095.7	796.9	25.6	304.7
1982	22,500	5,600	5,960	990	845	22,610	7,500	1,770	540	-	4,190	990	845	- 2,550	314.6	1,176.5	861.9	21.5	186.8
1983	33,735	5,765	6,065	1,030	930	22,995	7,630	1,805	550	740	4,260	1,030	930	- 2,415	372.5	1,333.5	961.0	20.3	167.9
1984	25,040	5,930	6,170	1,070	1,025	23,385	7,760	1,835	560	1,655	4,335	1,070	1,025	- 2,390	441.6	1,516.1	1,074.5	20.1	164.7
1985	26,420	6,105	6,275	1,120	1,125	23,785	7,890	1,865	570	2,635	4,410	1,120	1,125	- 2,355	515.9	1,710.6	1,194.7	19.8	160.7
1986	27,875	6,285	6,395	1,165	1,240	24,190	8,025	1,895	580	3,685	4,500	1,165	1,240	- 2,320	596.0	1,926.0	1,330.0	19.5	156.6
1987	29,405	6,470	6,490	1,215	1,365	24,600	8,160	1,930	590	4,805	4,560	1,215	1,365	- 2,280	681.0	2,156.2	1,475.2	19.2	152.1
1988	31,020	6,650	6,600	1,265	1,500	25,020	8,300	1,960	600	6,000	4,640	1,265	1,500	- 2,250	772.1	2,403.8	1,631.8	18.9	148.5
1989	32,725	6,845	6,710	1,320	1,650	25,445	8,440	1,995	610	7,280	4,715	1,320	1,650	- 2,205	870.2	2,673.9	1,803.7	18.6	143.6
1990	34,530	7,040	6,825	1,375	1,815	25,875	8,585	2,030	620	8,655	4,795	1,375	1,815	- 2,165	975.8	2,967.2	1,991.4	18.2	139.1
1991	36,430	7,245	6,940	1,430	1,995	26,315	8,730	2,065	630	10,115	4,875	1,430	1,995	- 2,115	1,088.1	3,282.5	2,194.4	17.8	133.7
1992	38,435	7,455	7,060	1,490	2,195	26,765	8,880	2,100	640	11,670	4,960	1,490	2,195	- 2,065	1,209.1	3,626.5	2,417.4	17.4	128.3
1993	40,545	7,675	9,180	1,555	2,415	27,220	9,030	2,135	650	13,325	5,045	1,555	2,415	- 2,005	1,338.7	3,999.2	2,660.5	16.9	122.0

KABUPATEN MANGGARAI (With Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION				S U R P L U S					PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	CASSAVA	MAIZE	COCONUT	COFFEE	PADDY	CASSAVA	MAIZE	OTHERS	PADDY	MAIZE	COCONUT	COFFEE	OTHERS	MILLION Rps.	MILLION Rps.	MILLION Rps.	TRANS. COST	PRICE
1981	21,325	5,445	5,865	950	770	22,235	7,375	1,745	530	-	4,120	950	770	- 3,370	298.6	1,098.4	799.8	26.8	304.7
1982	22,500	5,675	6,065	1,005	860	22,635	7,510	1,775	540	-	4,290	1,005	860	- 2,510	319.9	1,207.7	887.8	17.4	184.6
1983	23,735	5,960	6,275	1,065	955	23,040	7,645	1,805	550	695	4,470	1,065	955	- 2,235	381.0	1,388.0	1,007.0	13.2	151.2
1984	25,040	6,220	6,475	1,115	1,060	23,455	7,780	1,840	560	1,585	4,635	1,115	1,060	- 2,120	452.6	1,595.6	1,143.0	10.5	140.4
1985	26,420	6,490	6,685	1,180	1,180	23,880	7,920	1,870	570	2,540	4,815	1,180	1,180	- 2,000	531.6	1,829.4	1,297.8	7.9	128.7
1986	27,875	6,770	6,900	1,245	1,300	24,310	8,065	1,905	580	3,565	4,935	1,245	1,300	- 1,875	614.3	2,072.6	1,458.3	5.5	116.6
1987	29,405	7,045	7,110	1,310	1,440	24,745	8,210	1,940	590	4,660	5,170	1,310	1,440	- 1,755	703.7	2,337.6	1,633.9	4.3	104.9
1988	31,020	7,255	7,240	1,365	1,585	25,190	8,355	1,975	600	5,830	5,265	1,365	1,585	- 1,700	795.4	2,602.8	1,807.4	4.2	99.0
1989	32,725	7,480	7,370	1,420	1,745	25,645	8,510	2,010	615	7,080	5,360	1,420	1,745	- 1,645	893.5	2,890.2	1,996.7	4.1	92.7
1990	34,530	7,705	7,500	1,480	1,920	26,105	8,660	2,045	625	8,425	5,455	1,480	1,920	- 1,580	999.3	3,201.9	2,202.6	3.9	86.0
1991	36,430	7,935	7,638	1,545	2,110	26,575	8,815	2,085	635	9,855	5,553	1,545	2,110	- 1,515	1,114.2	3,536.9	2,422.7	3.7	79.2
1992	38,435	8,170	7,775	1,605	2,320	27,055	8,975	2,120	650	11,380	5,655	1,605	2,320	- 1,455	1,233.2	3,900.2	2,667.0	3.6	72.5
1993	40,545	8,415	7,915	1,675	2,555	27,540	9,135	2,160	660	13,005	5,755	1,675	2,555	- 1,380	1,363.7	4,298.1	2,934.4	3.4	64.8

KABUPATEN BOLAANG MONGONDOW

1. Reduction of transport Cost

- 242 Rps./ton.km
- Average transport distance 8.5 km.
- Cost Reduction $242 \text{ Rps./ton.km} \times 8.5 \text{ km} = 2,056 \text{ Rps./ton.}$

2. Agricultural production cost

- Paddy	55,080	→	55,020	Rps./ton
- Maize	25,700	→	25,490	Rps./ton
- Coconut	91,200	→	91,200	Rps./ton
- Coffee	138,000	→	138,000	Rps./ton
- Clove	127,200	→	127,200	Rps./ton

3. Farmgate price

- Paddy	90,000	→	92,056	Rps./ton
- Maize	60,000	→	62,056	Rps./ton
- Coconut	115,000	→	117,056	Rps./ton
- Coffee	960,000	→	962,056	Rps./ton
- Clove	9,600,000	→	9,602,056	Rps./ton

4. Transport cost

- On improved road 89 Rps./ton.km
- On non-improved road 331 Rps./ton.km

5. Market price of consumption

- Rice	225	Rps./kg
- Cassava	90	Rps./kg
- Maize	175	Rps./kg

KABUPATEN BOLAANG MONGONDOW (Without Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION			S U R P L U S						PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	MAIZE	COCONUT	COFFEE	CLOVE	PADDY	MAIZE	OTHERS	PADDY	MAIZE	COCONUT	COFFEE	CLOVE	OTHERS	MILLION Rps.	MILLION Rps.	MILLION Rps.	TRANS. COST	PRICE
1981	35,925	15,260	12,110	310	65	22,160	1,740	530	13,765	13,520	12,110	310	65	- 530	2,261.1	4,364.3	2,103.2	1.5	
1982	37,445	16,440	12,520	315	70	23,045	1,810	555	14,410	14,630	12,520	315	70	- 555	2,364.4	4,588.9	2,224.5	1.6	
1983	39,035	17,860	12,790	320	90	23,970	1,880	575	15,065	15,980	12,790	320	90	- 575	2,462.5	4,956.7	2,494.2	1.6	
1984	40,705	19,235	13,215	330	95	24,925	1,955	600	15,780	17,280	13,215	330	95	- 600	2,576.1	5,205.5	2,629.4	1.7	
1985	42,440	20,865	13,345	335	120	25,925	2,035	620	16,515	18,830	13,345	335	120	- 620	2,672.1	5,624.4	2,952.3	1.7	
1986	44,250	22,460	13,475	340	130	26,960	2,115	645	17,290	20,345	13,475	340	130	- 645	2,767.6	5,900.8	3,133.2	1.8	
1987	46,130	24,345	13,610	350	160	28,040	2,200	675	18,090	22,145	13,610	350	160	- 675	2,875.4	6,394.0	3,518.6	1.9	
1988	48,110	26,385	13,745	355	170	29,160	2,290	700	18,950	24,095	13,745	355	170	- 700	2,987.2	6,704.7	3,717.5	2.0	
1989	50,155	28,580	13,885	365	210	30,325	2,380	730	19,830	26,200	13,885	365	210	- 730	3,109.0	7,319.9	4,210.9	2.1	
1990	52,315	30,720	14,025	370	225	31,540	2,475	755	20,775	28,245	14,025	370	225	- 755	3,228.9	7,692.5	4,463.9	2.1	
1991	54,550	33,250	14,165	375	270	32,800	2,575	790	21,750	30,675	14,165	375	270	- 790	3,364.3	8,379.0	5,014.7	2.2	
1992	56,890	35,965	14,305	385	325	34,115	2,675	820	22,775	33,290	14,305	385	325	- 820	3,509.1	9,181.8	5,672.7	2.3	
1993	59,335	38,890	14,450	390	350	35,480	2,785	850	23,855	36,105	14,450	390	350	- 850	3,658.0	9,709.4	6,051.4	2.4	

KABUPATEN BOLAANG MONGGONDOW (With Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION			S U R P L U S						PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	MAIZE	COCONUT	COFFEE	CLOVE	PADDY	MAIZE	OTHERS	PADDY	MAIZE	COCONUT	COFFEE	CLOVE	OTHERS	MILLION Rp.	MILLION Rp.	MILLION Rp.	TRANS. COST	PRICE
1981	35,925	15,260	12,110	310	65	22,160	1,740	530	13,765	13,520	12,110	310	65	- 530	2,261.0	4,370.8	2,109.8	1.4	
1982	37,455	16,745	12,725	320	70	23,090	1,810	555	14,365	14,935	12,725	320	70	- 555	2,388.0	4,653.3	2,265.3	1.3	
1983	39,035	18,490	13,210	330	90	24,060	1,885	580	14,975	16,605	13,210	330	90	- 580	2,511.5	5,083.1	2,571.6	1.1	
1984	40,705	20,205	13,885	345	95	25,070	1,965	600	15,635	18,240	13,855	345	95	- 600	2,650.4	5,395.5	2,745.1	1.0	
1985	42,440	22,205	14,200	355	120	26,125	2,050	625	16,315	20,155	14,200	355	120	- 625	2,772.0	5,882.3	3,110.3	0.8	
1986	44,250	24,180	14,545	365	130	27,220	2,135	655	17,030	22,045	14,525	365	130	- 655	2,891.0	6,226.5	3,335.5	0.6	
1987	46,130	26,485	14,895	380	160	28,365	2,225	680	17,765	24,260	14,895	380	160	- 680	3,027.0	6,786.3	3,759.3	0.5	
1988	48,110	28,780	15,045	385	170	29,555	2,320	710	18,555	26,460	15,045	385	170	- 710	3,142.2	7,113.9	3,971.7	0.5	
1989	50,155	31,255	15,195	395	210	30,795	2,415	740	19,360	28,840	15,195	395	210	- 740	3,267.3	7,747.0	4,479.7	0.6	
1990	52,315	33,690	15,345	400	225	32,090	2,520	770	20,225	31,170	15,345	400	225	- 770	3,289.5	8,137.6	4,850.1	0.6	
1991	54,550	36,570	15,495	410	270	33,440	2,625	805	21,110	33,945	15,495	410	270	- 805	3,530.8	8,850.6	5,319.8	0.6	
1992	56,890	39,670	15,655	415	325	34,845	2,735	835	22,045	36,935	15,655	415	325	- 835	3,680.7	9,673.8	5,993.1	0.6	
1993	59,335	43,020	15,810	430	350	36,305	2,850	870	23,030	40,170	15,810	430	350	- 870	3,836.8	10,237.9	6,401.1	0.7	

KABUPATEN BONE

1. Transport cost reduction

- 101 Rps/ton.Km
- average transportation distance 7.5 Km
- cost reduction $101 \text{ Rps/t.Km} \times 7.5 \text{ Km} = 760 \text{ Rps/ton.}$

2. Agricultural production cost

- paddy 55,080 → 55,060 Rps/ton
- coconut 91,200 → 91,200 Rps/ton
- maize 25,700 → 25,620 Rps/ton

3. Farmgate production price increase

- paddy 90,000 → 90,760 Rps/ton
- coconut 115,000 → 115,760 Rps/ton
- maize 60,000 → 60,760 Rps/ton

4. Transport cost

- on improved road 59 Rps/ton.Km
- on non-improved road 160 Rps/ton.Km

5. Food Price

- cassava 90 Rps/Kg.

KANUPATIN BONTI
(without project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION				SURPLUS					PRODUCTION COST x 10 ⁶ Rps.	PRODUCTION PRICE x 10 ⁶ Rps.	PRODUCTION BENEFIT x 10 ⁶ Rps.	FOOD CONSUMPTION	
	paddy	cassava*	maize*	coconut	others	paddy	cassava*	maize*	others	paddy	maize*	coconut	others	TRANS. x 10 ⁶ Rps.				PRICE x 10 ⁶ Rps.	
																			TRANS. x 10 ⁶ Rps.
1981	108,475	7,380	16,945	16,640	880	36,620	12,145	2,870	880	66,430	14,075	16,640	-5,645	5,538	8,737	3,199	4	429	
1982	115,955	7,675	17,230	16,810	880	36,730	12,185	2,880	880	73,430	14,350	16,810	-5,330	5,947	9,404	3,457	4	406	
1983	124,150	7,985	17,510	16,980	885	36,840	12,220	2,890	885	81,100	14,620	16,980	-5,120	6,391	10,129	3,738	4	381	
1984	132,800	8,295	18,075	17,145	885	36,950	12,255	2,900	885	89,240	15,175	17,145	-4,845	6,869	10,914	4,045	4	356	
1985	142,020	8,635	18,360	17,315	890	37,060	12,295	2,910	890	97,860	15,450	17,315	-4,550	7,366	11,726	4,360	3	329	
1986	152,050	8,975	18,640	17,490	890	37,170	12,330	2,915	890	107,275	15,715	17,490	-4,245	7,998	12,609	4,701	3	302	
1987	162,670	9,335	19,205	17,665	895	37,280	12,365	2,925	895	117,235	16,280	17,665	-3,925	8,487	13,561	5,074	3	275	
1988	173,890	9,710	19,490	17,845	895	37,395	12,405	2,930	895	127,800	16,560	17,845	-3,590	9,093	14,348	5,455	3	243	
1989	186,150	10,095	19,770	18,020	900	37,505	12,440	2,940	900	139,335	16,830	18,020	-3,245	9,751	15,622	5,821	2	211	
1990	199,090	10,500	20,335	18,200	900	37,620	12,480	2,950	900	151,515	17,385	18,200	-2,880	10,451	16,789	6,336	2	178	
1991	211,530	10,920	20,615	18,385	905	37,730	12,515	2,960	905	163,225	17,655	18,385	-2,500	11,121	17,865	6,742	2	144	
1992	219,930	11,355	21,185	18,570	905	37,845	12,555	2,970	905	171,090	18,215	18,570	-2,105	11,584	18,626	7,042	2	108	
1993	228,630	11,805	21,465	18,755	910	37,960	12,590	2,975	910	179,240	18,450	18,755	-1,695	12,058	19,395	7,337	1	71	

KANWANTAN MONY
(with project)

YEAR	AGRICULTURAL PRODUCTION				LOCAL CONSUMPTION				SURPLUS				PRODUCTION COST		PRODUCTION PRICE		PRODUCTION MOUNT		FOOD CONSTRUCTION	
	paddy	cassava*	maize*	coconut	paddy	cassava*	maize*	others	paddy	maize*	coconut	others	PRODUCTION COST x 10 ⁶ Rps.	PRODUCTION PRICE x 10 ⁶ Rps.	PRODUCTION MOUNT x 10 ⁶ Rps.	PRODUCTION MOUNT x 10 ⁶ Rps.	TRANS COST x 10 ⁶ Rps.	PRICE x 10 ⁶ Rps.		
																			others	others
1981	106,475	7,380	16,943	16,640	36,620	12,145	2,870	860	66,430	14,075	16,640	-5,645	5,538	8,749	3,211	4	429			
1982	116,470	7,730	17,330	16,810	36,950	12,255	2,900	885	72,695	14,430	16,810	-5,430	5,962	9,471	3,509	4	407			
1983	124,980	8,110	18,010	16,980	37,280	12,365	2,925	895	81,450	15,085	16,980	-5,150	6,420	10,260	3,840	3	383			
1984	134,290	8,500	18,400	17,145	37,615	12,480	2,950	900	89,960	15,450	17,145	-4,880	6,913	11,088	4,175	2	358			
1985	146,160	8,910	18,800	17,315	37,955	12,590	2,975	910	98,995	15,825	17,315	-4,590	7,435	11,921	4,516	2	311			
1986	154,990	9,330	19,500	17,490	38,295	12,705	3,005	920	108,945	16,495	17,490	-4,295	8,018	12,915	4,897	2	304			
1987	166,470	9,790	19,910	17,665	38,640	12,820	3,030	925	119,505	16,880	17,665	-3,945	8,623	13,916	5,293	2	273			
1988	179,000	10,270	20,320	17,845	38,990	12,935	3,055	935	131,060	17,265	17,845	-3,600	9,286	15,010	5,724	2	240			
1989	191,920	10,750	21,040	18,020	39,340	13,050	3,085	945	142,985	17,955	18,020	-3,245	9,976	16,154	6,178	2	207			
1990	206,410	11,280	21,460	18,200	39,695	13,165	3,115	950	156,395	18,345	18,200	-2,835	10,745	17,436	6,671	2	170			
1991	215,800	11,820	22,190	18,385	40,050	13,285	3,140	960	164,960	19,050	18,385	-2,425	11,247	18,337	7,010	1	132			
1992	224,830	12,390	22,625	18,570	40,410	13,405	3,170	970	173,180	19,455	18,570	-1,985	11,727	19,050	7,323	1	91			
1993	234,230	12,970	23,370	18,755	40,775	13,525	3,200	975	181,745	20,170	18,755	-1,530	12,234	19,891	7,657	1	50			

KABUPATEN BUTON

1. Reduction of transport cost

- 170 Rps./ton.km.
- Average transport distance 20.25 km.
- Cost reduction $170 \text{ Rps./ton.km} \times 20.25 \text{ km} = 3,443 \text{ Rps./ton.}$

2. Agricultural production cost

- Cassava	21,380	→	21,380	Rps./ton
- Maize	25,700	→	25,350	Rps./ton
- Coconut	91,200	→	91,200	Rps./ton
- Coffee	138,000	→	138,000	Rps./ton

3. Farmgate price

- Cassava	40,000	→	43,440	Rps./ton
- Maize	60,000	→	63,440	Rps./ton
- Coconut	115,000	→	118,440	Rps./ton
- Coffee	960,000	→	963,440	Rps./ton

4. Transport cost

- On improved road 59 Rp./ton.km
- On non-improved road 229 Rp./ton.km

5. Market price of consumption

- Rice	225	Rps./kg
- Cassava	90	Rps./kg
- Maize	175	Rps./kg

KABUPATEN BUTON (Without Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION				S U R P L U S					PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	CASSAVA	MAIZE	COCONUT	COFFEE	PADDY	CASSAVA	MAIZE	OTHERS	CASSAVA	MAIZE	COCONUT	COFFEE	OTHERS	MILLION Rps.	MILLION Rps.	MILLION Rps.	TRANS. COST	PRICE
1981	9,235	69,245	11,125	2,960	90	28,155	9,340	2,205	675	59,905	8,920	2,960	90	- 12,975	1,792.4	3,327.6	1,535.2	60.2	2,724.5
1982	9,890	74,220	11,570	2,980	90	28,210	9,360	2,210	676	64,860	9,360	2,980	90	- 12,400	1,911.5	3,585.1	1,673.6	57.5	2,638.1
1983	10,595	79,370	12,035	3,015	100	28,270	9,375	2,215	675	69,935	9,820	3,015	100	- 12,000	2,023.8	3,831.7	1,807.9	55.6	2,548.1
1984	11,315	85,065	12,515	3,045	100	28,325	9,395	2,220	680	75,670	10,295	3,045	100	- 11,565	2,160.1	4,090.7	1,930.6	53.6	2,449.5
1985	12,105	91,090	13,010	3,075	100	28,380	9,415	2,225	680	81,675	10,785	3,075	100	- 11,095	2,303.8	4,363.7	2,059.9	51.5	2,343.6
1986	12,955	97,580	13,535	3,105	105	28,440	9,435	2,230	680	88,145	11,305	3,105	105	- 10,590	2,458.3	4,662.0	2,203.7	49.1	2,229.8
1987	13,850	104,555	14,075	3,140	105	28,495	9,450	2,230	685	95,105	11,845	3,140	105	- 10,055	2,624.1	4,976.8	2,352.7	46.6	2,108.9
1988	14,830	111,900	14,640	3,170	110	28,550	9,470	2,235	685	102,430	12,435	3,170	110	- 9,465	2,797.8	5,311.7	2,513.9	43.9	1,975.7
1989	15,860	119,905	15,225	3,205	110	28,610	9,490	2,240	685	110,415	12,935	3,205	110	- 8,845	2,986.7	5,669.9	2,683.2	41.0	1,836.0
1990	16,975	128,325	15,835	3,230	115	28,665	9,510	2,245	685	118,815	13,590	3,230	115	- 8,165	3,200.0	6,049.9	2,849.9	37.9	1,683.4
1991	18,175	137,500	16,470	3,265	115	28,725	9,530	2,250	690	127,970	14,220	3,265	115	- 7,440	3,415.1	6,457.9	3,042.8	34.5	1,519.2
1992	19,440	149,680	17,125	3,300	115	28,780	9,545	2,255	690	140,135	14,870	3,300	115	- 5,975	3,679.2	6,987.5	3,308.3	27.7	1,345.0
1993	20,795	157,635	17,810	3,330	120	28,840	9,565	2,260	690	148,070	15,550	3,330	120	- 5,840	3,869.1	7,354.0	3,484.9	27.1	1,158.5

KABUPATEN BUJON (With Project)

YEAR	AGRICULTURAL PRODUCTION					LOCAL CONSUMPTION				S U R P L U S					PRODUCTION COST	PRODUCTION PRICE	PRODUCTION BENEFIT	FOOD CONSUMPTION	
	PADDY	CASSAVA	MAIZE	COCONUT	COFFEE	PADDY	CASSAVA	MAIZE	OTHERS	CASSAVA	MAIZE	COCONUT	COFFEE	OTHERS	MILLION Rps.	MILLION Rps.	MILLION Rps.	TRANS. COST	PRICE
1981	9,235	69,240	11,125	2,960	90	28,155	9,340	2,205	675	59,900	8,920	2,960	90	- 12,785	1,792.0	3,377.8	1,585.8	55.8	2,724.5
1982	9,890	74,395	11,780	3,035	95	28,215	9,360	2,210	675	65,035	9,570	3,035	95	- 12,405	1,925.5	3,682.7	1,757.2	46.8	2,638.8
1983	10,575	80,015	12,450	3,115	100	28,275	9,380	2,215	675	70,635	10,235	3,115	100	- 12,005	2,069.6	4,015.2	1,945.6	38.3	2,548.8
1984	11,315	86,050	13,140	3,195	100	28,335	9,400	2,220	680	76,650	10,920	3,195	100	- 11,570	2,222.4	4,365.9	2,143.5	30.6	2,450.9
1985	12,105	92,460	13,860	3,275	105	28,390	9,420	2,225	680	83,040	11,635	3,275	105	- 11,100	2,384.5	4,750.1	2,365.6	22.8	2,345.0
1986	12,955	99,485	14,590	3,355	110	28,450	9,440	2,230	680	90,045	12,360	3,355	110	- 10,595	2,560.0	5,169.9	2,609.9	15.6	2,231.3
1987	13,850	106,900	15,355	3,430	110	28,510	9,460	2,235	685	97,440	13,120	3,430	110	- 10,065	2,743.9	5,577.7	2,833.8	12.0	2,111.0
1988	14,830	114,980	15,995	3,465	115	28,570	9,480	2,240	685	105,500	13,755	3,465	115	- 9,480	2,936.2	5,977.1	3,040.9	11.3	1,978.6
1989	15,860	123,615	16,670	3,500	120	28,630	9,500	2,240	685	114,415	14,430	3,500	120	- 8,855	3,147.6	6,416.2	3,268.6	10.6	1,838.9
1990	16,975	132,885	17,370	3,535	120	28,690	9,515	2,245	685	123,370	15,125	3,535	120	- 8,180	3,360.0	6,853.4	3,493.4	9.8	1,687.0
1991	18,175	142,860	18,095	3,575	120	28,750	9,535	2,250	690	133,325	15,845	3,575	120	- 7,460	3,594.8	7,336.3	3,741.5	8.9	1,522.8
1992	19,440	153,530	18,855	3,610	125	28,810	9,555	2,255	690	143,975	16,600	3,610	125	- 6,685	3,845.5	7,855.9	4,010.4	8.0	1,349.3
1993	20,795	165,070	19,650	3,645	130	28,875	9,580	2,260	690	155,490	17,390	3,645	130	- 5,860	4,115.6	8,415.2	4,299.6	7.0	1,163.5

