

J. Indragiri River Integrated Development Program

1. Background

417. Riau Province, an eastern side of Central Sumatra, lies astride the equator and faces Malaysia and Singapore across the Malacca Straits. The province covers an area of 94,562 km², of which about 50% comprises recently formed coastal swamp and deltaic islands. The population of the province in 1986 was about 2.74 million. The economy of Riau Province has been led by oil production, which accounts for about 55% of the national output. The oil production has contributed much to raise the GDP and to earn foreign currency of the country. However, this benefit is not fully enjoyed by the Region and the non-oil per capita GDP of the province is less than 20% of the per capita GDP including oil. The share of Riau Province to the country's GDP is presented in Figure 47.

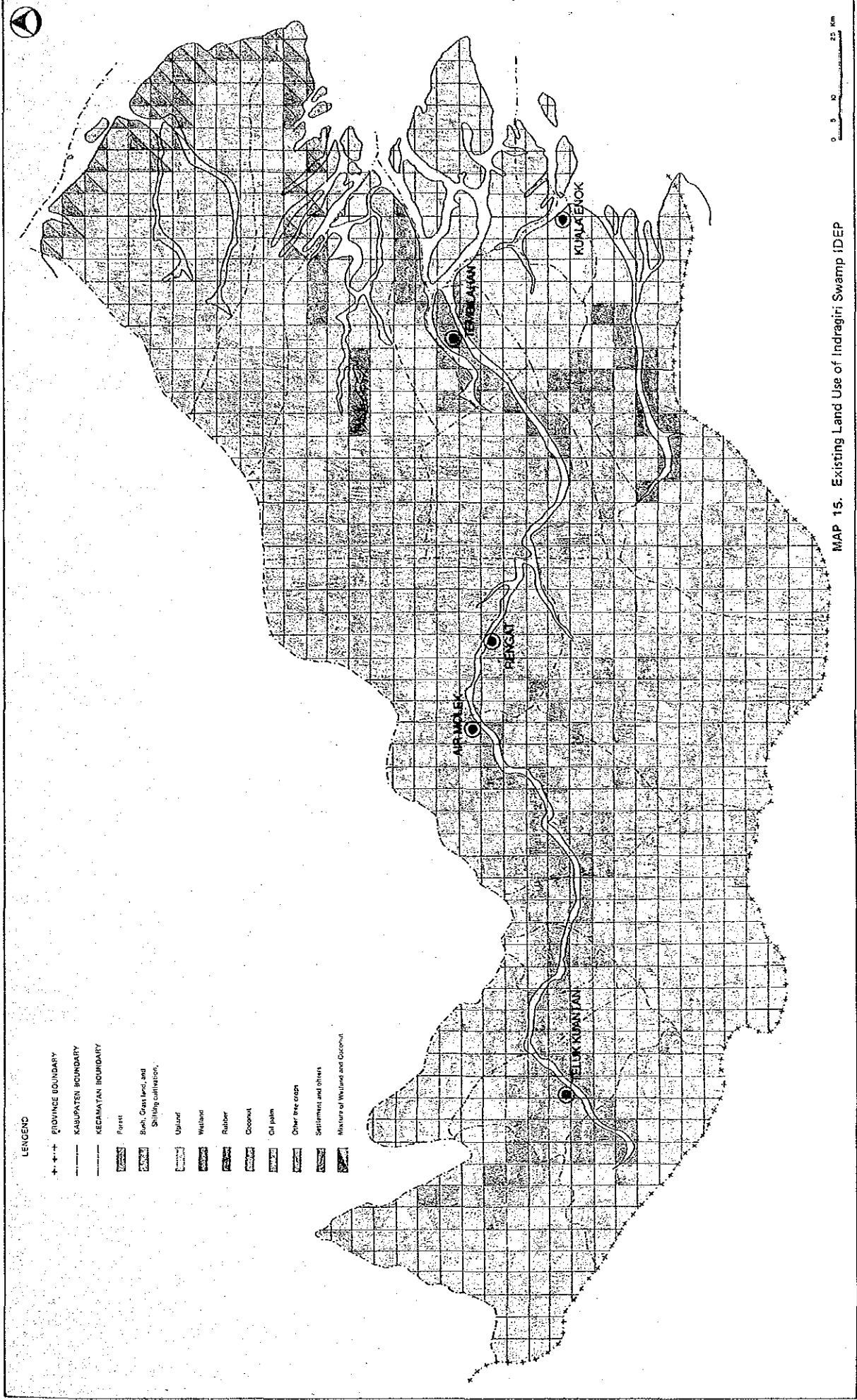
418. The contribution of the agriculture sector of the province to the non-oil GDP is about 28% (1988), while 53% of the households is engaged in agriculture. The principal agricultural commodities are estate crops such as coconut, rubber, palm oil and the province is the second largest producer of coconut in the country (nearly 10% of the total production). However, the province has not yet attained to self-sufficiency of rice. Fishery is active endowed with rich fish resources on the South China Sea and geographical advantage to Singapore. Development potentials for fish culture are also high. The manufacturing sector mainly consists of industries which process natural resources such as petroleum refineries, palm oil mills, saw mills, plywood factories and alumina plant. Aside from the oil sector and the industrial complex in the Batam island, the economic structure of the province is at a rudimentary level.

419. The province has been one of recipients of organized transmigrants from Java. About 57,000 families had migrated in the province during the period from 1969/70 through 1986/87. The proposed Indragiri River IDEP area is situated on the southern part of the province and falls in Kabupaten (Regency or District) Indragiri Hulu and Indragiri Hilir. The two regencies are least developed districts in the province in terms of per capita regional income and are provided with few infrastructures to support productive sectors and to raise the living standard of people. This situation mainly comes from the fact that the land is habitually flooded, the soil is not suitable for traditional agricultural practice or accessibility is poor.

420. Geographically, the area is characterized by its large swampy lowland which is mainly drained by the Indragiri river. The land of Indonesia involves a vast area of swamp in Sumatra, Kalimantan and Irian Jaya. For the past 20 years, the Government has made great efforts to reclamation of swampy land in many locations, mainly aiming at agricultural production. In this IDEP area, similar trials have also been undertaken. The Indragiri river which is an interprovincial river for West Sumatra and Riau has a great potential for water resources development.

421. The proposed Indragiri River IDEP was selected in light of the following objectives, taking advantage of its diverse potential natural resources on the vast land and closer location to the international market:

- (i) Food stuff production base in the province



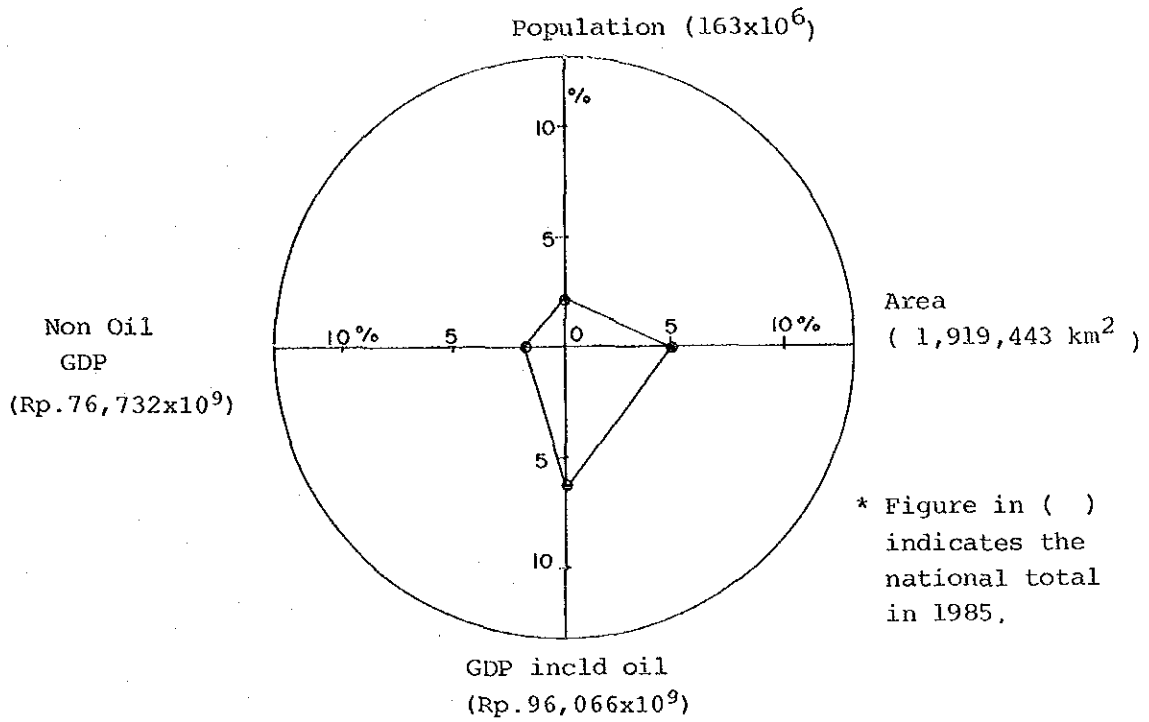


Fig. 47. Share of Riau Province to Indonesia

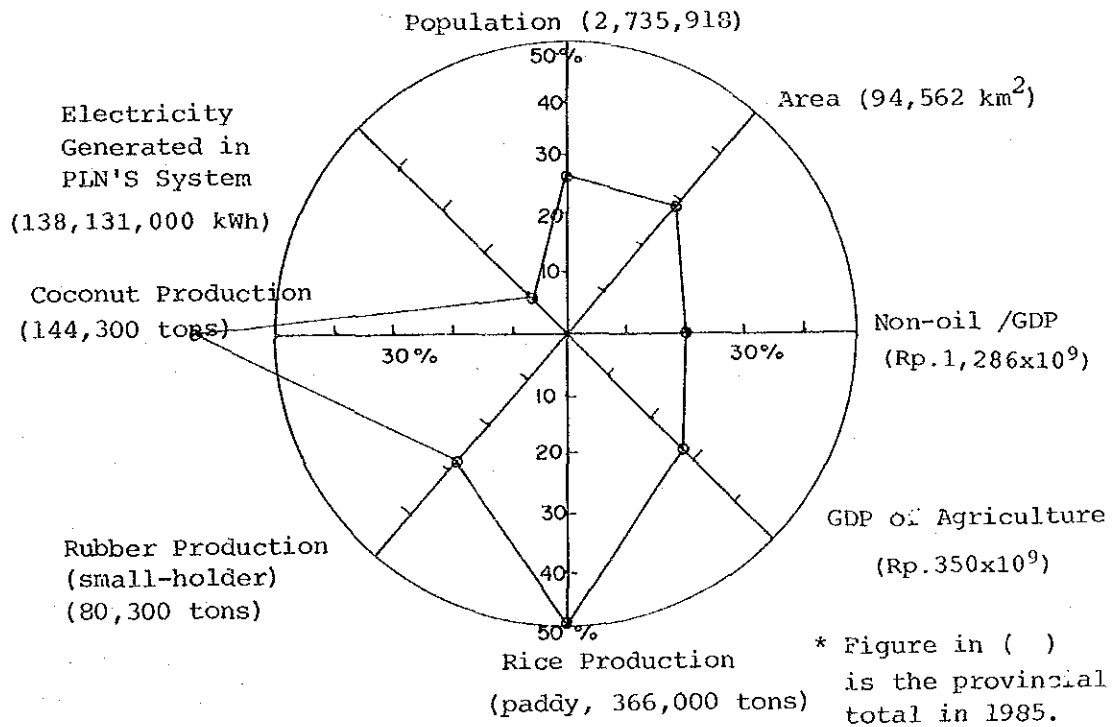


Fig. 48. Share of Indragiri River IDEP to Riau Province

- (ii) Export-oriented industry including timber, agro-product and agro-processed industries
- (iii) Intermediate function on international and domestic marketing routes
- (iv) Enhancement of socio-economic development for transmigrants as well as indigenous people
- (v) Development of swamp areas for multiple use

The socio-economic overview of the IDEP area is shown in Figure 48.

2. Program Area

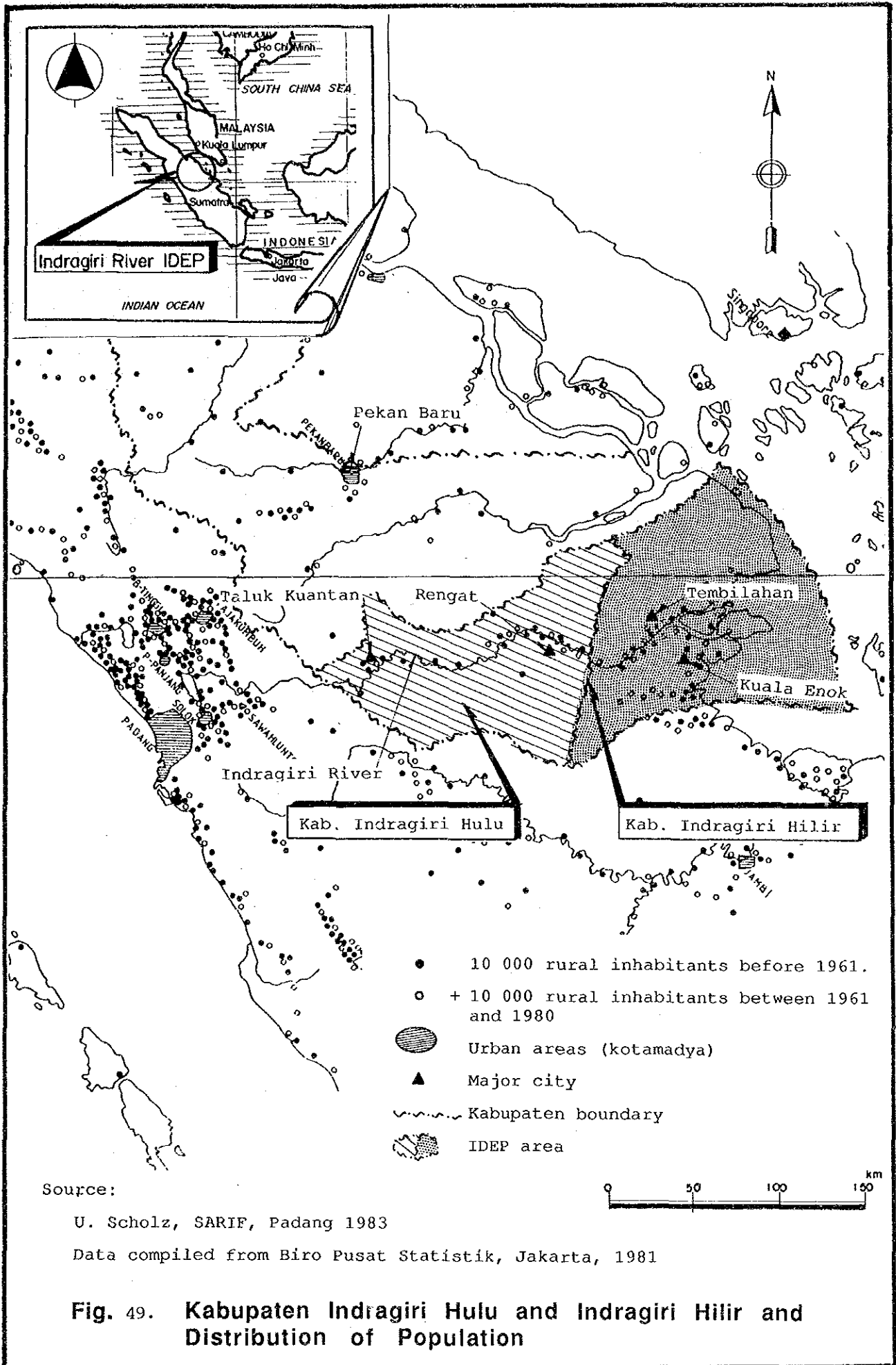
422. The proposed IDEP area is located in the southern part of Riau Province and borders on West Sumatra and Jambi Province as shown in Figure 49. The annual rainfall of the area is in a range of 2,000 to 3,000 mm, being less towards the coastal line. In the center of the proposed area, the Indragiri (Kuantan) river, originating on West Sumatra, flows eastwards as given in Figure 50. The river drains an area of 19,000 km² and the annual runoff yield is approximately 20,500 million m³ or 650 m³/s on average. The general features of the meteorological conditions are presented in Figure 51.

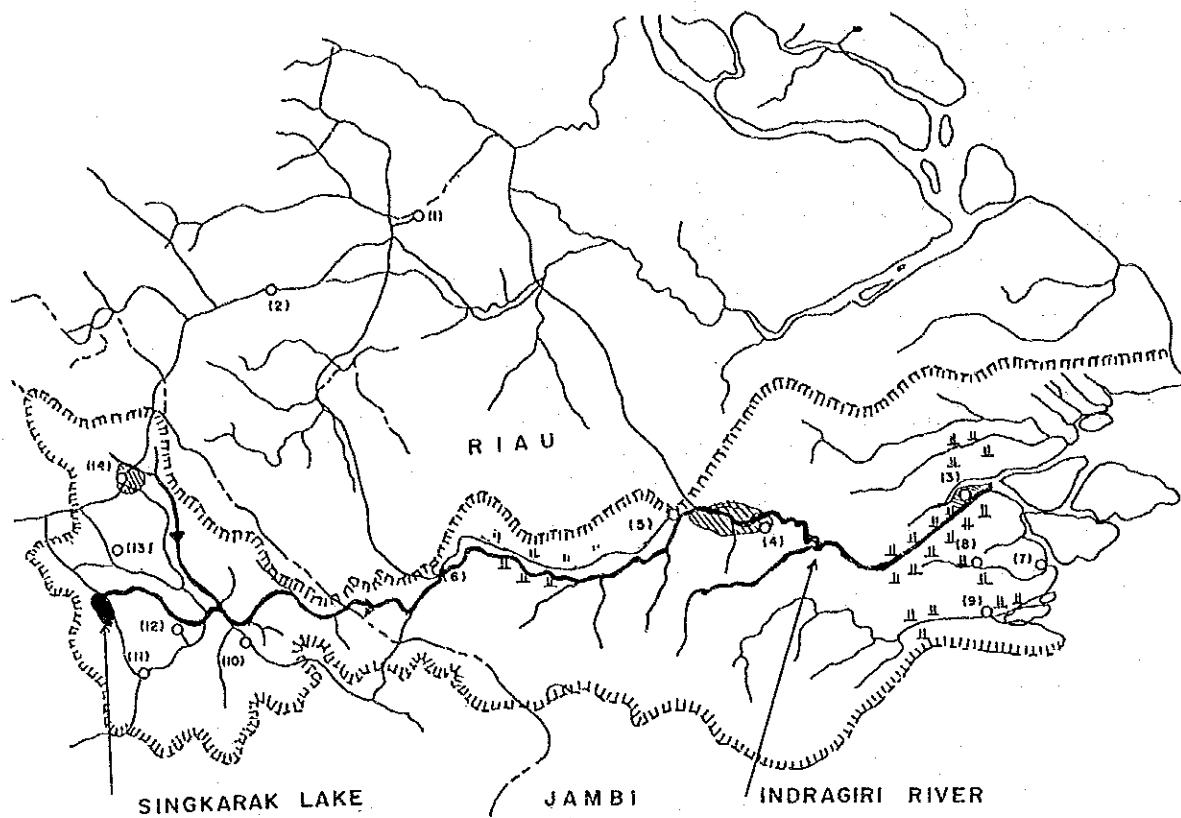
423. There are two regional service centers in the area; one is Rengat and the other is Tembilahan, both of which are the kabupaten capital located on the river side. The area has a locational advantage because the eastern arterial road will pass through the area in future and the distance to Singapore is approximately 200 km.

424. The proposed IDEP area covers 27,460km² and has a population of 753,000 in 1988; 328,000 in Regency Indragiri Hulu and 425,000 in Indragiri Hilir. This total population accounts for 27% of the provincial total. The population is sparse, the density being 20 persons/km² in Indragiri Hulu and 37 persons/km² in Indragiri Hilir. As presented in Figure 49, people inhabit along the rivers or on the coast sporadically. The population in this area is projected to grow to 1.23 million in 2008.

425. The land of the proposed IDEP area is largely classified into two types; the peat swamp downstream of Air Molek or Rengat and the low undulating hill and terrace in the upstream reaches. Most of the forest area in Indragiri Hilir is now designated to be convertible for cultivation. The coastal zone on marine alluvium is covered with tidal forest inclusive of mangrove, nipah and nibung palm. The forest in the inner land is limited or restricted production forest, some of which are converted into rubber or oil palm plantation. The land use in the IDEP area is given in Table 64.

426. Indragiri Hilir produces about 37% of rice and 64% of coconut of the provincial output, and Indragiri Hulu produces 28% of rubber. Paddy fields exist along the rivers, mainly in the subdistrict of Keritang, Retih, Gaung Anak Serka and Tembilahan, most of which are classified as tidal irrigation scheme (32,000 ha functional of 63,600 ha). Behind the tidal irrigation schemes, coconut plantation is usually seen. Conventional irrigated fields extend along the Indragiri river between Teluk Kuantan and Rengat (5,300 ha functional of 19,400 ha). In the coastal swampy zone, new steps have been taken for producing hybrid





Legend:

- | | | | |
|-----------|-----------------------|------|--------------------|
| ----- | : Provincial boundary | ○ | : Major City/Town |
| - - - - - | : Basin boundary | ▲ | : Dam site |
| ————— | : Major Road | — | : Paddy field |
| | | ▨ | : Flood prone area |
| (1) | : Pekan Baru | (9) | : Pulau Kijang |
| (2) | : Bangkinang | (10) | : Sijunjung |
| (3) | : Tembilahan | (11) | : Solok |
| (4) | : Rengat | (12) | : Sawahlunto |
| (5) | : Air Molek | (13) | : Batusangkar |
| (6) | : Taluk Kuantan | (14) | : Payah Kumbuh |
| (7) | : Kuala Enok | | |
| (8) | : Enok | | |

Fig. 50. Indragiri River Basin

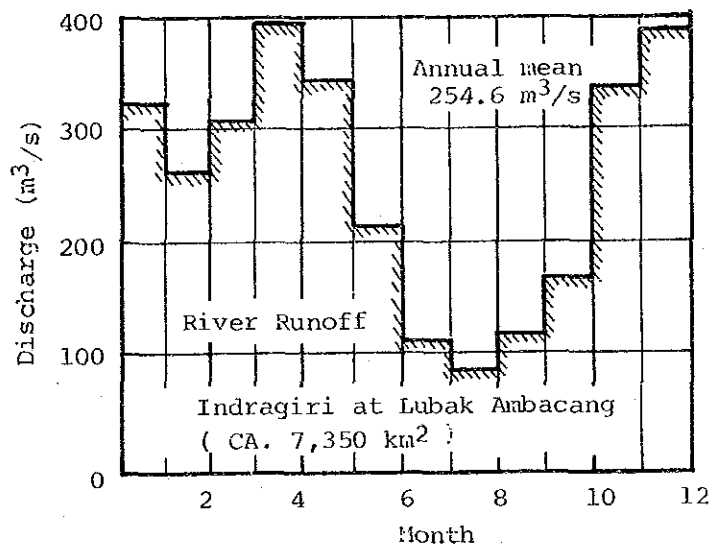
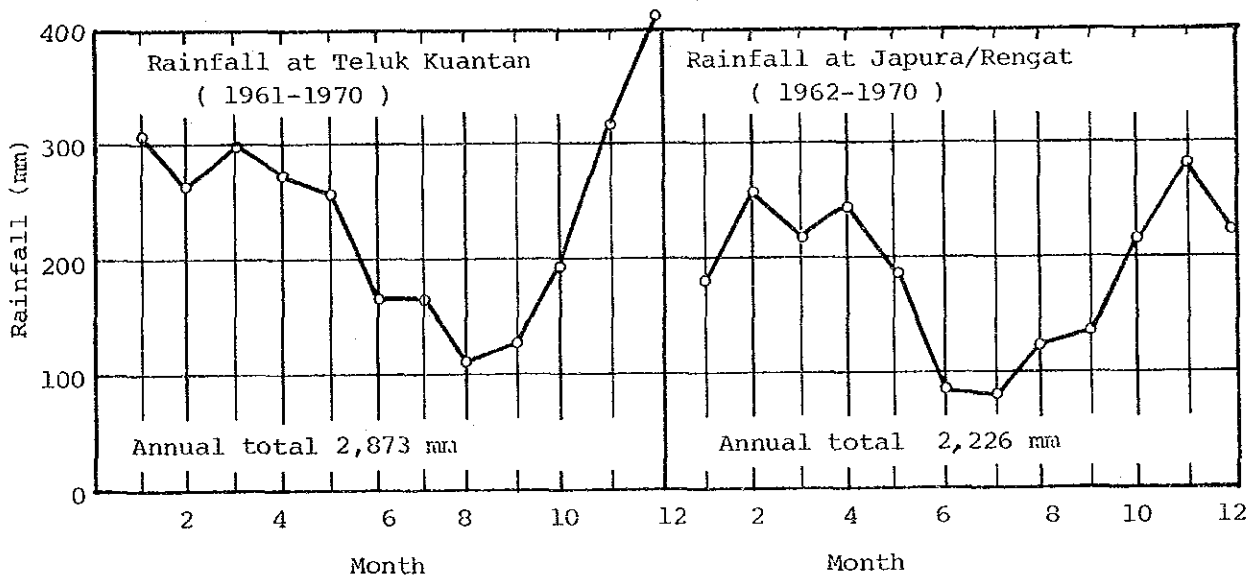
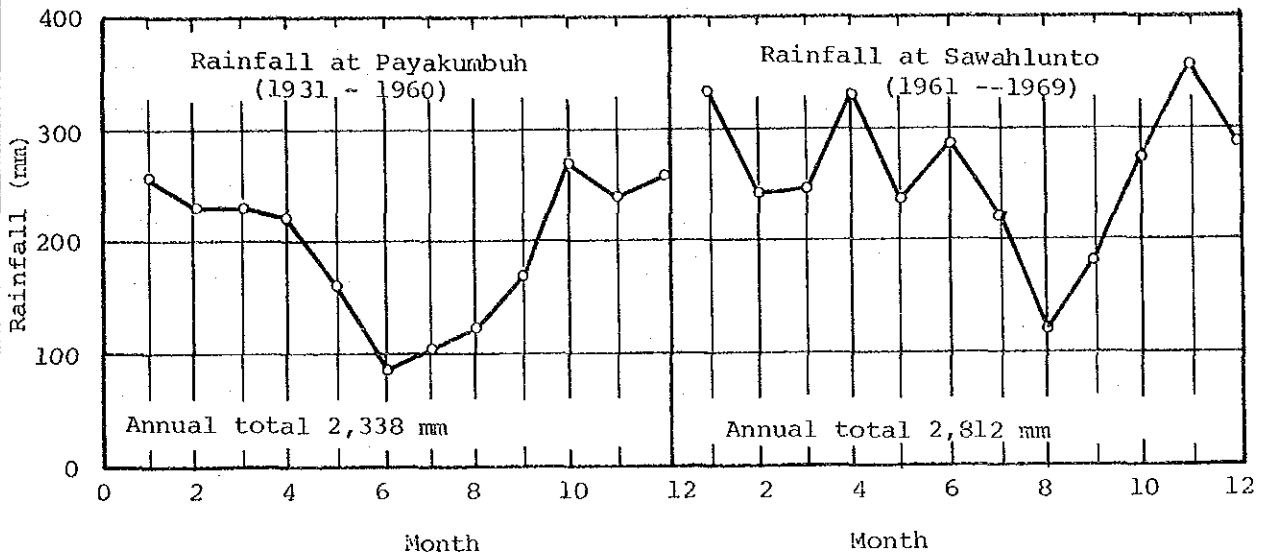


Fig. 51. Meteo-hydrological Conditions of Indragiri River Basin

Table 64. Land Use in IDEP Area

(unit: ha)

Land Use	Indragiri Hulu	Indragiri Hilir	Total
1. House, Garden	28,273	48,227	76,500
2. Permanent dryland	30,871	146,212	177,083
3. Shift cultiv.	7,269	4,345	11,614
4. Grass land	2,172	0	2,172
5. Dykes	0	133	133
6. Ponds	1,179	348	1,527
7. Temp. Fallow	30,211	84,928	115,139
8. Private/Commun. woodland	263,954	34,919	298,873
9. Gov't and priv. estates	181,264	0	181,264
Total dryland	585,851	319,112	904,963
10. Irrigated field	1,960	4,986	6,946
11. Rainfed field	10,589	2,057	12,646
12. Tidal irrigation	178	62,623	62,801
13. Others	12,468	23,548	36,016
Total wetland	25,195	93,214	118,409

Source: BPS, Land Area by Utilization in Outer Java, 1987.

coconuts. In order to support the smallholder estate crops, the World Bank's assisted STDP (Smallholder Tree Crops Development Project) is also introduced in this area. The area is also emerging as one of the province's important palm oil plantations to be linked to its processing at Batam. Presently, medium and large industries to be noted in the area are coconut oil processing (19 factories), followed by sawmills (15) and rubber factory(1). In these industries, about 3,600 people are engaged. There are about 1,300 units of small and home industries, where 3,460 people are engaged. A prospective coal mine reserves is identified at Peranap near Cerenti, whose exploratory survey is underway since 1986 under the cooperation of the Government of Japan. These reserves is estimated at more than 2 billion tons, which might be highlighted as fuel necessary for the secondary recovery of oil at Duri (7 million tons of coal required annually for producing steam).

427. The Indragiri river has contributed much to navigation service for riverine people and transport of commodities and products. Speed boats accommodating 20 passengers make frequent service with a maximum speed of 40 to 50km/hour. Large vessels of a few hundred tons can reach to Rengat, though limited only during the high flow season. However, heavy sedimentation in the river has aggravated the navigation function with time and a new port is being build at Kuala Cinaku about 20 km downstream of Rengat. The river is influenced by sea tide, whose variation culminates to 4 to 5m at Tembilahan.

428. Road linkage in the area is still poor. A new road is being built along the river between Rengat and Tembilahan. Access to this area from Pekanbaru will be much improved soon after the road via Soreksatu (originally oil road) is opened for public use. There is a

plan to extend the road link to the sea port at Kuala Enok. Air access to Rengat is possible from Pekanbaru, Batam, Medan and Palembang. Transport network of the area is given in Figure 52.

429. Due to high intensity of rainfall in the upstream reaches and low topography of the land, the area is frequently flooded by river water, especially in an around Rengat. The river course is quite unstable due to meandering and scouring effects. People in the coastal zone have great difficulty to obtain safe potable water and some people take rain water for drinking use because water is contaminated by peat soils or saline water. Ground water of good quality is obtained only where extracted from deep wells of more than 250m in depth. Electrification rate in the area remains quite low and telecommunication system is quite poor.

3. Development Potentials and Constraints

430. The followings are considered as development potentials of the proposed area.

- (i) Vast land with sparse population (also becomes a constraint),
- (ii) Abundant natural resources such as water, mineral (coal and peat) and forest,
- (iii) Locational advantage to international and domestic market and intermediate function on the eastern arterial road in future.
- (iv) Availability of transport system of different modes
- (v) High development potentials for estate/tree crops
- (vi) High development potentials for aquaculture in brackish and fesh water ponds
- (vii) High development potentials for agro-processing industry

On the contrary, there are observed some constraints. They are:

- (i) Frequent inundation by flood and poor drainage
- (ii) Unstable river morphology and heavy siltation
- (iii) Intrusion of saline water to cultivated land and drinking water
- (iv) Soil acidity influenced by peat and unconsolidated soil foundation
- (v) Insufficient infrastructures such as electricity, water supply, transport and telecommunication system

4. Development Goals and Strategies

431. Development goals to be attained in this IDEP will be that the area be more productive for raising more income and generating employment opportunity with the maximum utilization of potentials and advantages supported with necessary infrastructures, and further people be more satisfied with basic human needs towards the end of 20th century and beyond. Further, the area should also offer a model for integrated swamp development , taking into full account the past

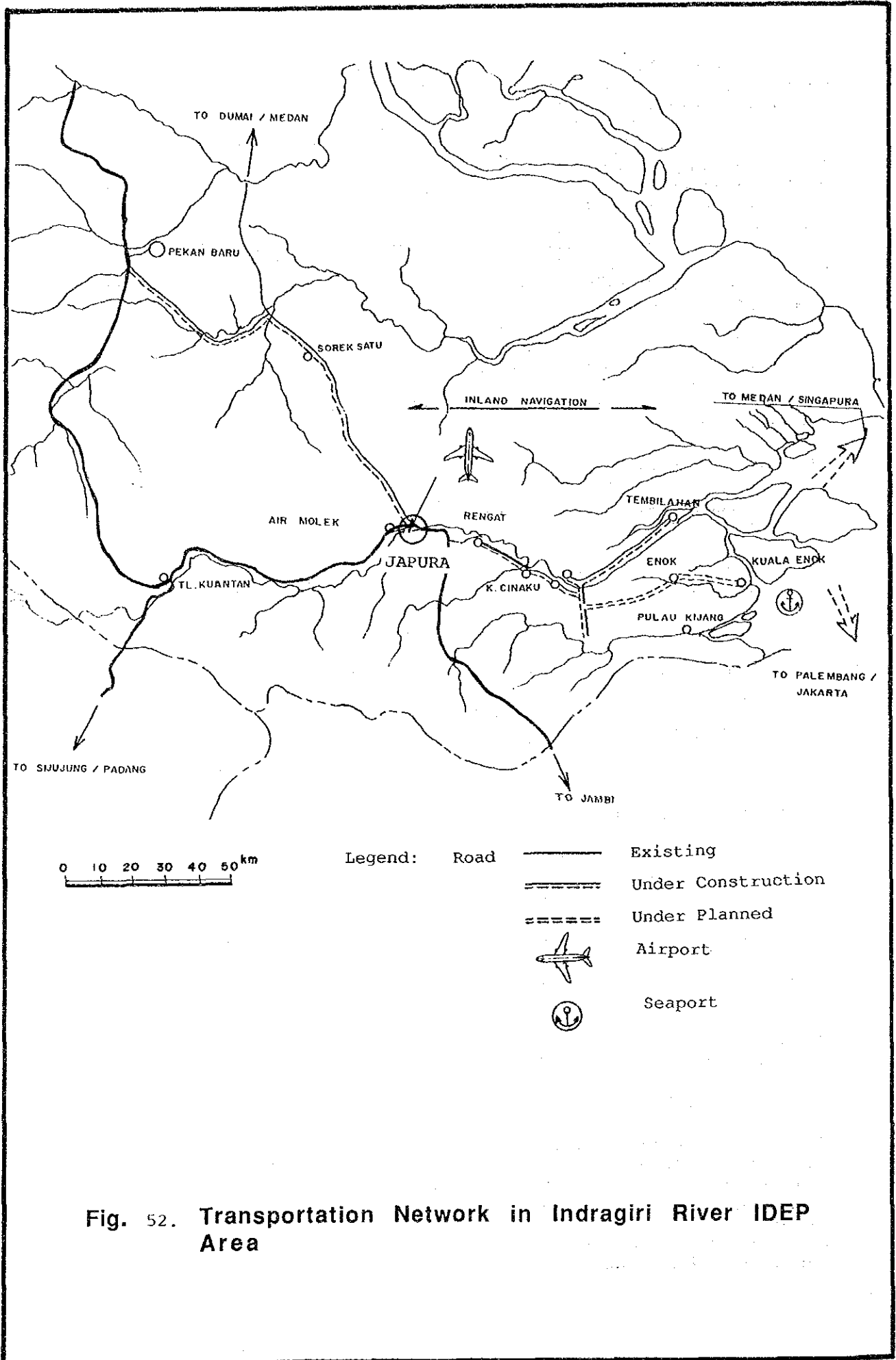


Fig. 52. Transportation Network in Indragiri River IDEP Area

performances of swamp reclamation in other areas, and for management of water resources in the interprovincial river basin.

432. The development strategies to achieve the above goals are:

- (i) to sustain the area as a major rice production base in the province and to improve the dryland farming system
- (ii) to support the smallholders' activities in estate/tree crops
- (iii) to promote the aquaculture in fresh and brackish water ponds
- (iv) to safeguard the settlements, strategic and service centers or productive cultivated lands from recurrent flood risks, and to further enhance the land productivity
- (v) to establish the most effective transport system of different modes
- (vi) to provide basic infrastructures such as water supply, drainage, energy, transport and communication, etc.
- (vii) to proceed to make research and study for the short- and long-term swamp development in a harmonious way between productive uses and conservation of swamp forests and mangroves

The development concept of the Indragiri River IDEP is given in Figure 53.

5. Identified Projects and Phasing

433. Based on the above goals and strategies, some 40 projects and programs are elaborated as given in Table 65.

6. Selection of Priority Projects with Reasoning

434. In light of the requirements for urgency, quick yielding and long term perspectives, the following projects and programs are identified with high priority.

Productive Sector:

(1) Dryland Farming Development (A-53):

This project is selected to raise the income of farmers, who are engaged in dryland farming mainly in Indragiri Hulu, through the following measures.

- Establishment of extension centers, seed multiplication facilities and demonstration farms, where necessary
- Effective cropping systems, mainly involving palawija and horticultural crops
- Post-harvest technology and marketing development
- Application to transmigration areas in Indragiri Hulu and Indragiri Hilir

(2) Paddy Post-Harvest Technology Development (A-54):

For sustaining the rice production in the area, this project is quite important.

(3) Livestock Development (Model Unit) (A-55):

For encouraging the agricultural economy particularly in Indragiri Hulu, this project is essential.

(4) Aquaculture Development (A-59, 60, 62, 63):

In the IDEP area, brackishwater shrimp pond, giant freshwater prawn pond and coastal water management will be key projects for fishery.

(5) Re/Afforestation Development (H-14):

Some critical areas needs reforestation urgently from the environmental aspect as well as from the sustainable production.

(6) Cerenti Coal Resources Development (C-6):

Following the current survey, a feasibility study is needed to confirm the marketability, including a study on its transportation mode.

(7) Marketable Handicraft Products (D-4)

Handicraft products utilizing woods should be promoted to increase the people's income especially in Indragiri Hulu.

Infrastructure:

(1) Kuantan/Indragiri Basin Overall Development (B-66):

For water supply, flood control, irrigation, hydropower development, a basinwide comprehensive plan should be established with due attention to the water management system of the interprovincial river basin.

(2) Integrated Transport System Development (F-57):

An integrated transportation plan of different traffic modes should be established for providing more effective transport infrastructure in future and for transporting export-oriented commodities.

(3) Sumatra East Coast Road Development (F-3):

In order to narrow the economic gap in the area, earlier upgrading of the eastern coast road is very important.

(4) Integrated Swamp Development (B-67):

An integrated swamp development plan for multiple-use of the land will become a key to the long range development of the area.

(5) Fuel Efficient Stove Dissemination (E-1):

In order to improve the living standard of the people and to make a contribution to prevent excessive deforestation, implementation of this project should be made throughout the Region.

(6) Rural Electrification Program (E-2):

Electrification rate should be raised to improve the living standard of people and to encourage small or cottage industries.

(7) Introduction of Rural Telecommunications (G-4):

Earlier introduction of telecommunication systems is awaited.

(8) South Riau Digital Microwave System Project (G-49):

To introduce a terrestrial transmission network in order to expand communication and to make communication more reliable.

435. Interrelation of the above core projects in the IDEP is presented in Figure 54. This figure shows a relationship between infrastructures and productive sectors with view to objectives of the IDEP.

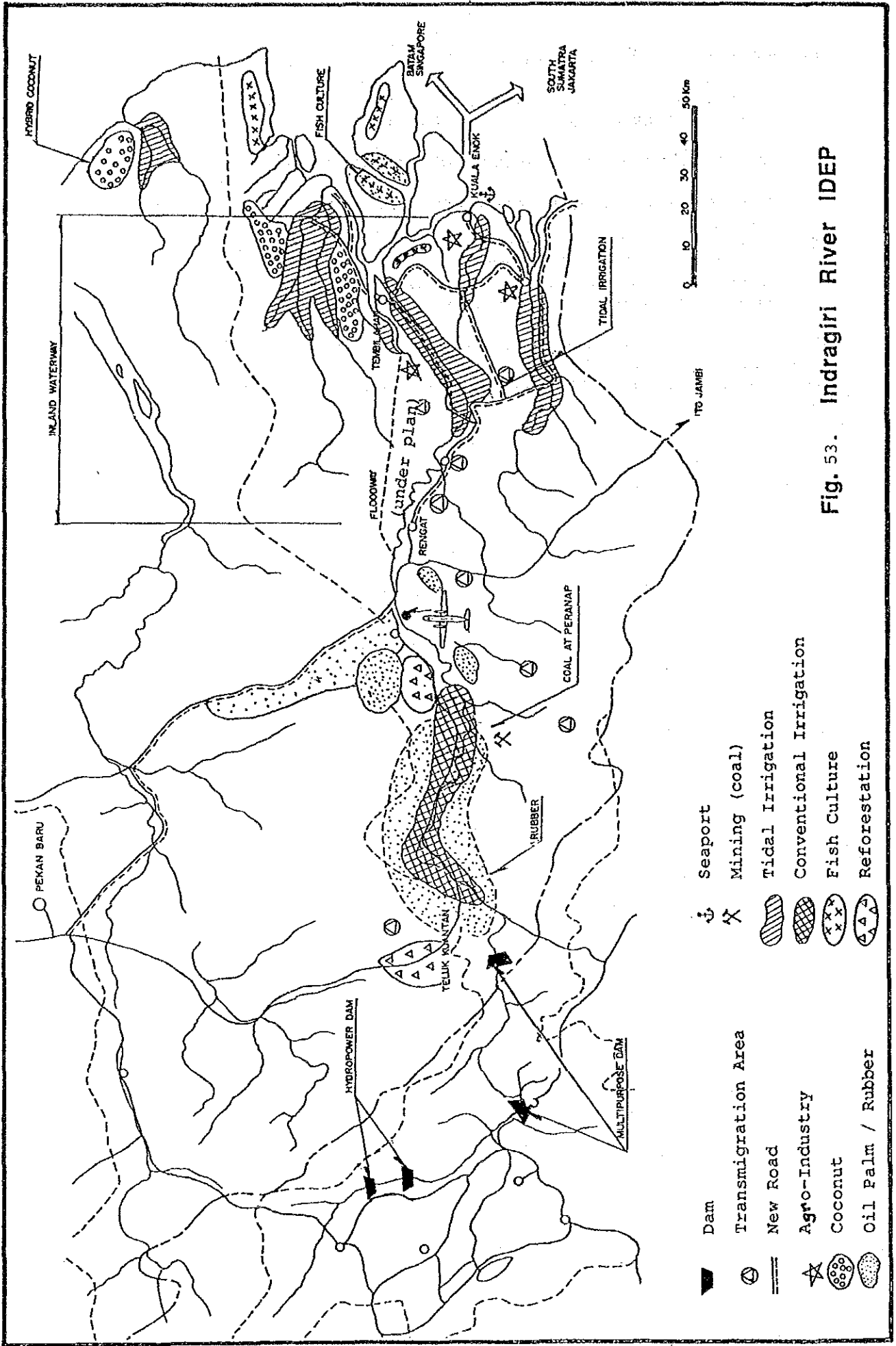


Fig. 53. Indragiri River IDEP

Table 65. Indragiri River IDEP Project List

P-10 Indragiri River															
Code	Project	REPELITA V					REPELITA VI					REPELITA VII & VIII	High Priority	GFS	Pub Inv Rep. V (US\$M)
		89	90	91	92	93	94	95	96	97	98	1999 - 2008			
I. Productive Sectors															
A-53	Dryland Farming Development				--	++	++	++	++	++	++	+++++	0	0	0.5
A-54	Paddy Post-Harvest Technology Development	--	++	++	++	++	++					0	0	1.0	
A-55	Livestock Development (beef cattle)			--	++	++	++	++	++	++	+++++	0	0	0.5	
A-56	Smallholder Coconut Development					++	++	++	++	++	+++++				
A-57	Smallholder Rubber Development			++	++	++	++	++	++	++	+++++				
A-58	Nucleus Estate and Smallholder Development					++	++	++	++	++	+++++				
A-59	Brackish Water Aquaculture Development					--	--	++	++	++	+++++				
A-60	Brackish Water Aquaculture Intensification										+++++				
A-62	Mariculture Development	--	--	--	++	++	++					0	0*	3.0	
A-63	Freshwater Prawn Culture Development					--	--	++	++	++	+++++				
C- 6	Cerenti Coal Resources Development		--	--	++	++	++	++	++	++	+++++			2.2	
C- 7	Peat Energy Resources Development					--	--	--	--	--	+++++				
C- 8	Rare Metal Resources Development			--	--	++	++	++	++						
D- 4	Dev. of Marketable Handicraft Products	--	++	++								0	0*	0.4	
D-65	Agro-Industries			--	++	++						0	0*		
D-68	Wood/Rattan Processing Industries				--	++	++								
D-69	Fishery/Aquaculture-Related Industries					--	++	++	++	++	+++++				
D-70	Livestock-Related Industries			--	++	++	++	++							
D-78	Light Engineering Industries	--	++	++	++	++									
H-13	Natural Forest Management System					--	++	++							
H-14	Re/Afforestation Development	--	++	++	++	++	++	++	++	++	+++++	0	0	1.5	
II. Infrastructural Sectors															
B-62	Water Supply in Coastal Swampy Zone (B-66)		++	++	++	++	++	++	++	++	+++++	0		2.6	
B-66	Kuantan/Indragiri Basin Overall Development	--	++	++	++	++	++	++	++	++	+++++	0	0	1.3	
B-67	Integrated Swamp Development	--	++	++	--	++	++	++	++	++	+++++	0	0	1.0	
B-71	Rengat Left Bank Irrigation (B-66)					--	--	++	++	++	+++++	0			
B-72	S. Cenako Irrigation (B-66)							--	--	++	+++++	0			
E- 1	Fuel Efficient Stove Dissemination	--	++	++	++	++	++	++	++	++	+++++	0	0*	0.7	
E- 2	Rural Electrification	++	++	++	++	++	++	++	++	++	+++++	0	0*	1.0	
F- 3	Sumatra East Coast Road Development*	--	--	++	++	++						0	0*	20.0	
F- 4	Bridge Replacement Program	--	++	++	++							0	0*	10.0	
F-57	Integrated Transport System Development	--	++	++	++	++	++	++	++	++	+++++	0	0	5.0	
F-57	Kuala Enok Port (based on the result of F-57)				--	--	++	++	++	++	+++++				
F-63	Rengat Airport Improvement		--	++	++										
G- 4	Introduction of Rural Telecommunications	--	++	++	++	++	++	++	++	++	+++++	0	0*	5.0	
G-41	Kabupaten Local Telephone Network Expansion					++	++	++	++	++	+++++				
G-43	TDMA Satellite Link Expansion					++	++	++	++	++	+++++				
G-44	100 Small Earth Stations Provision										+++++				
G-47	Coin Telephone Sets Provision						++	++	++	++	+++++				
G-49	South Riau Digital Microwave System	--	++	++	++							0	0	8.0	
J- 1	Urban and Rural Water Supply Program I	--	--	++	++	++						0		15.0	
K- 3	Secondary Cities Urban Development	--	++	++	++	++						0		10.0	
K-12	Urban Drainage and Solid Waste Program					--	--	++	++	++	+++++				
K-13	Urban Road Improvement Program					--	--	++	++	++	+++++				
III. Others															
H- 3	Conservation & Management of Wildlife			--	++	++						0	0*	0.5	
L- 2	Rural Technology Extension Program	--	++	++	++	++	++	++	++	++	+++++				
L-11	ADP for Indragiri Hillr					--	--	++	++	++	+++++				
P-12	Production and Marketing Study	--										0	0*	1.0	
												Total	90.2		

Notes: 1. ---- denotes "study," ++++ "Implementation."
2. On-going projects are excluded from the list.
3. "GFS" stands for Guideline for Study. An asterisk (*) indicates that this Guideline for Study is common to several IDEPs.
4. (B-66) denotes that this project is to be integrated into B-66.
5. * Upgrading is required in addition to the on-going construction works.
6. Public investment is for Repelita V. The figures are subject to further study.

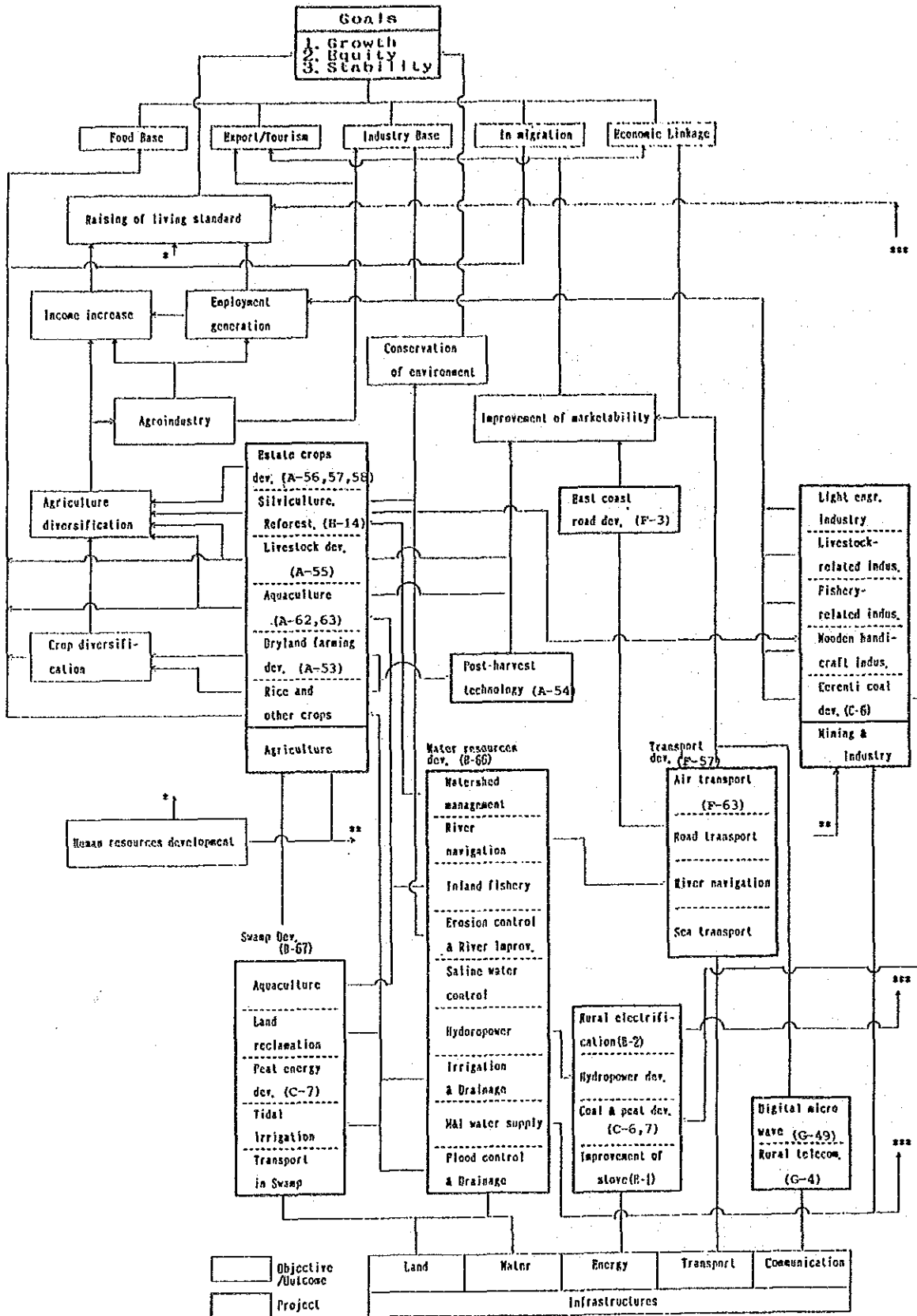


Figure 54. Relationship among Core IDEP Projects (Indragiri River IDEP)

K. Riau Islands Integrated Development Program

1. Background

436. This area consists of numerous islands scattered in the South China Sea off the eastern coast of Riau Province. Historically, the population in this archipelago formed part of a prosperous kingdom, equipped with advanced fishing techniques and navigation skills. The area's location also became very favorable after trade of spices began from Maluku to Europe in the 16th century. In contrast, the mainland Riau at those times was a swamp and marsh land with few native inhabitants. This situation had not changed much when Indonesia became independent in 1945. Tanjung Pinang, the central community of the area on Bintan island, thus served as the capital of Riau Province until 1965 when the seat was moved to Pekanbaru, an emerging market town on the mainland. It is apparent that the shift of the administrative center has adversely affected the overall development of the area. The mainstay of the area's economy has remained almost unchanged for several decades: fishery, rubber plantation and tin mining. Production levels, however, are generally low. Recently, tourism has shown a strong growth and become a prospective sector especially in Batam and Bintan islands.

437. The area has a unique economic advantage of being close to Singapore. Some fishery production is already aimed at this particular market while flocks of Singapore citizens cross the channel seeking a handy resort for recreation or vacation. The full exploitation of this locational advantage is the primary motive behind the Batam island development, currently under way with strong national initiatives. Other islands which are more or less close to Singapore are also benefiting, though less significantly, from their economic ties with the city-state economy. Whereas some parts adjacent to Singapore show a remarkable development in various aspects, other parts of the area, particularly very remote islands, remain largely underdeveloped. Social and economic infrastructure is still inadequate in most communities, thereby hindering the area as a whole from a dynamic development process witnessed in Batam. This gap should be closed to realize a more balanced development throughout the archipelago. This calls for an IDEP-type development program with a multisectoral approach.

2. Program Area

438. The program covers Kabupaten Kepulauan Riau (Figure 55). Kotamadya Batam (of which Batam island is the main part) is excluded from the program area on the ground that major components of Batam development are programmed and constructed directly by a national agency (Batam Island Development Authority), a situation not fit to the IDEP approach in which the provincial government must retain some initiative in plan making and implementation.

439. Kabupaten Kepulauan Riau is divided into 18 kecamatan (sub-districts). Its total population was 419,846 in 1987 (Table 66), growing very slowly over recent years (1.0 % annually 1983-1987). Total land area is 7,487 km², and population density was 56 per km² in 1987, a relatively high value by the provincial standard (provincial average was 29 in 1987). The biggest island in terms of population is Bintan; its 141,632 inhabitants (1987) account for 34 % of the total. Of this, 83,673 (20%) live in Tanjung Pinang, the capital city of kabupaten. The biggest island in terms of land area is apparently Natuna, but the exact figure is not clearly known.

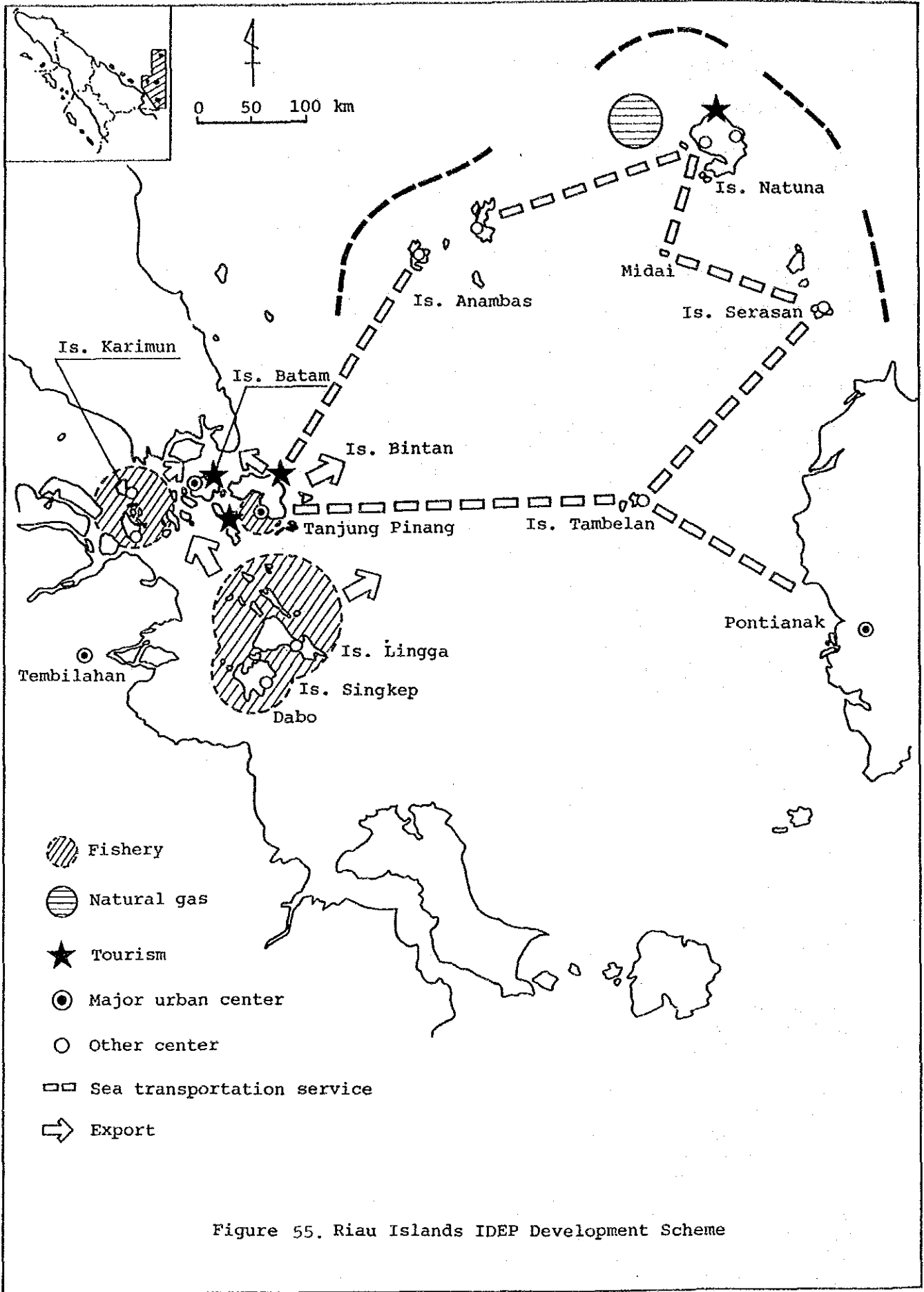
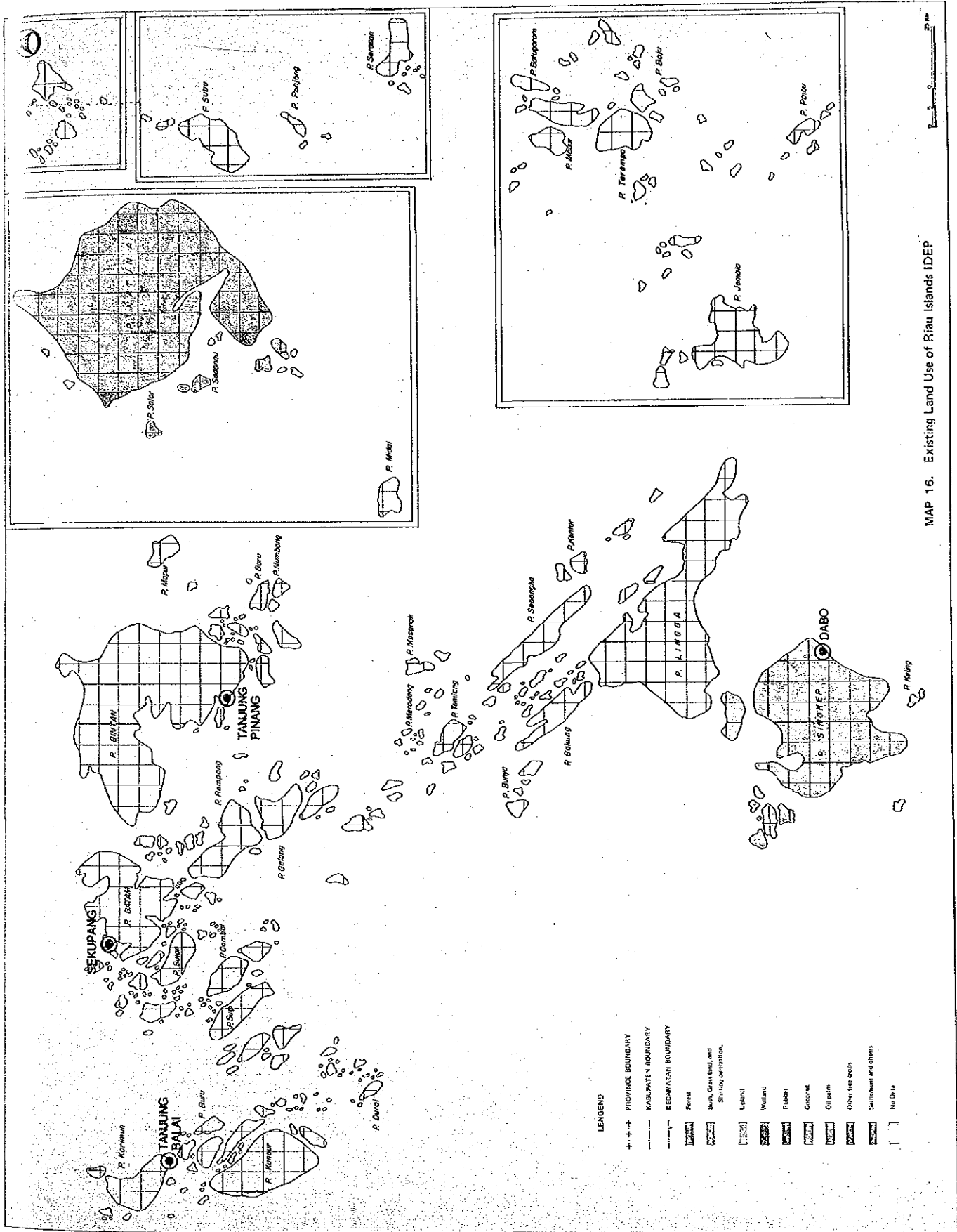


Figure 55. Riau Islands IDEP Development Scheme



MAP 16. Existing Land Use of Riau Islands IDEP

Table 66. Population by Kecamatan

Kecamatan	1983	1987	Growth
			Rate (%) 1983-87
Singkep	36,991	35,527	-1.0
Lingga	20,396	20,814	0.5
Senayang	14,033	14,490	0.8
Moro	16,914	20,342	4.7
Kundur	48,733	50,158	0.7
Karimun	51,052	53,078	1.0
Bintan Utara	17,125	18,163	1.5
Bintan Timur	31,498	32,931	1.1
Jemaja	6,768	6,865	0.4
Tambelan	4,055	4,146	0.6
Siantan	21,837	21,937	0.1
Midai	5,257	5,411	0.7
Bunguran Barat	13,376	13,493	0.2
Serasan	7,983	8,447	1.4
Bunguran Timur	14,916	16,192	2.1
Galang	13,596	14,179	1.1
Tg. Pinang Barat	47,175	43,876	-1.8
Tg. Pinang Timur	31,543	39,797	6.0
Total	403,248	419,846	1.0
Land Area (km ²)	7,487	7,487	
Population Density	54	56	

Sources: Kepulauan Riau Dalam Angka 1987
Riau Dalam Angka 1987

Table 67. Regional GDP (1983 constant price)

Sector	1983	1987	Growth
	(Rp. billion)	(Rp. billion)	Rate (%) 1983-87
Agriculture	34.7	42.8	5.4
Mining	29.8	43.6	10.0
Manufacturing industries	10.5	14.1	7.6
Electricity, gas and water supply	1.3	2.4	16.6
Construction	4.3	4.5	1.1
Trade, hotel and restaurant	49.4	65.0	7.1
Transport and communication	21.4	28.8	7.7
Banking and other intermediaries	2.0	3.5	15.0
Ownership of dwelling	13.0	15.4	4.3
Public administration and defence	11.6	12.7	2.3
Services	2.6	3.9	10.7
Regional GDP (Rp. billion)	180.5	236.7	7.0
Regional GDP per capita (Rp. million)	0.45	0.56	5.9

Source: Kepulauan Riau Dalam Angka 1987

Table 68. Major Products (Agriculture)

Product	Unit: ton				
	1983	1984	1985	1986	1987
Wetland rice	292	158	192	871	360
Dryland rice	152	53	108	50	168
Cassava	6,212	7,133	5,524	7,518	3,249
Sweet potato	2,255	3,566	2,115	1,638	921
Rubber (smallholder)	9,955	9,491	10,004	9,920	11,691
Coconut (smallholder)	13,907	13,960	24,602	21,378	21,032
Clove (smallholder)	552	579	619	695	667
Fishery production	-	-	-	-	41,981
Fishery export	6,937	7,919	7,649	6,939	7,915

Source: Kepulauan Riau Dalam Angka 1987

Table 69. Manufacturing Industries

	1983	1984	1985	1986	1987
Large- and medium-scale					
Establishments	48	51	45	56	38
Workers	-	-	-	4,994	4,000
Small-scale and cottage					
Establishments	750	804	863	896	887
Workers	-	-	-	3,760	3,994
Total					
Establishments	798	855	908	962	925
Workers	-	-	-	8,754	7,994

Source: Kepulauan Riau Dalam Angka 1987

440. Tables 67, 68 and 69 depict a rough picture of the local economy. Regional GDP per capita in 1987 was Rp. 0.80 million at current prices or Rp. 0.56 million at 1983 constant prices (Table 67), which are favorably compared with the provincial figures, Rp. 0.50 million and Rp. 0.40 million, respectively (non oil/gas, 1986). In agriculture food crop production is very limited because soils and climate in this area are generally unsuitable for this purpose. Instead, tree crops (especially rubber) and fishery are two main subsectors to sustain the living of most local population (Table 68). Manufacturing is a small sector in terms of GDP (6% of total), consisting mostly of small-scale and cottage industries (Table 69). Some firms operating on Bintan island, however, are fairly large in scale. Their products are mainly for export.

3. Development Potentials and Constraints

441. Productive sectors with development potentials include fishery, tree crops (rubber, coconut, clove), livestock, mining, manufacturing and tourism. Fishery has long supported the lives of most local people here since soils and climate are generally unsuitable for food crop production (for instance, the wetland rice field totaled only 120 ha and the dryland rice field 141 ha in 1987). The level of fishing activity, however, is hardly above the subsistence level, with fishermen's techniques and gears being very traditional. Despite the abundant fishery resources expected in the waters of the area, the production is thus generally limited (about 40,000 tons annually) and supplied largely to local consumption. Only small portion (about 8,000 tons a year) is currently exported to Singapore and other countries mostly through the hands of traders of Chinese descent. Most farmers in the area are working in some way or other on rubber plantations (whether smallholder or large scale). Even though rubber is the second major export commodity after plywood (in value terms), smallholders' latex processing technique is rather primitive, thereby resulting in products of very low quality. Taking advantage of the Singapore market, some private companies have started breeding livestock in a large scale on Bintan island (currently, one swine farm and five chicken farms). Also, Natuna island is supplying Singapore with beef. Livestock production seems to have good prospect of future development.

442. Mining resources found in the area include bauxite in Bintan (under exploitation), tin in Singkep (under exploitation) and in Karimun (under preparation), granite in Karimun (under exploitation) and natural gas in Natuna (under preparation). Except for natural gas, the mining resources are generally limited either in quality or in quantity.

443. The area naturally has some good potential for manufacturing thanks to its proximity to Singapore and to the international navigation lane. Large factories operating in Bintan (three textile/garment factories, one shoes factory, one plywood factory, for instance) bear out this proposition. However, the potential seems to have been more sapped than stimulated by the recent fast development of Batam into a major industrial zone. The two islands actually are competing for manufacturing investment. If the manufacturing sector is firmly to establish and expand in Bintan, it would not occur until Batam has grown full-fledged. Meantime, it seems highly possible for medium- and small-scale factories processing locally available materials for export to establish around Tanjung Pinang provided that some strong incentives are given to them.

444. Tourism is a promising sector, especially for Bintan and its adjacent islands. A UNDP study completed in 1988 points out the possibility of marine resort development in this area. Facilities and infrastructure for tourism, however, are in large part lacking, and their careful provision is a prerequisite for the potential to realize.

445. As for social infrastructure in general, the area faces a particular difficulty: small communities spread over a vast territory and separated from each other by the sea. Economies of scale are thus virtually precluded in providing social services like education, health care and communication. A great deal of improvement has been achieved in the past, but the effort must continue in the future to raise their standards to a higher level. As one of the most fundamental infrastructure, transportation both within and between islands deserves a serious, special attention in our program.

4. Development Goals and Strategies

446. Development goals for the area are:

- to exploit the area's natural, especially marine, resources thereby stimulating economic activities in various sectors and raising the standard of living;
- to make most of the area's proximity to Singapore while providing and improving basic social and economic infrastructure in very remote islands; and
- to eradicate social and economic isolation.

Development strategies to achieve the above goals are sectorally indicated as follows:

4.1. Agriculture

447. Efforts should focus on fishery (marine fishing, mariculture), livestock and tree crops (rubber, coconut, etc.). Fishery and livestock production, either small- or large-scale, should keenly aim at foreign markets. Improvement on smallholder tree crops should also be given priority since they are important, sometimes only, sources of cash income to many inland farmers.

4.2. Manufacturing

448. Such industries as support or relate to fishery, livestock or tree crop production should be promoted first. The promotion, however, must consider the fact that the area is actually competing with Batam island for manufacturing investment. Small- and medium-size enterprises may be preferable.

4.3. Tourism

449. The area should be transformed into a major marine tourism center in western Indonesia. The marine park complex in Bintan should be developed first, in conjunction with improvement on infrastructure like roads, airport and telecommunication system. The resort should have an easy connection to other international tourist spots like Singapore, Lake Toba and Bali.

4.4. Infrastructure

450. Transportation receives No.1 priority. A road network should be developed or upgraded in each major island (Bintan, Singkep, Karimun) to eliminate villages only accessible by sea. Also, more frequent and reliable interisland shipping services are essential to the development of the area. For this purpose, some principal ports need upgrading. Telecommunication is another priority sector. At least, all inhabited islands should have a telecommunication link to Tanjung Pinang or another nearest major city by 2008.

5. Identified Projects and Phasing

451. Identified projects/program are listed in Table 70.

6. Selection of Priority Projects with Reasoning

452. From among the projects listed above, the following are selected as priority projects. Relationship among those projects is shown in Figure 56.

(1) Mariculture Development Project (A-62)

453. This project lies at the core of fishery development in the area. By providing facilities to support aquaculture and helping organize fishermen into seaweed culture groups, the project will vitalize and expand fishery activities in the area.

(2) Development of Marketable Handicraft Products (D-4)

454. As the tourism industry develops, demand for handicraft souvenirs will increase. This project is intended to help local craftsmen capture this opportunity.

(3) Agro-Industries (D-65) Rubber Products Industries (D-67) Fishery/Aquaculture-Related Industries (D-69) Livestock-Related Industries (D-70)

455. Those industrial projects actually consist of establishing factories with private investment. Nonetheless, they represent important elements of this IDEP. Priority is given to those industries which utilize locally-produced materials (e.g., rubber, coconut, fish) or supply needed inputs to local industries (e.g., fish meal to aquaculture).

(4) Riau Islands Sea Transportation Service (F-58)

456. To ensure more frequent and reliable transportation service among the islands is the *sine qua non* to vitalizing the economy areawise and eradicating social and economic isolation.

(5) Batam-Bintan Ferry Connection (F-60)

457. With the active development of Bintan island on the one hand and Batam island on the other, interaction between the two neighboring islands will certainly increase. Forseeing a sharp rise in car traffic, this project proposes a car ferry service connecting the two islands.

(6) Introduction of Rural Telecommunications (G-4)

458. Like sea transportation, telecommunication has an important role to play in this program area in eradicating isolated communities. To this end, the current telecommunication system, nonexistent in most parts and rudimentary if any, needs substantial upgrading.

(7) Batam Island and Bintan Island Marine Tourism Development (I-12)

459. Tourism is expected to become one of the leading sectors in the local economy (Kabupaten BAPPEDA gives top priority to tourism during the Repelita V period). As the first step toward the long-term tourism development, the marine park complex on the northeast corner of Bintan, suggested by the UNDP study, should get under way. Note that the two infrastructural projects named above, that is, Batam-Bintan Ferry Connection and Introduction of Rural Telecommunications, should be carefully coordinated with this tourism development.

(8) Area Development Program for Riau Islands (L-13)

460. The Area Development Program is a proved way to benefit a wide range of local residents more directly. The approach seems particularly appropriate to the area where most sectoral projects would hardly be feasible due to their necessarily reduced scale. The proposed program will be a package of such small-scale components as:

- Smallholder rubber/coconut plantation improvement
- Fishing villages community development
- Road network development
- Medical service by boat clinic ("sailing doctor")

Table 70. Riau Islands IDEP Project List

P-11 Riau Islands																
Code	Project	REPELITA V					REPELITA VI					REPELITA VII & VIII	High	GFS	Pub Inv Rep. V (US\$M)	
		89	90	91	92	93	94	95	96	97	98	1999 - 2008				Priority
I. Productive Sectors																
A-61	Fishery Education						--	--	++	++	++	++				
A-62	Mariculture Development	--	++	++	++	++	++						0	0*	3.0	
D-4	Dev. of Marketable Handicraft Products			--	++	++							0	0*	0.4	
D-65	Agro-Industries		--	++	++	++	++						0	0*		
D-67	Rubber Products Industries			--	++	++	++									
D-68	Wood/Rattan Processing Industries			--	++	++	++									
D-69	Fishery/Aquaculture-Related Industries				--	++	++						0			
D-70	Livestock-Related Industries		--	++	++	++							0			
D-71	Mineral Processing Industries			--	++	++	++									
D-72	Craft Industries			--	++	++	++									
D-74	Garment and Other Textile Industries				--	++	++	++	++							
D-78	Light Engineering Industries				--	++	++	++	++							
I-12	Batam & Bintan Islands Marine Tourism Dev.	--	+	++	++								0		31.2	
II. Infrastructural Sectors																
D-7	Industrial Estate/Area (Tanjung Pinang)						--	++	++							
E-1	Fuel Efficient Stove Dissemination	--	--	++	++	++	++	++	++	++	++	++	0	0*	0.5	
E-2	Rural Electrification	++	++	++	++	++	++	++	++	++	++	++	0	0*	1.0	
F-58	Riau Islands Sea Transportation Service		--	+	++	++							0	0	2.0	
F-60	Batam-Bintan Ferry Connection		--	+	++								0		1.0	
F-64	Tanjung Pinang Airport Improvement				--	++	++	++	++							
F-65	Singkep Airport Improvement				--	++	++	++	++							
G-4	Introduction of Rural Telecommunications	--	--	++	++	++	++						0	0*	5.0	
G-42	Subscriber Radio System (Phase I)											--				
G-43	TDMA Satellite Link Expansion						--	++	++	++	++					
G-46	CoIn Telephone Sets Provision			--	++	++	++									
K-12	Urban Drainage and Solid Waste (Tg. Pinang)						--	++	++	++						
III. Others																
L-13	ADP For Riau Islands	--	--	++	++	++	++	++	++	++	++	++	0	0	1.0	
												Total		45.1		

Notes: 1. --- denotes "study," ++++ "implementation."
 2. On-going projects are excluded from the list.
 3. "GFS" stands for Guideline for Study. An asterisk (*) indicates that this Guideline for Study is common to several IDEPs.
 4. Public Investment is for Repelita V. The figures are subject to further study.

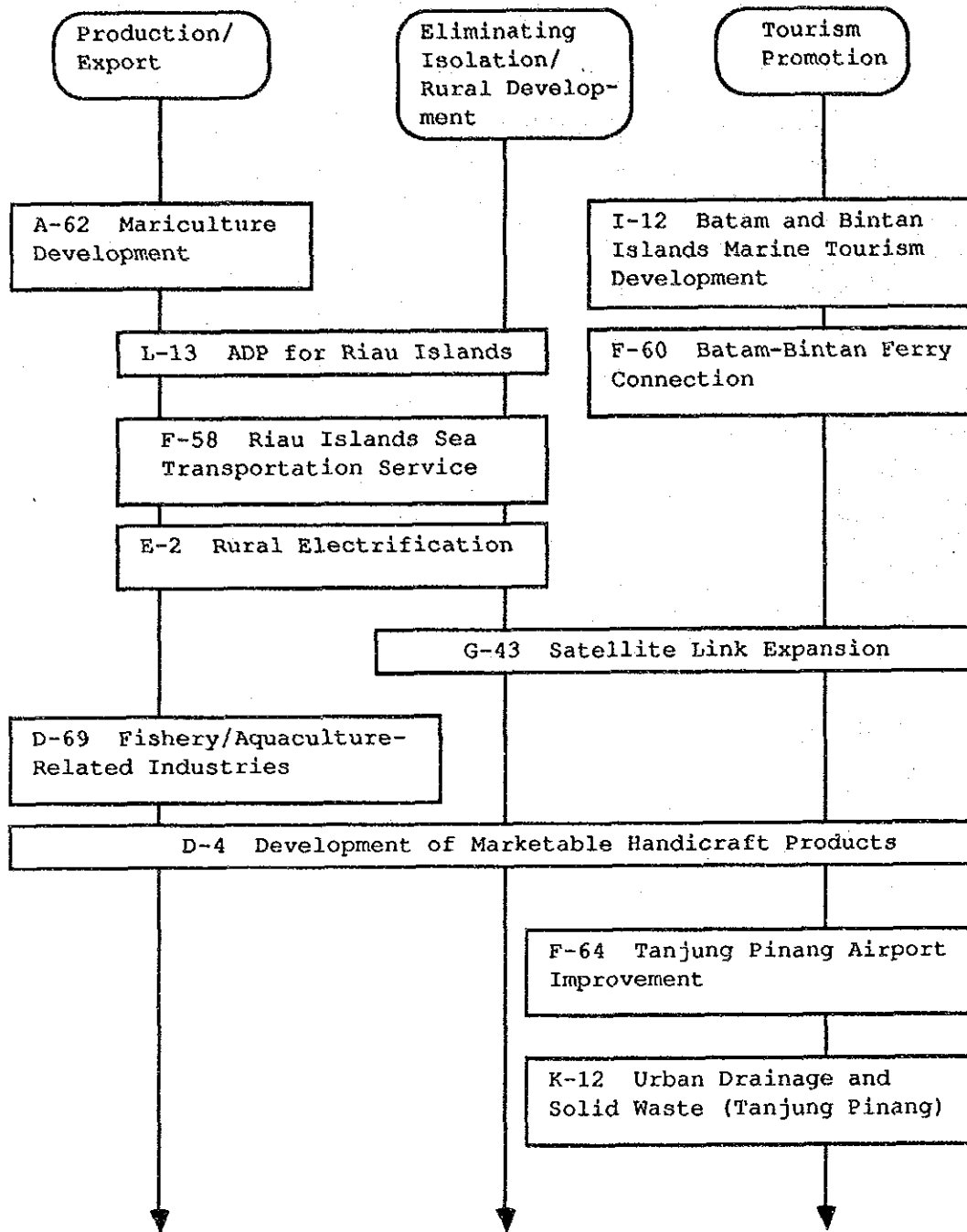


Figure 56. Relationship among IDEP Projects (Riau Islands IDEP)

IX. FINANCE AND INSTITUTION

A. Introduction

461. The administrative and financial systems for regional development in Indonesia can be characterized by the following three standpoints. First, in the central government, the administrative system of ministry (departemen), directorate general (direktorat jenderal) and directorate (directrat) is well established, securing a consistent and stable operation of administration and finance. Regional administration, on the other hand, operates at four levels, i.e., province (propinsi), regency (kabupaten) or municipality (kotamadya), sub-district (kecamatan), village (desa) or urban community (kelurahan). This administrative hierarchy is also well established. Second, at the central level, coordination for medium- and long-term economic planning is the main responsibility of BAPPENAS. Short-term fiscal management is done by the Ministry of Finance, regional administration and finance by the Ministry of Home Affairs, and technical supports for project implementation by various line ministries and agencies. The role of each ministry and agency is also articulated, making those institutions complementary to each other. Third, finally, the central government provides financial supports to the provincial governments and other levels of regional administration in such forms as INPRES and APBN. This system has accumulated experience of more than 20 years under the Soeharto administration. Administering these financial supports has facilitated dialogue and coordination between the regional and central governments.

462. After the Indonesian economy has undergone considerable structural changes, there have emerged several issues on how to manage its development process. They include the following five. First, financial support from the central government to the regions has so far relied much on revenues from the oil and gas sector. The decline in oil prices in the early 1980s has caused the Indonesian government to rely less on the oil and gas sector and more on non-oil/gas sectors. It has also become difficult to expand the financial support to the Region substantially. Second, at the same time, it is necessary to mobilize private initiatives which is due partly to the shortage in public fund but also to the fact that the level of Indonesia's development reached the point where much more active private involvement into the development process is required. Third, administrative and financial systems for regional development have been so far directed to rural and agriculture-oriented development strategies. This orientation still retains its importance, particularly in outer islands. Meanwhile systems for urban and manufacturing-based development are yet to be developed, which are vitally important for the Indonesian economy at this present stage of development. Such systems are particularly weak at the regional level. Fourth, for the successful implementation of regional development, the division of roles between the central and regional governments requires a shift toward a heavier responsibility on the part of regional governments than ever. However, on the part of planning and managing capabilities of personnel in regional mid-tier administration, particularly of administrators, still leave room for further refinements. Fifth, development expenditures as well as some portion of expenditures for regional development still heavily depend upon the assistance from the central government. A World Bank analysis of regional government finance (IBRD, Public Resource Management Study, March 1987) points out that "the local revenue authority and performance are not commensurate with local expenditure

responsibilities" and that "augmenting the major local sources of revenues is recommended."

463. In the past, many regional development studies were carried out, but very few of them have been translated into realization. One major reason was that their recommendations were made mainly from a view point of spatial planning without due consideration on macro-economic, financial and institutional aspects. This study has taken note of this: macroeconomic situation has been covered in Chapter IV, and this chapter deals with financial and institutional aspects.

464. There is another reason to place this chapter in this Report. That is the recent drastic changes in development scenes particularly in Indonesia. After the decline in oil price in the early 1980s, the Government has taken a series of important policy decisions to emphasize more non-oil/gas export, employment, and so on. This trend inevitably necessitates a shift in development priority from the sector-based development to the area-based development approach. Accordingly, finance and institution should also be adjusted to meet those new strategies.

B. Present Situation in Regional Development Financing

1. Issues

465. This section deals with the structure of regional development financing in Indonesia and financial requirements and fund availability in the Region. The Team focuses on the analysis of the structure of regional development financing in the Region, employing actual financial data, in collaboration with BAPPEDA of the four provinces, BAPPENAS, Ministry of Finance, BKPM in the four provinces and headquarters, and the Central Statistical Office. Major items to be studied are:

- (i) Availability of data necessary for the analysis and their consistency with related data and information;
- (ii) Estimation of the amount of actually invested funds, private and public, during the Repelita IV period of 1984/85-1988/89; and
- (iii) Estimation of development funds available for the period of Repelita V and onward.

466. It has turned out that data are available for (1) private investments which utilize the facilities of BKPM and (2) public expenditure of APBD TK.I. level. Those data are readily available by province, by sector, and by year of investment realization, and up to detailed analysis. However, data on development expenditure through departments of the central government, i.e., sectoral projects or DIP, and project/program aids by province and sector are not ready as of the time of this drafting, although efforts to produce them were made by the Ministry of Finance, for which the Team is very grateful. One reason for this difficulty is the considerable portion of funds, particularly those of aid projects, went to nation-wide or multi-provincial projects. This makes it impossible to trace them to their specific destination. Since this province-specific information is essential to our analysis, the Team made some provisional estimates to supplement partial information which was available. Another reason is the timing of the data compilation. Since it is before the end of Indonesian fiscal year 1988/89 and that of Repelita IV, it is inevitable that the base-year data for 1988 contain some estimates. Because of this the result was still provisional.

2. Structure of Regional Development Financing

467. Financial management by the Government of Indonesia has been based on the "Dynamic and Balanced Budget" principle. The central government's receipt consists of routine and development receipt. Routine receipt is comprised of oil and gas revenue and non-oil/gas revenue (mostly tax revenue from various sources). Development receipt consists of project and program aids.

468. The central government's expenditure is also divided into routine and development expenditure. Their sum is equal to total receipt. Components of development expenditure include sectoral projects through departments/institutions, general INPRES programs (including subsidies to provinces, kabupatens, villages), sectoral INPRES programs (primary schools, health, markets, replanting/reforestation, roads), IPEDA, project aid, etc. For the Repelita IV period an estimated Rp.48 trillion was spent as development expenditure, out of which Rp.35 trillion or 73% was directly administered by central departments.

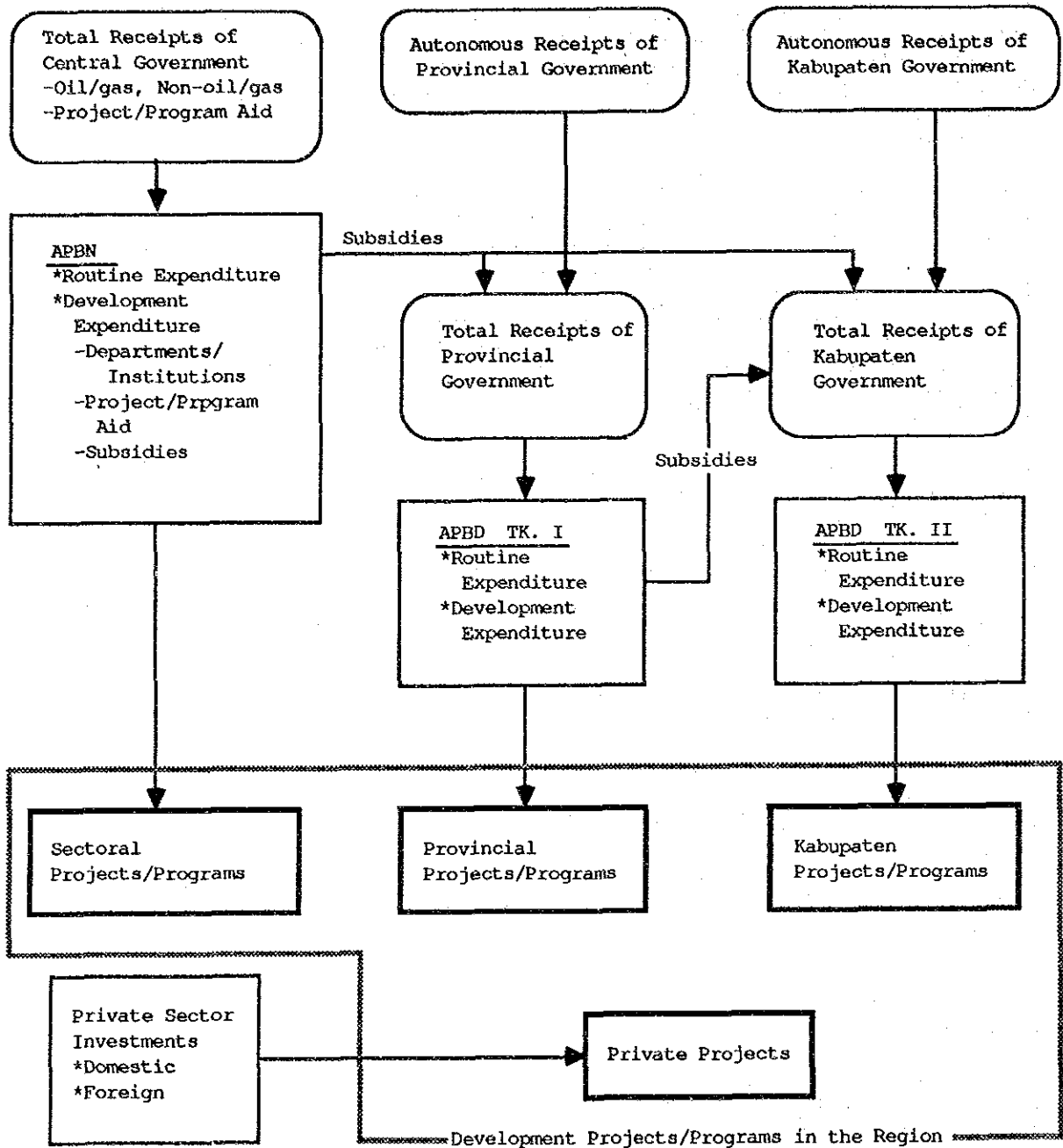
469. The provincial government's revenue consists of routine and development receipt. Development receipt consists of autonomous receipt of provincial government and subsidies from the central government including INPRES programs and IPEDA, which is a land use tax payable mainly to second level authorities. The provincial government's expenditure is also divided into routine and development expenditure. Provincial projects are financed by development expenditure of the provincial government. Similarly, the kabupaten government receives subsidies from the central and provincial governments. These subsidies are the principal source of revenue for the kabupaten government to finance kabupaten projects.

470. In addition to the above mentioned public sources, private investment is a very important financial source. Its importance in the overall development process was specifically mentioned in the budget address delivered by the President on 7th January, 1989. Since the government funds that can be mobilized are limited, the role of private investment will particularly be important in the Repelita V development process. The structure of financing regional development through public and private sources of fund is schematically shown in Figure 57.

471. Then, the next question is how much amount of funds have actually been mobilized during the Repelita IV period? The Team's estimates are shown in Table 71. Total investment mobilized for the development of the Region during the Repelita IV period is estimated to be Rp.10.2 trillion, out of which Rp.3.2 trillion (31.4%) was financed by the central and provincial governments and Rp.7.0 trillion (68.6%) by the private sector. Out of the public sub-total (Rp.3,214 billion), only Rp.381 billion (or 12%) came from the provincial governments. As was mentioned earlier, there are no readily available data which are usable for the analysis of regional development financing. This table, therefore, gives the best possible estimates at this moment for the Team, and is considered reasonably accurate to be used for macro-planning.

3. Total Investment Required From Macro-economic Point of View

472. In Progress Report II, the Team estimated the amount of investment required to achieve the projected GDP growth by using the concept of ICOR (incremental capital output ratio). The amount of investment is calculated by:



Legend: Receipt Expenditure Project/Program

Figure 57. Flow of Funds for Regional Development in Indonesia

Table 71. Estimated Amount of Investment

(unit: Rp.billion)

	1984	1985	1986	1987	1988	Repelita IV Total
Aceh						
Central Gov.	105	97	71	93	154	520
Provincial Gov.	12	16	18	15	16	77
Public Sub Total	117	113	89	108	170	597
Private Domestic	29	462	128	31	124	773
Private Foreign	2	22	37	66	557	552
Private Sub Total	31	484	165	35	681	1,325
Total	147	597	255	73	840	1,922
North Sumatra						
Central Gov.	201	194	149	239	501	1,284
Provincial Gov.	20	26	29	36	38	149
Public Sub Total	221	220	178	275	539	1,433
Private Domestic	126	107	433	899	511	2,076
Private Foreign	4	8	50	775	74	910
Private Sub Total	131	115	483	1,673	585	2,986
Total	351	335	661	1,948	1,150	4,419
West Sumatra						
Central Gov.	144	128	93	119	117	600
Provincial Gov.	10	11	12	13	15	61
Public Sub Total	153	139	105	132	153	661
Private Domestic	27	106	88	43	105	368
Private Foreign	4	2	16	2	10	33
Private Sub Total	30	107	103	45	114	401
Total	184	247	209	177	267	1,062
Riau						
Central Gov.	127	126	39	35	101	428
Provincial Gov.	12	26	19	17	21	95
Public Sub Total	138	152	58	52	122	523
Private Domestic	47	195	501	673	407	1,822
Private Foreign	9	65	81	1	345	501
Private Sub Total	56	259	582	673	752	2,323
Total	195	411	641	726	874	2,846
Region						
Central Gov.	576	545	352	486	872	2,833
Provincial Gov.	53	79	79	81	90	381
Public Sub Total	629	624	431	567	962	3,214
Private Domestic	229	870	1,150	1,645	1,146	5,039
Private Foreign	19	96	184	712	985	1,996
Private Sub Total	248	965	1,334	2,357	2,131	7,035
Total	877	1,589	1,765	2,924	3,093	10,249

Source: Team's estimates based on data from the Ministry of Finance and BKPM.

where $I^t = ICOR \times GDP^{t+1}$

I^t : capital investment to be made in year t
 GDP^{t+1} : net increase of GDP projected for the next year

473. Again reliable and readily available investment and GDP data are lacking, but the Team has tried to calculate provincial ICOR for the period 1984 - 88 and obtained the following values:

Aceh	4.11
North Sumatra	3.88
West Sumatra	2.82
Riau	7.35
Region	4.28

474. Based on these ICOR values, the Team projected differentiated ICOR values (see Table 15 in Chapter IV) for the calculation of future investment requirements, which are shown in Table 16, Chapter IV. In calculating investment requirements in the Repelita V period, ICOR values are assumed to be slightly higher than those of 1984 - 88. The reason behind this is that the Region in general still lacks minimum infrastructure for the sustainable development and that it is necessary for the provinces, typically Riau but not restricted to the province, to construct more basic infrastructure and put emphasis on OMR of the existing infrastructure. This will slightly lower economic efficiency of investment during the Repelita V period. In conclusion, the required investments are estimated at Rp.18,327 billion for Repelita V, Rp.24,816 billion for Repelita VI and Rp.87,056 billion for Repelita VII and VIII, as shown at the bottom of Table 16. These amounts were further broken down into the requirements for IDEPs and non-IDEP projects. Subject to detailed feasibility study of each project, the IDEPs call for the investment funds roughly estimated at Rp.11.9 trillion for the period of Repelita V(1989/90-1993/94) out of a total of Rp.18.3 trillion required by the whole Region. The amount is expected to be financed both from the private and public sources, and the entire indicative investment requirements of the Region during the coming 20-year period of 1989/90-2008/09 (Repelita V-VIII) are shown in Table 72.

4. Available Resources

475. On 7 January 1989, the President of the Republic of Indonesia disclosed the framework of Repelita V, total investment of which is around Rp.239 trillion, with Rp.107 trillion¹ or 45% are development budget and Rp.132 trillion or 55% are routine budget. It is assumed that out of the Rp.107 trillion state development budget, Rp.64.2 trillion or 60% will be distributed to the 27 provinces directly through INPRES programs or indirectly through sectoral projects by central departments and project aids. The Team further assumes that Rp.6.42 trillion or 10% of the provincial portion will be allocated to the four provinces in the Region.

476. Concerning the private investment, Jakarta and Java will remain dominant in attracting private investors in the next five years.

¹ The corresponding national development budget for the first year of Repelita V (1989/90) was Rp.13.1 trillion, of which IGGI pledged about US\$4.3 billion (Rp.7.3 trillion) or about 56% of the total state budget.

The Team can safely assume that Rp.11.9 trillion will come to the Region. This is to assume that the average rate of growth of private investment during the Repelita IV and Repelita V periods will be 11.1% per year. This is a target attainable by the Region on the condition that the present world economic trend of moderate environment will continue to the end of next Repelita. Sources of investment for the subsequent period of Repelita VI are also calculated on the assumption that shares of public and private investment will keep constant. The results are shown in Table 73.

477. Out of a total of Rp.18.3 trillion required from macro-economic point of view for the period of Repelita V, Rp.6.4 trillion (35%) would come from the public funds. On the other, total cost required for 219 priority projects to be implemented by the government during Repelita V was estimated at Rp.5.2 trillion (see para. 239). In considering that the latter figure did not include those projects in other sectors, such as education, housing and health, these two figures are very close to that of the available funds for the Region during the same period.

5. Some Remarks on Financing Regional Development

5.1. Preferential Allocation of Development Funds to the Region

478. The Region is a typical resource-rich region for which an economic efficiency-oriented development approach fits well. This orientation is important not only for the Region itself. The exploitation of development potentials of the resource-rich region could also considerably ease problems in other regions directly or indirectly. Over-population and unemployment in Java and economic inequalities among regions are examples. The exploitation of resource potentials in the Region will create employment opportunities for the present and future generations in and outside the Region, and stimulate spontaneous transmigration from over-populated Java. The income generated in the Region will certainly raise the standard of living of the resource-poor and depressed regions in other parts of the country.

479. From the above-mentioned standpoint, the Team's view is that the preferential allocation of development funds to the Region is justifiable and should be emphasized. Allocating development funds favorably to the Region might be justified because the Region has rich development potentials and its direct and indirect impact of development on other regions is expectedly great. However, the actual allocation of development funds to the Region during the Repelita IV period is estimated approximately at 9% of the national total. This figure is less than the Region's population share (11%).

5.2. Dependency of Local Government Finances on the Central Government

480. Table 74 indicates the receipts and expenditures of the four provinces in the Region for the first four years of the Repelita IV period. During the period, out of Rp.1,449 billion of the total local receipt, Rp.1,067 billion (or 73.6% of the local receipt) was transfers from the central government. Local autonomous taxes amounting to Rp.198 billion were not a significant source of revenue and accounted for only 13.6% of the total receipt. This structure of heavy dependence on the transfer from the central government might lead to a lack of incentives for mobilizing local sources of revenue and for responsible and efficient collection of local taxes.

481. On the expenditure side, approximately Rp.203 billion (or about 70% of the development expenditure, amounting to Rp.292 billion,

Table 73. Sources of Investment

(unit: Rp.billion)

		REPELITA IV (1) 1984-88	REPELITA V (2) 1989-93	REPELITA VI (3) 1994-98
Aceh	Public	597	1,194	1,616
	Private	1,325	2,286	3,048
	Total	1,922	3,480	4,664
North Sumatra	Public	1,433	2,863	3,874
	Private	2,986	5,720	8,306
	Total	4,419	8,583	12,180
West Sumatra	Public	661	1,323	1,789
	Private	401	935	1,273
	Total	1,062	2,258	3,062
Riau	Public	523	1,046	1,407
	Private	2,323	2,961	3,504
	Total	2,846	4,007	4,911
Region Total	Public	3,214	6,420	8,686
	Private	7,035	11,907	16,130
	Total	10,249	18,327	24,816

Notes: (1) is estimated from data of the following sources.

Public: Ministry of Finance

Private: BKPM

(2) and (3) are investment requirements (non-oil/gas) shown in Table 16 Chapter IV.

Table 74. Provincial Governments Receipts and Expenditure (1984/85-1987/88)

(unit: Rp.million)

	Aceh	North Sumatra	West Sumatra	Riau	Region
I. Routine Receipts	227,047	688,593	143,647	122,951	1,182,238
1. Local Taxes	20,972	114,187	26,989	35,471	197,619
2. Receipts for Services	3,176	8,500	3,395	3,516	18,587
3. Profit Sharing on Local	578	1,496	2,592	312	4,978
4. Receipts from Official	129	12,925	996	509	14,559
5. Current Transfer from	173,249	510,131	101,025	79,104	863,509*
6. Loans	0	0	0	0	0
7. Other Revenues	4,435	5,997	3,765	1,564	15,761
II. Development Receipts	53,461	63,390	51,469	98,745	267,065
1. Previous Year's Surplus	941	1,927	3,957	27,435	34,260
2. Transfer from Cent. Gov.	50,008	56,301	44,323	52,743	203,375*
3. Loc. Funds/Village Funds	1,336	1,695	1,487	0	4,518
4. Ipeda/Ireda	1,175	3,064	404	18,417	23,060
Total Receipts	280,508	751,983	195,116	221,696	1,449,303
I. Routine Expenditure	174,070	259,824	144,863	110,334	689,101
1. Personnel Expenditure	84,221	137,550	64,227	25,862	311,860
2. Subsidies to Local Gov.	18,659	11,115	23,002	26,652	79,428
II. Development Expenditure	60,933	110,822	45,960	73,878	291,593
Total Expenditure	235,003	370,646	190,823	184,222	980,694

Source: Ministry of Finance.

Note: Transfer from Central Government = Rp. 1,066,884 million.

Table 72. Investment Required from Macro-economic Aspect

Province/IDEP	Population (x 1000) 1988	Investment Required* (x Rp. billion)				Total 1989-20
		REPELITA V 1989-1993	REPELITA VI 1994-1998	REPELITA VII/VIII 1999-2008		
Aceh Province	3,225 (100.0)	3,480 (100.0)	4,664 (100.0)	14,852 (100.0)	22,994 (100.0)	
Northern Aceh IDEP	923 (28.6)	1,095 (31.5)	1,467 (31.5)	4,248 (28.6)	6,810 (29.6)	
West Aceh IDEP	343 (10.6)	553 (15.9)	742 (15.9)	1,889 (12.7)	3,184 (13.8)	
Non-IDEP (Aceh)	1,959 (60.7)	1,832 (52.6)	2,455 (52.6)	8,715 (58.7)	13,002 (56.5)	
North Sumatra Province	10104 (100.0)	8583 (100.0)	12,180 (100.0)	45,353 (100.0)	66,116 (100.0)	
Metropolitan Medan IDEP	5,633 (55.8)	4,550 (53.0)	6,455 (53.0)	24,037 (53.0)	35,042 (53.0)	
West Coast Tapanuli IDEP	1,149 (11.4)	1,270 (14.8)	1,803 (14.8)	5,669 (12.5)	8,742 (13.2)	
Nias Island IDEP	551 (5.5)	944 (11.0)	1,340 (11.0)	3,742 (8.3)	6,026 (9.1)	
Non-IDEP (North Sumatra)	2,771 (27.4)	1,819 (21.2)	2,582 (21.2)	11,905 (26.2)	16,306 (24.7)	
West Sumatra Province	3,839 (100.0)	2,258 (100.0)	3,062 (100.0)	10,001 (100.0)	15,321 (100.0)	
Minang Highlands IDEP	1,611 (42.0)	901 (39.9)	1,222 (39.9)	3,990 (39.9)	6,113 (39.9)	
South Sijunjung IDEP	135 (3.5)	237 (10.5)	322 (10.5)	875 (8.8)	1,434 (9.4)	
Mentawai Islands IDEP	51 (1.3)	117 (5.2)	159 (5.2)	390 (3.9)	666 (4.3)	
Non-IDEP (West Sumatra)	2,042 (53.2)	1,003 (44.4)	1,359 (44.4)	4,746 (47.5)	7,108 (46.4)	
Riau Province	2,821 (100.0)	4,007 (100.0)	4,911 (100.0)	16,851 (100.0)	25,769 (100.0)	
Rokan Basin IDEP	128 (4.5)	270 (6.8)	331 (6.8)	986 (5.9)	1,587 (6.2)	
Indragiri River IDEP	637 (22.6)	1,178 (29.4)	1,444 (29.4)	4,567 (27.1)	7,189 (27.9)	
Riau Islands IDEP	416 (14.7)	766 (19.1)	938 (19.1)	2,730 (16.2)	4,434 (17.2)	
Non-IDEP (Riau)	1,640 (58.1)	1,793 (44.7)	2,198 (44.7)	8,568 (50.8)	12,559 (48.7)	
Northern Sumatra (4 Provinces)	19,989 (100.0)	18,327 (100.0)	24,816 (100.0)	87,056 (100.0)	130,200 (100.0)	
IDEPs Total	11,577 (57.9)	11,880 (64.8)	16,222 (65.4)	53,122 (61.0)	81,225 (62.4)	
Non-IDEPs Total	8,412 (42.1)	6,447 (35.2)	8,594 (34.6)	33,934 (39.0)	48,975 (37.6)	

Note: *1988 constant price.

Source: JICA Study Team estimates.

by the four provincial governments during the same period) was financed by transfers from the central government (development receipts). Furthermore, the development expenditure financed directly by the provincial governments, according to the Team's estimation, was only 12% of the total public development expenditure (see para 472): i.e., 88% of the total public development expenditure was financed directly through various departments of the central government in the form of sectoral projects/programs. Therefore, only a thin slice of 3.6% (12% x 30%) of the total development expenditure was financed by funds purely locally raised.

482. The provincial governments raise a bulk of their tax revenue from two sources alone: namely, the annual licence fee for motorized vehicles (PKB) and the transfer tax which is levied upon the value of a vehicle at the time of change in ownership (BBN). While local tax revenue is increasing year by year and will likely grow in future as more vehicles will be used in the Region, more efforts must be devoted to increase locally generated tax revenue through more efficient tax administration and adjustment of the local tax system. They include improvements on registration of taxpayers, a better assessment of tax liabilities, and an improved system of collecting taxes and arrears. Few if any cases exist of loans borrowed directly by the local government. Since regional governments are allowed to borrow subject to approval by the Ministry of Home Affairs, more efforts should be directed to have access to foreign loans/grants or other reliable sources of loan finance. At the same time, donors are requested to take a more region-conscious attitude in their lending operation.

5.3. IGGI Contributions to the Indonesia Government

483. According to the Draft State Budget for 1990-91 delivered by the President Soeharto on January 4, 1990, it is expected that about Rp.11.2 trillion (or 70%) of the Government's development budget (Rp.16.2 trillion) would come from foreign aid including IGGI. According to UNDP's 1987 Report on Development Cooperation in Indonesia, however, about 41% of the external project assistance in 1987 went to nation-wide projects. Another 20% went to Java, Madura and Bali. Projects which cover Java/Madura/Bali together with one of the several outer islands accounted for 24%. Only some 14% of the project assistance was focused specifically on regions (not provinces) outside Java, Madura and Bali. Repelita V emphasized that provincially-based development plans should be established.

484. The Team also compared the magnitude of the past OECF investment to the Brantas River Basin Development Program during the period from 1968 to 1987. Although, there are considerable differences in value of the rupiah, yen and US dollar and financing methods, there are some similarities of the scale between the average IDEP and the Brantas Basin as follows.

	Area	Public investment
IDEP average	11,900 km ²	Rp.320 billion/5 years
Brantas	11,800 km ²	Rp.290 billion/20 years

5.4. Mobilization of Private Investment

485. "Privatization" has been rather a fashion recently not only in the developing countries but also in the developed countries, because national revenues do not increase as rapidly as government spendings. However, mobilization of private money is not so easy. First of all, the private sector requires adequate insurance, and,

secondly, it considers "efficiency" as top priority, therefore, complicated procedures should be streamlined. These conditions are applicable to both domestic and foreign private sector. The present financing and budget system, where majority of the provincial development budget coming from the central government through each sectoral ministry/agency, may not be appropriate for effective implementation of regional development program such as IDEPs. It is of paramount importance for all development efforts taking place in a province to be financially coordinated by the provincial government without differentiating the sources of funds, be it from the national development budget (APBN), INPRES funds, foreign financial assistance, or the local budget including APBD TK I and TK II. Private initiatives are also highly appreciated as are envisaged in Repelita V.

486. Much efforts are also being undertaken by both international institutions and developed country's governments to encourage foreign private investors. For example, in order to reduce risk of international investors, the World Bank has recently established the Multilateral Investment Guarantee Agency (MIGA). The Japanese Government has undertaken a series of policy improvements to encourage private investments to overseas including the establishment of trade insurance scheme and tax incentives. The New Asian Industries Development Plan (New AID Plan) becomes one of the Japanese Government's focuses, to promote export industries in the developing countries, where a set of private cooperation supported by the Japanese Government will be provided at the request of the developing country's government. This includes building infrastructure, technical cooperation, training, policy advice on marketing, risk and taxation and investment itself.

487. Recently, the Japan International Development Organization (JAIDO), a Japanese private organization, was established with the Government's support. This will encourage private investment in a project for foreign exchange earning including its preparation in a developing country. This organization is an addition to the existing government aid agencies such as JICA, OECF and Ex-Im Bank, which also have been broadening their cooperation activities with developing countries.

488. As far as the mobilization of local private investment is concerned, the Region in general seems to have been successful. As was shown in Table 72, private investment in the Region during the Repelita IV period (Rp.7,035 billion) is estimated at 68.6% of the total investment (Rp.10,249 billion), already surpassing the national target of 55% for the coming Repelita V period. This seemingly satisfactory result is due partly to the fact that the allocation of the central government funds to the Region was relatively low, because it is estimated that approximately 6% of the central government's total development expenditure was directed to the Region (see para 476). Even when this reservation is taken into account, the result is satisfactory, particularly in the provinces of North Sumatra and Riau.

489. One of the problems with private investment in the Region is its imbalances between provinces. The share of private investment in West Sumatra to the Region's total is only 5.7% while that of population in 1985 was 19.8%, that is, per capita private investment in West Sumatra was about a quarter of the Region's average. Even though this imbalance could be narrowed down if counted small investments which do not utilize the BKPM facilities, private investment in West Sumatra is certainly on the low side. It is, therefore, necessary for West Sumatra to put more emphasis on processing its agricultural products while exploiting its advanced agricultural technology. The promotion of agro-industry appears well suited to the province, and

opportunities for private investment may be amply created in the province.

490. Concerning the other three provinces of Aceh, North Sumatra and Riau, possibilities of private investment in the manufacturing and agriculture sectors are evident, and have been further strengthened by the successive deregulation measures introduced in October 1988 by the Indonesian Government. Although direct and indirect results of this introduction are yet to be seen, there are already various positive indications from domestic and foreign investors. One example is the establishment of new banks by joint venture between local and foreign banks. Such movements of diversifying the source of investment, particularly for the export-oriented enterprises, must be welcomed and further encouraged.

C. Institutional Reformation

1. Present Institutional Set-up for Regional Development

491. Indonesia is a unitary state. All power not specifically granted to the provincial and local government by the Constitution or by legislation approved by the President and the National Assembly, resides with the Central Government. Most revenue raising power resides with the Central Government. The Local and Provincial Governments are thus legally, administratively and financially dependent upon the Central Government. In addition to these administrative links between the Ministry of Home Affairs in Jakarta and local governments down to villages, there is another linkage between the center and the regions. Most central government departments maintain an office or agency in each province, in most districts and in some sub-districts. Those technical or line agencies are called vertical agencies. In any one province, the aggregate budget of these vertical agencies is usually much larger than that of the provincial government.

492. Decentralization and local coordination were furthered by Law Number 5/1974, the Regional Government Act. This gives the local executives legal authority. The creation of the Provincial Planning Board (BAPPEDA) beginning in 1974, and the District Planning Board (also BAPPEDA) in 1980 provided an institutional vehicle with which the local government can plan and coordinate local development activity. Financially, the Central Government has recently initiated various grant programs including INPRES and channeled budget to provincial governments. But there is still room to improve provincial governments' financial and institutional capacity to coordinate development programs at the local level.

493. Some successful cases have recently emerged. For example, USAID-financed Provincial Area Development Program (PDP) started its operation in Central Java and Aceh in 1978/79 with two main purposes: (i) to decentralize authority and funding to the District/Provincial governments under BAPPEDA; and (ii) to increase income and productivity of the rural poor. In Aceh, the Program functions as follows. The provincial government notifies district governments approximately how much money will be available for each district in the coming year. Districts are asked to prepare project proposals regardless the allocated amount, since only sound proposals will be accepted after screening. If some district fails to submit good enough proposals, the unspent portion of funds will be reallocated among other districts with good proposals. This scheme has generally led to a rapid improvement in quality of proposals produced by districts.

494. In response to the Team's questions at the mini-workshops about the best projects assisted in the past, provincial government staff enumerated a number of small but institutionally successful projects: for instance, PDP (USAID), West Pasaman Area Development (West Germany), rural water supply (the Netherlands), provincial road and bridge improvements (IBRD), small irrigation and livestock distribution (ADB) and rural electrification (France). They also responded that their priority during Repelita V will be given to those projects which contribute to employment generation, export and production supporting infrastructure. In this context, it would be highly desirable if each provincial government's own development priority is conveyed to donors through more explicit format of the IGGI project list before their pledging.

495. The IGGI system has certainly been an excellent vehicle for keeping policy dialogue between the Indonesian government and the major donors. However, development needs of the country (and the provinces) has recently become so diversified that the traditional way of financing may no longer achieve the objective. For example, a program (either for export expansion or employment generation) may require not only a loan but also a technical assistance grant or even sometimes a private investment. Its executing agency can be a provincial government, or a district government, or even a non-governmental organizations (NGO). A project should be prepared in such a manner that donors can have a clear idea about the need of integrating various cooperation modes.

2. Measures to Support Integrated Development Programming Approach (IDEP-approach)

496. The Team is of the view that the IDEP-approach is applicable to the Region. A development program termed IDEP, which consists of a variety of sectoral sub-projects and sub-programs with various scale of investment and timing of implementation. It is necessary to mobilize all financial schemes available domestically and overseas, private and public, as well as to devise new schemes for financing small- and medium-scale projects such as establishing agro-industries on an experimental basis.

497. In the implementation of IDEP, the role of local governments is particularly important. In order to successfully implement the IDEP approach, it is essential to strengthen their capability of planning, coordinating the works under various ministries and departments of central and local governments, monitoring the progress of projects and adjusting to the situation in and outside the IDEP area.

3. Management of IDEP

498. From the institutional and managerial viewpoints, some unit is to be established in order to expand and to increase the technical, financial and institutional capabilities of local governments, particularly those of BAPPEDAS TK I. Regional development will only be successful with the local governments taking the leading role in planning, implementation and coordination of regional development programs, while the role of central government will be mainly to provide technical guidance for the smooth implementation of development activities. In other words, the institutional and managerial objectives of taking IDEP approach are:

- (i) to strengthen local government responsibility for regional development planning, implementation and operation

- (ii) to improve and strengthen local government initiatives for resource mobilization and financial management
- (iii) to raise staff capabilities of development planning and administration in local government
- (iv) to establish information systems of identifying and appraising local needs with close coordination with local organizations such as Kanwils, Dinas, BAPPEDAS TK II, BKPM, etc.

499. After the completion of the present study, IDEPs are expected to be fit into the Indonesian regional development planning and implementation system by the initiatives of Indonesian ministries and agencies of the central government and development organizations in the provinces. For the implementation of IDEPs, it may not be necessary to set up a new institution. However, it is advisable to give the following responsibilities, to coordinate and promote IDEPs both at central and provincial levels, to one of the existing regional planning and implementation machineries which would be fully utilized and further strengthened in order to cope with their roles more efficiently and effectively. One problem is how to attract young staff who is willing to go to remote areas such as IDEPs. A little additional salary incentives and more promotion opportunities would help a great deal those who want to join nation's development work in the field voluntarily. It would be noted that one of the secrets of the post-war Japan's reconstruction was the central government's decision to adopt this policy since early 1950s.

500. Indonesia has already accumulated the experience of implementing integrated regional development for more than ten years since 1978/79 in the form of Provincial Development Program (PDP) which is a result of the Indonesian government and USAID cooperation or under the title of Area Development Program (ADP) by other donors. The concept, approaches and strategies of IDEP are apparently similar to those of the existing PDP/ADPs, but more production-oriented basically. The width and varieties of the scope of IDEPs and their scale of expected investment are also larger than those of PDP/ADPs. These differences have been inevitable to form the IDEP approach when the Indonesian governments' decisive efforts have been addressed to fully integrated regional development in Repelita V. In this context the IDEP concept would influence the future of Indonesian regional development and, therefore, their activities need to be closely monitored and supported by central ministries and agencies concerned.

501. Implementation of IDEPs should be coordinated at the central as well as the provincial level. The coordination at the central level may have the following objectives:

- (i) To develop concepts, policies and strategies of IDEP;
- (ii) To formulate IDEP Long-Term (twenty years), Medium-Term (five years) and Annual Programs for each IDEP;
- (iii) To coordinate and monitor the implementation of the integrated programs by identifying problems and seek their solution through interagency consensus;
- (iv) To develop and guide cooperation with national and international agencies;
- (v) To hold at least quarterly meeting; and

- (vi) To submit the results of the meetings to the chairman of BAPPENAS with copies to the Ministers of Ministries concerned.

The coordination at the provincial level may be led, by BAPPEDA TK. I. Its functions for IDEP implementation include:

Planning Function

- (i) To identify development opportunities in the IDEP area and to put priorities;
- (ii) To prepare and submit the plans for IDEP long-term and medium-term and annual programs to the central coordinating body;
- (iii) To revise IDEP plans/programs based on the lessons learned from monitoring each project under preparation and implementation and taking into account the exogenous factors, which include major changes in the national and international economic environment natural disaster in the Region;

Implementation Coordination Function

- (iv) To coordinate among ministries and agencies at various local levels with reference to the technical and financial implementation of projects in IDEP;

Monitoring Function

- (v) To monitor the progress of IDEP and its projects;
- (vi) To evaluate social, economic and cultural effects of IDEP projects; and
- (vii) To prepare reports and statistics on IDEP.

In order to carry out the above functions, it may be advisable to request technical and financial cooperation from aid agencies, which could include (1) despatch of experts for planning and administration, (2) training of staff in charge of IDEP, and (3) provision of equipment including hard- and software of micro computers.

X. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions of the Study

502. During these 20-year periods starting from Repelita I in 1969, the Indonesian economy has achieved considerable success and attained self-sufficiency in rice. However, the continuous fall of the prices of oil/gas and primary products starting from the early 1980s, it faced serious deficit in balance of payment. In order to cope with these difficulties, the Government introduced a series of economic stabilization program and structural adjustments since 1983. They included budgetary cuts, tax reforms, devaluations of Rupiah, promotion of non-oil/gas exports, privatization, decentralization and deregulation in production, investment, transportation and financial and banking sectors. The IGGI supported these Government's efforts with a large amount of special assistance including policy-based program lending and local cost financing.

503. Under these circumstances, Repelita V started in April 1989 with two major targets. One is to accomplish the structural adjustment and the other is to build strong springboard to accelerate the country's economic growth into the sustainable "take-off" stage starting from the second 25-year Long-term development in 1994. In order to absorb the increased labor population (11.9 million) during Repelita V period, the Plan determined that the average annual rate of economic growth should be 5%. This Study intended to formulate, as a part of the National Development Plan, an integrated regional development plan of the Region and identify priority projects for implementation during Repelita V and up to 2008.

504. The Region, having 14% of the national land and 11% of the national population, has a set of comparative advantages including abundant natural resources, exportable commodities, the largest industrial base outside Java, relatively well-developed infrastructures, tourist attractions and proximity to Singapore and Malaysia, and the gateway to the Indian Ocean of the Western Pacific Economic Zone to be formed in the near future. The Team's first assumption was that these advantages should be fully utilized to contribute to the national economic growth and that the average annual growth rate of the Region should be one percent higher than that of the nation's.

505. Given the vast land area of the Region and limited financial and human resources, the Team considered it more efficient to select some priority areas first, identify priority projects within those areas, and integrate them sectorally and with proper phasing. This resulted in the creation of 11 Integrated Development Programs (IDEPs), as the central concept of the Study. Adding some outside-IDEP projects, the Team finally selected 219 high priority projects to be implemented during Repelita V, out of 430 projects in the Long List to be implemented during the entire study period 1989-2008.

506. Total investment requirements for the Region during Repelita V are estimated at Rp. 18.3 trillion, of which Rp. 6.4 trillion would come from Government's development budget and the remaining Rp. 11.9 trillion may be mobilized from private sources. These amounts are corresponding to about 6 - 9% of the national investment requirements,

which were planned in the Repelita V. The fund's availability depends, therefore, on whether both the Government's development budget and private investment estimated in the Repelita V are achievable or not.

507. Another key issue would be institutional capability of the Government, particularly of provincial and local governments. These targets are undoubtedly ambitious. However, in view of the successful macro-economic structural changes so far achieved, continuous Government's efforts in deregulation policies, current favorable international prices of oil/gas, people's enthusiasm for development and the political stability of the resource-rich country, the Team is of the view that there is reasonable opportunity to achieve the targets. The Team's recommendations derived from the conclusions of the Study are summarized in the following paragraphs.

B. Recommendations

508. Recommendations on Overall Development Strategy.

- (i) The Region's comparative advantages (with abundant natural resources, exportable commodities, the largest industrial base outside Java, relatively well developed infrastructure, tourist attractions and proximity to Singapore and Malaysia) should be fully developed.
- (ii) "Growth with equity" should be observed as master development strategy, which ensure the Region's potential fully developed with one percent higher annual growth rate of GDP than the national annual growth rate.
- (iii) The four provinces' distinct characteristics and potentials should be fully developed, in due respect to interprovincial linkage, as Medan to be an emerging core of the entire Sumatra in 2008. Less developed west coast should be opened as a gateway of the future West Pacific Economic Zone to huge potential market surrounding the Indian Ocean.

509. Recommendations on Area-based IDEP Approach. In order to maximize the effectiveness of limited financial resources in the vast land area of the Region, an area-based approach called "Integrated Development Program (IDEP)" was selected as the central concept of this Study. The eleven IDEPs are given their respective roles, for which the development should take place. Before a project or projects within one IDEP are selected for implementation, a study on production and marketing of the key commodities in the IDEP is desirable to be undertaken with the following special features of each IDEP in mind.

- (i) Northern Aceh IDEP - A major industrial base on the primary axis, with close interaction with agriculture.
- (ii) West Aceh IDEP - The development base for the entire western side of Aceh: an example of relatively less advanced areas.
- (iii) Metropolitan Medan IDEP - The Center for the Region with strong industrial, agricultural and service activities.
- (iv) West Coast Tapanuli IDEP - A high potential area yet to be developed on the primary axis between Medan and Padang.
- (v) Nias Island IDEP - A model for island development aiming at a higher integration with outside economies.

- (vi) Minang Highland IDEP - the agricultural center for the Region, located on the primary axis and on a major gateway to the west.
- (vii) South Sijunjung IDEP - A resettlement area with high potential for commercially-oriented agriculture.
- (viii) Mentawai Islands IDEP - A model for environmentally conscious development in harmony with the traditional way of life.
- (ix) Rokan Basin IDEP - A high potential resettlement area combining NES/PIR and food crop production.
- (x) Indragiri River IDEP - A model for interprovincial river basin development and management with special attention to low-land swamp.
- (xi) Riau Islands IDEP - a highly export-oriented area with high potential in fisheries.

510. Recommendations on Sectoral Development Strategy. Both within and outside IDEP, the following sectoral development strategy should be observed, when a project is selected for implementation.

- (i) Agriculture: while sustaining rice self-sufficiency, agricultural diversification (in food crops with balanced nutritions, livestock and post-harvest) with substantial inputs of technical cooperation would be the single most important strategy to ensure increasing productive and remunerative employment and to encourage export of palm oil, rubber, coffee and other agriculture-originated products which account for majority of the non-oil export.
- (ii) Fishery: In view of already too crowded and resources-depleting east coast fishery, future trends would be shifted more to the west coast and marine fishery, which requires strengthening infrastructure, credit and technical cooperation in both public and private sectors in the west coast.
- (iii) Industry: the Region accommodates an impressive number of industries based on locally available natural resources such as cement, fertilizer, aluminium articles, pulp and paper, palm oil, rubber processing, fish processing. But it should overcome disadvantages including inconvenient access to foreign markets which require efficient administrative and financial services. It should also create favorable climate and business infrastructure conducive to private enterprises, such as electricity, telecommunication, transportation, water, education and health facilities.
- (iv) Water: a comprehensive watershed management study including irrigation, flood control, industry and domestic use and hydro-power generation is a vital element of socio-economic development. Particularly, irrigation is required innovative technology serving not only for sustaining self-sufficiency in rice but also for more productive crop diversification. A new entrepreneur of selling abundant and high-quality water may also interest public as well as overseas dry countries.
- (v) Energy: in order to save limited oil resources, systematic efforts should be continued with focus on efficient production of coal, natural gas and renewable energy resources such as

hydro-power and sunshine. On the other hand, dissemination of fuel-efficient stove will contribute to save energy consumption.

- (vi) **Transportation and communications:** the road network is the prerequisite of area development to break closed self-contained societies leading to more rational land use and environmental protection. A chain of west coast ports and revitalization of mass-transit railways may be considered by targeting the next century. Local telephone network and rural telecommunications are both urgently required together with telephone outside plant maintenance centers.
- (vii) **Urban and Rural Development:** based on the spatial planning and along the two population-transportation axes of the Region, efficient urban-rural linkages should be a leading principle of regional development. Particularly, secondary cities urban development including drainage, solid waste, road and water supply will receive high priority. Area development type of rural development should also be encouraged to give equal opportunity to underserved, poor and isolated remote areas.
- (viii) **Tourism:** international, interregional and interprovincial travel routes and package tour programs should be first planned. Establishment of the Tourism Management Center is urgently required, along the construction of minimum infrastructure, while other activities will be left to the private sector.
- (ix) **Environment, Forestry and Natural Resource Management:** in accordance with the Government Regulation (No. 29, year 1986), all development projects should take environmental aspect into consideration. On the other hand, forestry production should be continued to meet industrial and energy needs by way of better natural resources management. A well-coordinated research network should be established, before massive investment opportunities are identified for the purpose of conservation of limited resources, rich biological and animal genetics and environmental protection on the global basis including land, water, air and climate.
- (x) **Employment:** at least one million people should be absorbed in the Region during Repelita V period alone. To avoid exploitation of unemployment in the urban areas, 75% of the total population should be accommodated in the rural areas which give sufficient job through the development of diversified agriculture, small-scale, traditional and informal enterprises as well as cooperatives.
- (xi) **Other sectors:** education, human resources development, health, housing, youth, women, culture, cooperative, science/technology, etc. are not specifically mentioned in this Report, but they are all important and should be implemented along the line of the national policy.

511. Recommendations on Private Resource Mobilization. Since about 65% of the required funds should be mobilized by the private circle, it is essential for the Government to create favorable climate in which the political stability insures risk-free investment, the on-going deregulation measures result in procedural efficiency, and the adequate infrastructures attract both domestic and international private enterprises to come in. Private investors are requested to endeavor to find ways of positive participation in the development without delay. Further, the Government's well-organized effort is

urgently recommended to attract international private investors, particularly at this crucial time when the rising wage level in the newly industrializing areas such as Thailand, Malaysia and even Jakarta makes their growth slow down near saturation points.

512. Recommendation on Closer Consultation with Donors. It is also recommendable for the Government to consult with donors and request their cooperation more effectively. Presently, the IGGI contributions go to too many nation-wide investment programs with emphasis on Java, leaving only less than 20% of the project assistance to be addressed specifically to outer islands. It may be more effective for donors to finance to specific projects including IDEPs. Further, the financial capability of the provincial governments should be augmented, through appropriate financing modes, to support Government's decentralization policy. Donors are also requested to consider a variety of assistance modes suitable for implementation of integrated projects, including ODA (loan or grant financial assistance and technical cooperation), private investments, advisory services, non-governmental organization's participation and their combinations.

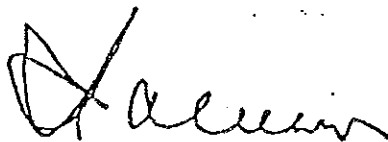
513. Recommendations on Institutional Innovations. More authority of the provincial and local governments should be given administratively and financially, along the line where the Regional Government Act was promulgated in 1974. In particular, BAPPEDA's capability in planning and coordinating regional development programs must be urgently strengthened. It is also important to attract young staff who are willing to go to remote areas such as IDEPs, by providing a little additional incentives in terms of salary, better living conditions, or future promotion opportunities. Advisors who are recruited either from domestic or foreign sources and stay in either Jakarta or provinces may also be helpful to keep watch IDEP ongoing at all the times. A set of JICA's final reports on LTA-78 may be utilized effectively for the Government to formulate its own strategy and action programs for its implementation including personnel assignments and budget allocations.

APPENDIX 1. Scope of Work

SCOPE OF WORK
FOR
THE STUDY
ON
THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR
THE NORTHERN PART OF SUMATERA

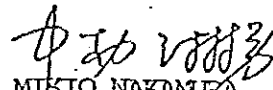
AGREED BETWEEN
THE MINISTRY OF PUBLIC WORKS
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

JAKARTA JANUARY 13 ,1988



Ir. SOENARJONO DANOEDJO

Director General of Human
Settlement;
Ministry of Public Works.



MIKIO NAKAMURA

Leader of the
Preliminary Study
Team.
Japan International
Cooperation Agency.

SCOPE OF WORK
FOR
THE STUDY
ON
THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR
THE NORTHERN PART OF SUMATERA.

I. INTRODUCTION.

In response to the request of the Government of the Republic of Indonesia, the Government of Japan, in accordance with the relevant laws and regulations in force in Japan, decided to conduct the study on the Integrated Regional Development Plan for the Northern Part of Sumatera in the Republic of Indonesia (hereinafter referred to as "the Study").

The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will undertake the study, in close cooperation with the authorities of the Republic of Indonesia.

The Directorate General of Human Settlements (hereinafter referred to as "DGHS"), The Ministry of Public Works shall act as counterpart agency to the Japanese study team and also as coordinating body to other relevant organizations for the smooth implementation of the Study.

II . BACKGROUND OF THE STUDY.

Over the last two decades, Indonesia has been successful in establishing an economic growth by planned development and policy to attract foreign capital and investment.

In spite of favorable macro-economic performance, the Indonesian economy has developed structural imbalances as a result of rapid growth, which among other things caused by excessive dependence on the oil sector and more pronounced concentration of economic activities and population in the island of Java.

In addition, the large drop in oil prices in recent years posed a major threat to the stability of the Indonesian economy. For the establishment of a well-balanced economic structure, promotion of non-oil export development, employment creation and amelioration of regional disparity are currently among the most important goals of Indonesia.

The primary objective of the proposed study, therefore, is to formulate a comprehensive regional development plan as integral part of the national strategy and to identify basic guidelines for medium and long-term economic development in the region namely Aceh, North Sumatera, West Sumatera and Riau.

III. OBJECTIVES OF THE STUDY.

The objectives of the study are :

1. to formulate the Integrated Regional Development Plan as part of National Development Plan for the purpose of achieving harmonious socio-economic and physical development within the study region taking into due consideration the importance of coordination among past and on-going studies.
2. to identify priority projects and areas within the context of the above plan,
3. to make pre-feasibility studies of high priority projects, and
4. to strengthen the planning and coordinating capability of Provincial Planning Boards.

IV. STUDY REGION.

The study region will cover the four provinces that comprises the Northern Sumatera Region, namely Aceh, North Sumatera, West Sumatera and Riau.

V. SCOPE OF WORK.

1. General,

- (1). The Integrated Regional Development Plan will encompass the time span of 20 years.

- (2). The Study aims at formulating concrete and specific long-term development strategies for the region.
- (3). The Study will consider the importance of inter-spatial and inter-sectoral linkages in the development strategy.
- (4). As main sources of the Study, existing study reports and data will be fully utilized.

2. Major Items of the Study.

Step 1. Analysis of the Present Situation for Development.

The present situation of basic natural-physical condition, socio-economic situation and sectoral development will be analyzed.

Past and on-going studies will be reviewed. Then, current constraints for development will be identified.

Step 2. Identification of Development Potentials.

Development potentials in each sector will be assessed on the basis of the data collected in Step 1 from the viewpoint of utilizing local natural resources and establishing closer relationships between the economy of the region and that of the rest of the country.

Major constraints will be examined and specific measures to overcome them will be identified.

Step 3. Establishment of Development Targets, and Preparation of overall Development Framework.

Establishment of development targets sectoral as well as spatial, keeping their consistency with the framework of the basic national policies.

Three basic requirements, namely narrowing of inter and intra Provincial disparities in terms of level of welfare, increasing the non-oil production sectors and expansion of the Region's employment opportunity, will be reflected for that framework.

Step 4. Preparation of Regional Development strategies.

Regional Development strategies will be prepared according to the development framework set up in Step 3.

In preparing the strategies, the following items will be examined as well as the prospects of the international economic environment and national development":

1. the direction for diversifying the regional economic structure,
2. policy alternatives to increase outputs of the productive sectors,
3. policy to minimize inter- and intra-regional income disparities,
4. measures to expand the region's employment opportunity,
5. alternative land use,
6. specialization and integration among the area in the Region,
7. appropriate scales and mix of basic infrastructures to serve development of the productive sectors, and
8. environmental impacts.

Step 5. Preparation of an Integrated Regional Development Plan.

Subject to the Regional Development Strategies prepared in Step 4, an Integrated Regional Development Plans will be established and then high-priority projects will be selected. Then, Sectoral Development Plan of the Study region will be prepared.

Step 6. Identification of Possible Priority Projects.

In view of the Integrated Regional Development Plan prepared in Step 5, priority projects or project packages for the selected areas will be carefully identified.

Step 7. Preparatory Study of High-priority Projects.

Pre-feasibility studies of the high-priority projects or project-packages will be conducted to assess the preliminary technical, financial, and economic soundness, and in the conduct of these studies, the nature of constraints which might affect the feasibility and implementation of the projects will be examined. Financial possibility, such as cost-sharing between the Central and the Provincial Governments, and between the public and the private sectors will be studied for the implementation of the projects.

VI. STUDY SCHEDULE.

The Study will be executed in accordance with the attached tentative schedule.

VII. R E P O R T S.

The JICA shall prepare and submit the following reports in English to the Government of Indonesia.

1. Inception Report.

Fifty (50) copies within two (2) months from the commencement of the Study.

2. Progress Report (I).

Fifty (50) copies within four (4) months from the commencement of the Study.

3. Progress Report (II).

Fifty (50) copies within nine (9) months from the commencement of the Study.

4. Interim Report.

Fifty (50) copies within thirteen (13) months from the commencement of the Study.

5. Progress Report (III).

Fifty (50) copies within eighteen (18) months from the commencement of the Study.

6. Draft Final Report.

Eighty (80) copies within twenty-one (21) months from the commencement of the Study.

The authorities concerned shall submit their comments within two (2) months after the receipt of the Draft Final Report.

7. Final Report

One hundred (100) copies within one and a half (1.5) months after receipt of the comments from the authorities concerned on the Draft Final Report.

VIII. UNDERTAKING OF THE GOVERNMENT OF INDONESIA.

The Government of Indonesia shall accord privileges and other benefits to the Japanese study team, and through the authorities concerned, take necessary measure to facilitate the smooth implementation of the Study.

1. The DGK shall make necessary arrangement with the cooperation of other relevant organizations for the followings :

(1) to secure the safety of the Japanese study team,

(2) to permit the member of the Japanese study team enter, leave and sojourn in Indonesia for the duration of their assignment therein, and exempts them from alien registration requirements (and consular fees),

(3) to exempt the members of the Japanese study team from taxes, duties and other charges on equipment, machinery and other materials brought into Indonesia necessary for the implementation of the Study,

- (4) to exempt the members of the Japanese study team from income tax and other charges imposed on, or in connection with, any emoluments or allowances paid to the members of the Japanese study team for their service in connection with the implementation of the Study.
 - (5) to provide necessary facilities to the Japanese study team for remittance as well as utilization of funds introduced into Indonesia from Japan in connection with the implementation of the Study.
 - (6) to provide medical services as needed. Its expenses will be chargeable on the members of the Japanese study team.
 - (7) to secure permission to take all data, documents and necessary materials related to the Study out of Indonesia to Japan by the Japanese study team, and
 - (8) to facilitate prompt clearance through customs and inland transportation of equipment materials and supplies required for the Study and of the personal effects of members of the Japanese study team.
- 2.
2. The DGJK shall, at its own expense, provide the Japanese study team with the followings, in cooperation with other relevant organizations:
- (1) available data and information related to the Study.
 - (2) counterpart personel from Central and Provincial governments.
 - (3) suitable office with necessary equipment both in Jakarta and in Medan.
 - (4) credential or identification cards.

3. The government of Indonesia shall bear claims, if any arises against the member of the Japanese study team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or wilful misconduct on the part of the members of the Japanese study team.

IX. UNDERTAKING OF THE JICA.

For the implementation of the Study, the JICA shall take the following measures:

1. to dispatch at its own [^]expense, study team to Indonesia.
2. to provide equipment necessary for the Japanese study team, and
3. to perform technology transfer to the Indonesian counterpart personnel in the course of the Study.

X. CONSULTATION.

The JICA and the DGCK will consult with each other in respect of any matter that is not mentioned in this document, and may arise from, or in connection with the Study.

TENTATIVE STUDY SCHEDULE

ACTIVITIES	STEPS	1988												1989			1990												
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
PRELIMINARY STUDY (S/W mission)		[Horizontal bar]																											
A. Study of Present Development Conditions, and Evaluation of Development Potentials.	1,2	[Horizontal bar]																											
B. Formulation of Development Framework and Strategies.	3,4																												
C. Preparation of Integrated Regional Development Plan	5																												
D. Identification of Possible Priority Projects.	6																												
E. Preparatory Study of High - Priority Projects	7																												
REPORT																													
WORKSHOP - SEMINAR																													

□ : Activities done in Japan
 ▨ : Activities done in Indonesia.

△ Inception
 △ Progress I
 △ Progress II
 △ Progress III
 △ Draft Final
 △ Final

A W1
 A W2
 A W3
 A W4

MINUTES OF MEETING
BETWEEN DGJK AND JICA PRELIMINARY STUDY TEAM
ON
THE SCOPE OF WORK FOR THE STUDY
ON
THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR
THE NORTHERN PART OF SUMATERA

The Japanese Preliminary Mission for the Integrated Regional Development Plan for the Northern Part of Sumatera (The Mission) visited Indonesia with the purpose to work out and conclude the Scope of Work on the Study of the Integrated Regional Development plan for the Northern Part of Sumatera (the Study).

During the stay in Indonesia the Mission had a series of discussions with the Director General of Human Settlements and other relevant authorities as shown in the Attachment.

In the course of discussions, some remarks were made by the Indonesian side, (The DGJK) on several points which were not included in the Scope of Work and the main points agreed to, are summarized as follows :

1. The DGJK requested to start the study in the earliest possible time. The Mission indicated that it will make effort to start the Study within March 1968.
2. The DGJK requested that the full scale study team will provide ideas to support the preparation work for the provisional REPELITA V of the four provinces of the Northern Part of Sumatera.
3. The DGJK felt that the Integrated Regional Development Plan will be a very important document and it will be in great demand in the region as well as outside the region. Therefore, fifty (50) copies as proposed for the Final Report will not be enough. The DGJK proposed the number should be raised to one hundred (100). The Mission agreed to the proposal.

4. The DGJK requested the following staff inputs for the Study.

1. Key staff.

1. Project Manager/Regional, Socio-Economist
2. Regional Planner
3. Agricultural Specialist.
4. Industrial Specialist.
5. Transport Planner.
6. Water Resources planner.

2. Others

1. Agronomist
2. Forestry Specialist
3. Fishery Specialist
4. Energy Specialist
5. Mining Specialist
6. Civil Engineer
7. Tourism Specialist
8. Urban Planner
9. Project Economist
10. Hydrologist
11. Others:

The Mission stated that in principle the request is understandable but explain that the finalization of staff input must be subject to approval of Japanese authorities concerned.

5. It was requested by the Mission to the DGJK to provide appropriate number of counterpart to the full scale Study Team. The DGJK agreed and requested to the Mission that the number and fields of counterpart will be informed at the beginning of the Study.

6. The DGJK felt that it is very difficult "to secure permission to take all data", especially some kind of data like air photo and maps in certain areas, due to the Government Regulation, and the DGJK proposed to amend the

said paragraph as "to provide all available data". The Mission understood the Indonesian situation, but as the expression of that item is commonly used in all other projects in Indonesia between JICA, the Mission requested to leave the paragraph as it is, and the Mission promised to convey Indonesian proposal to the authorities concerned in Japan. At the same time, the Mission proposed to recommend to the both governments to amend this item at the next Annual Technical Cooperation Consultation Meeting. The DGTK agreed to the proposal.

7. The DGTK requested to the Mission to provide in-country and overseas training as part of the project.

The Mission understood the need and indicated that it will make effort to secure at least one counterpart training in Japan in FY 1988.

The Mission further explained that the effect of transfer of technology to counterparts should be normally achieved through day to day cooperative work between members of JICA full scale Study Team and counterparts of the Indonesian side during the Study period, in Indonesia as well as in Japan.

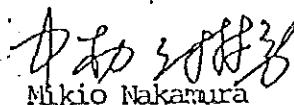
8. The DGTK explained the role of the universities in the preparation of provincial development plan. The Mission understood such participation issue should be adequately taken into account.

Jakarta, January 11, 1988



Ir Soenarjono Dancedjo

Director General of Human
Settlements,
Department of Public Works



Mikio Nakamura

Leader of The Preliminary
Study Team,
Japan International
Cooperation Agency

APPENDIX 2. Minutes of Workshops

MINUTES OF DISCUSSION
OF THE FIRST WORKSHOP
ON
THE STUDY ON THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR THE NORTHERN PART OF SUMATRA

The JICA Team for the Study on the Integrated Regional Development Plan for the Northern Part of Sumatra (the Study) prepared a draft Progress Report I (the Draft) and submitted it to the Directorate General of Human Settlement (DGCK), the Ministry of Public Works.

DGCK distributed copies of the Draft to the Ministry of Home Affairs, BAPPENAS, the Ministry of Public Works and the provincial governments and BAPPEDA's of the four provinces concerned to solicit their comments on it and convened the first Workshop, in cooperation with JICA, on 1 and 2 June 1988 in Jakarta.

During the course of discussions at the Workshop, several remarks were made by the Indonesian participants on the implementation of the Study as well as the content of the Draft. Main points are summarized as follows:

1. The Workshop confirmed the acceptance of the objectives and overall time frame of the Study, as stated in the Scope of Work and iterated in the Inception Report.
2. The Workshop agreed to the three principles, as proposed on page 135 of the Draft, to be the guidelines of the Study.
3. The Workshop fully endorsed the JICA Team's basic intention to submit the respective Reports aiming at a specific target on the Indonesian time schedule for development planning and aid coordination, as indicated in the Figure on page 137 of the Draft, so that the Study's outcome can be effectively used by the Indonesian Government to plan and implement its development program.
4. The Indonesian participants requested that the subsequent Reports be finalized, similarly to this Progress Report I, after incorporating comments expressed at the respective workshops, and that the workshop should be more a formal procedure of report finalization and policy guidance than a meeting merely for technical discussion.
5. The Indonesian participants requested that sufficient time be given to study the draft reports and, if it is desirable, that some of the subsequent workshops be held in the four provinces concerned.

6. The Indonesian participants suggested that the Study should investigate an appropriate concept of regionalization for the Northern Part of Sumatra so that the development and investment plan can be prepared according to the principle of complementarity and comparative advantage. The JICA Team agreed to this suggestion and to carry out necessary study in later stages.

7. The Indonesian participants also requested the JICA Team to speed up the establishment of the development framework and strategies, both macroeconomic and physical, which are to be the main task of Stage II.

8. The Indonesian participants suggested that the Study pay more attention to the institutional and social aspects, particularly at the local government and grassroot levels, NGO activities, and the role of the private sector.

9. The Indonesian participants also suggested that telecommunication, trade and human resources be dealt with in the Study by appropriate experts in the following stages.

10. The Indonesian participants also suggested that overseas study tours and training for Indonesian officials should be considered. Specifically, they suggested a study tour for the four BAPPEDA chairmen (or their deputies) and representatives from the three Ministries constituting the Steering Committee, and training for some of the counterpart staff.

11. The JICA Team appreciated valuable comments and suggestions given at the Workshop. The Team will incorporate them, as far as possible, into the final Progress Report I which will be resubmitted to DGCK at the earliest possible time.

12. Both parties agreed that the Workshop was extremely valuable in exchanging views and contributed a great deal to more positive cooperation on the Study in the future.

Jakarta, 2 June 1988



Ir. Suyono MSc

Director of City and
Regional Planning
Directorate General
of Human Settlement
Ministry of Public Works



Dr. Kunio Takase

Team Leader
JICA Study Team
for the Integrated
Regional Development Plan
for the Northern Part
of Sumatra

MINUTES OF DISCUSSION
OF THE SECOND WORKSHOP
ON
THE STUDY ON THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR THE NORTHERN PART OF SUMATRA

The JICA Team for the Study on the Integrated Regional Development Plan for the Northern Part of Sumatra (the Study) prepared a draft Progress Report II (the Draft) and submitted it to the Directorate General of Human Settlements (DGCK), the Ministry of Public Works.

DGCK distributed copies of the Draft to the Steering Committee members (Ministry of Home Affairs, BAPPENAS, and Ministry of Public Works), other ministries and agencies concerned (Ministry of Industry, Ministry of Mining, Ministry of Tourism, Post and Telecommunications, Ministry of Agriculture, Ministry of Transportation, Ministry of Forestry, Ministry of Population and Environment, Investment Coordinating Board) and the provincial governments and BAPPEDAs of the four provinces concerned to solicit their comments on the Draft. DGCK subsequently convened the second Workshop, in cooperation with JICA, on 3 October 1988 in Jakarta.

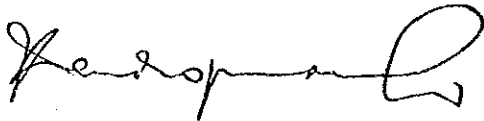
During the course of discussion at the Workshop, several remarks were made by the Indonesian participants on the implementation of the Study as well as the content of the Draft. Main points are summarized as follows:

- Can't that the take-off period for Indonesia's development is Repelita VI.*
1. The Indonesian participants pointed out that the priority order of the three national development goals during Repelita V is : (i) equity, (ii) growth, and (iii) stability. The JICA Team agreed to modify their statements in the Draft concerning ~~the national priority order~~ accordingly. *these points*
 2. The Workshop generally endorsed the goals, policies and strategies for the development of the Region as specified in the Draft, with the following comments :
 - (i) The priority order of the national development goals may not need to apply uniformly to all regions or sectors in Indonesia; and
 - (ii) Due attention should be paid to equity within the Region even though economic efficiency is adopted as the main theme of its development.
 3. The Workshop also endorsed the macroeconomic and spatial framework and the concept of development district as described in the Draft.
- rb*
rb

4. With regard to priority sectors of development, the Workshop supported the JICA Team's general approach, but offered a number of comments including one that individual sectoral strategies should be integrated into cross-sectoral strategies.
5. The Indonesian participants appreciated the JICA Team's effort to include analysis on "finance and institution" in the Draft. While this analysis is a useful reference, they stressed the need of provincial breakdown and of more detailed analysis of institutional aspects.
6. The Workshop approved the JICA Team's tentative work program for stage 3 as indicated in para 207 of the Draft.
7. The JICA Team explained the procedure of finalizing Progress Report II as follows : The Team will finalize the Report after incorporating comments expressed at the briefing sessions with ministries and at the Workshop, and by making necessary improvements and adding a long list of projects/programs. The finalized Report, upon JICA's approval, will be submitted to DGCK in early November. DGCK will then distribute the copies to the government agencies participating in the Workshop and major aid agencies so as to prepare for a series of consultation meetings with the JICA Team on the priority project/program list, which are tentatively scheduled in late November and early December. The JICA Team subsequently requested that, in order to keep this tight time schedule, the Workshop delegate the Team to modify the content of the Report without further consultations with the Indonesian counterpart on condition that no major alterations are made. The Workshop accepted this request.
8. The Indonesian participants reiterated their suggestions which were agreed at the first Workshop, first, that telecommunications, trade, and human resources (including education, employment and health) be dealt with in the Study by appropriate experts, and, second, that overseas study tours be implemented. The JICA Team agreed to continue their effort to materialize these suggestions. DGCK also agreed to provide necessary data on time to expedite the application procedure of the overseas study tours.
9. The JICA Team appreciated the keen interest in and full support for this Study shown by respective participants. The Indonesian participants expressed their satisfaction with the Team's intension that the Study's outcome be used as much as possible for the finalization of Repelita V, and appreciated the Team's efforts to this end and the Study's good progress.
10. The Indonesian participants recognized that there still remained small differences in views (e.g., strategies, development districts) between the two parties, which could

- be narrowed down as much as possible by taking into account the written comments to be sent to the JICA Team by 14 October 1988. Although the JICA Team's professionalism should be respected, basic policies of the governments (central and provincial) should also be followed so that the Team's recommendations can be smoothly implemented. They also looked forward to reviewing a list of projects/programs since the most important purpose of this Study is to facilitate project/program implementation.
11. Both the parties agreed that the second Workshop provided a valuable opportunity for exchanging views among the participants, Indonesian and Japanese, central and provincial, and that this would contribute much to a more successful implementation of the government's development efforts.

Jakarta, 3 October 1988



Ir. Hendropranoto Suselo, mpw.

Director of City and
Regional Planning
Directorate General
of Human Settlements
Ministry of Public Works



Dr. Kunio Takase

Team Leader
JICA Study Team
for the Integrated
Regional Development Plan
for the Northern Part
of Sumatra

MINUTES OF DISCUSSION
OF THE THIRD WORKSHOP
ON
THE STUDY ON THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR THE NORTHERN PART OF SUMATRA

The JICA Team for the Study on the Integrated Regional Development Plan for the Northern Part of Sumatra (the Study) prepared a draft Interim Report (the Draft) and submitted it to the Directorate General of Human Settlements (DGCK), the Ministry of Public Works.

DGCK distributed copies of the Draft to the Steering Committee members (Ministry of Home Affairs, BAPPENAS, and Ministry of Public Works), other ministries and agencies concerned (Ministry of Industry, Ministry of Mining, Ministry of Tourism, Post and Telecommunications, Ministry of Agriculture, Ministry of Transportation, Ministry of Forestry, Ministry of Population and Environment, and Investment Coordinating Board) and the provincial governments and BAPPEDAs of the four provinces concerned to solicit their comments on the Draft. With its invitation letter issued by BAPPENAS to all the parties concerned, the third Workshop was subsequently held, in cooperation with JICA, on 9 February 1989 at the Hotel Sari Pacific in Jakarta.

Throughout the course of discussion at the Workshop, a very serious, frank and constructive exchange of views prevailed, resulting in several important agreements between the Indonesian participants and the JICA Team on the prompt implementation of the Study as well as the content of the Draft. Main points are summarized as follows:

1. The Workshop generally endorsed the goals, objectives and the overall strategy (efficiency cum equity) with a comment that the most difficult goal to achieve may be the economic integration of the Region and, therefore, a strategy for this purpose should be set out.
2. The Workshop ^{appreciated} ~~endorsed~~ the concept of the Integrated Development Program (IDEP) proposed by the JICA Team. Upon ^(deliberation) ~~approval~~, the JICA Team suggested that some of the nine IDEPs be studied further in the next stage. The Indonesian participants selected

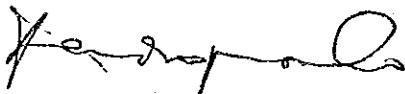
the following five IDEPs as the subject of preparatory study during Stage IV starting in June 1989:

Aceh	West Aceh IDEP
North Sumatra	Southern Tapanuli IDEP Nias IDEP
West Sumatra	South Sijunjung IDEP
Riau	Riau Swamp IDEP

3. The Indonesian participants further requested that certain preparatory work similar to IDEP planning be done for Mentawai Island in West Sumatra and for Riau Islands in addition to the five sites mentioned above.
4. The Workshop generally approved the long list of projects/programs and the profiles of short-listed projects/programs recommended for Repelita V, with the following comments:
 - (i) Though indicative they are, and not all projects/programs are for external financing, the list and profiles will be useful for the Indonesian participants to seek donors' cooperation;
 - (ii) Those projects/programs which are important to achieve the regional integration should be more explicitly identified; and
 - (iii) It should be clarified that the list is not intended to be exhaustive, in order to avoid a misconception that those projects/programs not listed there are unimportant.
5. The Indonesian participants pointed out several errors in the Draft and offered various suggestions to improve on the Draft in its finalization. Among them the following four are important:
 - (i) *The concept of minimum infrastructure may need some more clarification;*
 - (ii) Environment should not be confined to the natural one, but also imply the social one including pollution and traffic jam, etc.;
 - (iii) Geological condition should be dealt with as a factor affecting development activities; and
 - (iv) A list of references should be added to the Report.

6. The Indonesian participants suggested that more analysis be done on such subjects as food production, interprovincial trade, employment and social services, within the limitation of the Study's terms of reference.
7. While the Indonesian participants appreciated JICA Team's accomplishment to add appropriate experts on telecommunications and tourism, they suggested that institutional, employment and spatial planning aspects be appropriately dealt with in the following stages. The Workshop also endorsed that the recent offer by JICA to invite two senior government officials to an overseas study tour in Japan in May 1989 be accepted, in addition to three government officials who are already scheduled to visit Japan in March 1989.
8. The Workshop confirmed that the Indonesian government will utilize the Interim Report as much as possible, upon the formal submission by the JICA Team in mid-March 1989, throughout the budget preparation process for 1989/90 including IGGI proposals with BAPPENAS' initiative.
9. Both the parties agreed that the third Workshop proved another valuable opportunity to facilitate the government's decision making for the first-year operation program of Repelita V.

Jakarta, 9 February 1989



Ir. Hendropranoto Suselo, mpw.

Director of City and
Regional Planning
Directorate General
of Human Settlements
Ministry of Public Works



Dr. Kunio Takase

Team Leader
JICA Study Team
for the Integrated
Regional Development Plan
for the Northern Part
of Sumatra

MINUTES OF DISCUSSION
BETWEEN THE STEERING COMMITTEE AND THE JICA TEAM
ON
THE STUDY ON THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR THE NORTHERN PART OF SUMATRA

1. The JICA Team for the Study prepared a draft Progress Report III and submitted it to the Directorate General of Human Settlements (DGCK), the Ministry of Public Works, on 25 September 1989. DGCK distributed copies of the Draft to the Steering Committee members (Ministry of Home Affairs, Bappenas, Ministry of Public Works and Provincial Governments of Aceh, North Sumatra, West Sumatra and Riau) and issued an invitation letter to the Fourth Workshop to the four Provinces.
2. A series of the Fourth Workshops were successfully held during 3-6 October in the four provincial capitals and generally appreciated three items requested by the JICA Team, as indicated in para 5, page 200 of the Draft Progress Report III. However, the Jakarta session of the Fourth Workshop, originally scheduled on 9 October, was not held due mainly to heavy workload on DGCK during that period. Instead, a small meeting was suggested to be held between the Steering Committee and the JICA Team to discuss matters. The Meeting was convened by Dr. Sugijanto Saegijoko, Deputy Chairman of Bappenas, on 10 October 1989. A list of the participants is attached as Annex.

3. After reviewing the past performance of the Study and briefing on the Draft Progress Report III, the Meeting

decided an internal meeting within the Indonesian Government be planned to be held before 20 October, so that various

comments in the internal meeting to be transmitted to Tokyo.

The Meeting also discussed several important points and reached the following major conclusions, subject to further comments above.

(i) The Meeting noted the JICA Team's work during Stage IV had been done in accordance with the Third Workshop's agreements,

except that a number of IDEPs for detailed study was increased from 7 to 8 by adding the Northern Aceh IDEP upon the request

by the Government.

(ii) The Meeting generally appreciated the IDEP concept and approach, as described in the Draft Progress Report III.

(iii) The Meeting will consider the lists of priority projects/programs within and outside the 8 IDEPs, which are subject to

formal selection procedures by the Government agencies concerned.

(iv) The Meeting will consider the idea of the Management Organization to promote IDEP, subject to approval of the necessary

procedures. In addition, the Meeting felt it desirable to have an advisor to be placed in Indonesia to promote IDEPs.

(v) The Meeting requested the JICA Team to elaborate on spatial planning of the Region.

(vi) The Steering Committee will convey further comments, if any, to the following address via telex, facsimile or courier service

The comments shall be delivered by 20 October 1989:

K. TAKASE, International Development Centre of Japan,
Shinva Daini Toranomon Bldg. 21-19, Toranomon,
1-Chome, Minato-Ku, Tokyo, 105, JAPAN

Telex: J2E338 DEVCENT

FAX: 03-592-1614

(vii) The JICA Team will incorporate these comments in the draft final report and submit it to DSEIC in mid-December 1989,

based on which, the Fifth Workshop will be held in Jakarta tentatively on Monday, 29 January 1990. Four members of the JICA Team will arrive at Jakarta on 23 January 1990 and leave for Tokyo on 30 January 1990.

(viii) The venue, the agenda, the time table and other details of the Fifth Workshop will be determined in consultation between the Steering

Committee and the JICA Team via later communications.

The Steering Committee will issue the invitation letters by the end of December 1989.

Jakarta, 10 October 1989

Ir. Hendi Sumanoto Suselo, m.p.w.
Director of City and Regional Planning
Directorate General of Human Settlements
Ministry of Public Works

Dr. Kunio Takami
Team Leader, JICA Study Team
for the Integrated Regional
Development Plan for the Northern
Part of Sumatra

Annex List of Participants

1. BAPPENAS

Sugijanto Soegijoko	Deputy V
Manuwoto	Head, Bureau of Region I
Sarwohadi	Head, Bureau of Region II
Surjaman	Head, Bureau of Region III
Budhy Tjahyati S. Soegijoko	Head, Bureau of Socio-Economic and Spatial Planning
T.A. Salim	Head, Bureau for Regional Development Assistance

2. Ministry of Public Works

Hendropranoto Suselo	Director, Direktorat Tata Kota dan Tata Daerah
Roslan Zaris	Head, Sub-direktorat PUW
Maurits Pasaribu	Staff, Sub-direktorat PUW
Ferianto Djais	Staff, Sub-direktorat PUW

3. Ministry of Home Affairs

Poedji	Director, Direktorat Bina Program, Direktorat Jenderal Bangda
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4. JICA Team

Kunio Takase	Team Leader
Norimichi Toyomane	Coordinator
Hiroko Sato	Member
Tsunenobu Miki	Member
Shigemichi Hatao	Member
Kastuyoshi Matsuda	Member
Masayuki Kawabata	Member
Mamoru Osada	Member
Noriyoshi Nagamatsu	Member
Yoichi Iwai	Member



WORK SHOP IV
THE STUDY ON THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR THE NORTHERN PART OF SUMATRA



Sahid Jaya Hotel - Jakarta - October 1989

To. DR. TAKASE, Kunio

SUMMARY OF INTER DEPARTEMENTAL WORKSHOP OF LTA-78
18th, October 1989

The workshop was held at Bappenas at 18 October 1989, chaired by :

- Mrs. Budhy Tjahjati Sugianto - Head Bureau Spatial Planning and Social Economy, Bappenas,
- Mr. Hariri Hady - Assisstent to the chairman of Bappenas.

The intention of the workshop is to disseminate and discuss the product of stage IV - Progress Report III.

The presentation was done by DTKTD lead by Mr. Roslan Zaris, Covering :

- The highlight of the whole processes of the study
- The objective of the study from the viewpoint of National and the Regional Interests.
- The explanation of stage IV consisting of; process, method, approaches and products.
- The management of implementation of the proposed IDEP strategy.

Through out the course of the discussion at the workshop, the participants are seriously to response toward the study in the spirit of improving and completing the data and the proposed projects so that the result of the study could be valuable to help Bappenas, Sectoral Agencies as well as Provincial Governments in formulating programs and projects for developing the region. Main points of the discussion are summarised as follows :

1. The participants suggest, if possible, to predict the multiplier effects of IDEP programs/projects on the economy of its IDEP area and the region compare to non IDEP programme/project.
2. The participants appreciate the time frame of the programs/projects of the study up to Pelita VIII derived from the prediction of the macro economic condition of the region. However, the participants wants the prediction method to be presented in the reports.
3. The workshop conceives that the proposed programs/projects are designed in line with the existing programs/projects and should be viewed as a mean to encourage in integrated way the region's economic development.
Therefore, it does not mean that the existing programs/projects outsidess proposed IDEP will be eliminated or stoped.
This statement should be explicitly stated in the report.
4. The potential earthquake need to be considered in formulating programs/projects, as the region is an active tectonic area.



WORK SHOP IV
THE STUDY ON THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR THE NORTHERN PART OF SUMATRA



Sahid Jaya Hotel - Jakarta October 1989

5. The study in Indragiri IDEP need to cover also fresh-water fish development, utilization of swampy area.
6. The electrical power development need to be studied in detail and should take into account the existing program, as Dirjen Tenaga Listrik Ministry of Mining has planed the power development plan up to Pelita VII.
7. The stage I of the FS study on river basin transportation development on Indragiri IDEP should be inccorporated in the TOR of the core package programs.
8. An emphasis should be given to land used strategy study. This needs to be presicly developed, as land is one important resouces for future development.
9. It is advisely to delete a sentence, "In addition, the Consultant will examine the possibility to invite foreign professional fishermen to the project areas, particularly for Tuna fishing.

List of the participants will be sent separately.

MINUTES OF DISCUSSION
OF THE FIFTH WORKSHOP
ON
THE STUDY ON THE INTEGRATED REGIONAL DEVELOPMENT PLAN
FOR THE NORTHERN PART OF SUMATRA

The JICA Team for the Study on the Integrated Regional Development Plan for the Northern Part of Sumatra (the Study) prepared the Draft Final Report (the Report) and submitted it to the Directorate General of Human Settlements (DGCK), the Ministry of Public Works, on 15 December 1989.

DGCK distributed copies of the Report to the Steering Committee members (BAPPENAS, Ministry of Home Affairs, and Ministry of Public Works), other ministries and agencies concerned (Ministry of Industry, Ministry of Mines and Energy, Ministry of Tourism, Post and Telecommunications, Ministry of Agriculture, Ministry of Transportation, Ministry of Forestry, Ministry of Population and Environment, Investment Coordinating Board, and Indonesian Chamber of Commerce and Industry) and BAPPEDA of the four provinces concerned to solicit their comments on the Report. BAPPENAS subsequently convened the fifth Workshop, in cooperation with DGCK and JICA, on 29 January 1990 at BAPPENAS in Jakarta.

Throughout the course of discussion at the Workshop, a constructive exchange of views prevailed not only about the content of the Report but also concerning the next steps to be taken after the Study's completion. The discussion resulted in several important agreements between the Indonesian participants and the JICA Team which are summarized below :

1. The participants appreciated the result of the Study, particularly its Integrated Development Program (IDEP) approach as an appropriate framework for the development of the northern part of Sumatra.

2. The Indonesian participants understood that the result of the Study was not an official plan and that the Final Report would not imply any official commitment to the result. They, however, will fully utilize the result as a guideline for provincial planning as well as a basis for regional development strategy for the northern part of Sumatra from the national perspective.

3. As stated in para 233, page 113 of Volume II of the Report, the Team stressed and the participants agreed that projects listed in the Report were not intended to be exhaustive or definitive; they could and should be reviewed and modified continuously by the Indonesian government to accommodate social and economic development progress. The Team also made it clear that those areas which were not selected as IDEP sites should not be dismissed or excluded from the development effort.

4. There were strong expressions in the Workshop on the need to immediately act for the implementation of the recommendations of the Study, especially the IDEPs, and to "sell" the integrated projects for financing by international donors, by governments budgets, as well as through private investment. It is understood that such actions will be undertaken through the normal procedures of the government led by BAPPENAS.

5. The Indonesian participants insisted that there should be no need to establish a new institution to implement the IDEPs.

They proposed instead to make existing institutions function effectively by strengthening human resources development.

6. The participants, both Indonesian and Japanese, acknowledged that the strengthening of the capability of provincial planning staff through technical transfer had not been sufficiently achieved due to limitations in the Study's time frame. The Indonesian participants nonetheless appreciated that policy dialogue between the Indonesian participants and the Team had been helpful to make up for that shortcoming. They also conceived that it would have been very effective for that purpose if the Team had stayed longer in the provinces.

7. The Indonesian participants also pointed out that the Team was receptive to accommodate^m the government's request to increase the number of the IDEPs and include tourism, telecommunication and spatial planning, but that social aspects still remained weak in the result. *JK*

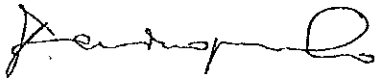
8. The Indonesian participants offered some new information to update the Report. The Team agreed to accommodate^m them as much as they could. *JK*

9. The Indonesian participants suggested that a supplement to the Report dealing with some technical aspects, e.g., the delineation of forest areas, ILOR (incremental labor output ratio) analysis, etc., should be useful to understand and utilize the result.

10. In conjunction with item^{4 and} 5, the participants agreed that good cooperation among BAPPENAS, BAPPEDA and sectoral ministries concerned was essential for the successful implementation of the result of the Study. *JK*

11. The participants unanimously complimented the Team on the successful accomplishment of the mission.

Jakarta, 30 January 1990



Ir. Hendropranoto Suselo, mpw
Director of City and
Regional Planning
Directorate General
of Human Settlements
Ministry of Public Works



Dr. Kunio Takase
Team Leader
JICA Study Team
for the Integrated
Regional Development Plan
for the Northern Part
of Sumatra

APPENDIX 3. List of Participants

Indonesia (* indicates former participant)

Ir. Soenarjono Danoedjo	Director General of Human Settlements Ministry of Public Works
Drs. Hariri Hady	Assistant to Chairman BAPPENAS
Prof. Dr. Sugijanto Soegijoko	Deputy Chairman V BAPPENAS
Dr. Bully Surigatmadja	Deputy Chairman BAPPENAS
Ir. Piek Mulyadi	Director General of Regional Development Ministry of Home Affairs
Dr. Manuwoto	Head of Bureau Regional I BAPPENAS
Ir. Hendropranoto Suselo, mpw	Director of City and Regional Planning Ministry of Public Works
Ir. Prayogo Padmowihardjo	Special Staff for the Minister Ministry of Public Works
Ir. Poedji M. Achmad	Director of Regional Development Ministry of Home Affairs
Prof. Dr. Syamsuddin Mahmud	Chairman, BAPPEDA Aceh Province
Drs. A. Hakim Nasution*	Chairman, BAPPEDA North Sumatra Province
Ir. Abdul Pane	Chairman, BAPPEDA North Sumatra Province
Dr. Thamrin Nurdin*	Chairman, BAPPEDA West Sumatra Province
Prof. Rustian Kamaludin	Chairman, BAPPEDA West Sumatra Province
Drs. Rivaie Rahman	Chairman, BAPPEDA Riau Province
Roslan Zaris, SE, MSc	Head of Regional Planning Division Ministry of Public Works
Dra. Rosediana	Staff, Bureau of Regional I BAPPENAS
Drs. S.K. Mangiri	Head of Development Planning Ministry of Home Affairs
Ir. Budi Santoso	Head of Administration Ministry of Public Works
Ir. Maurits Pasaribu, M.Reg.Sc	Head of Potential Analysis Section Ministry of Public Works
Ir. A.Imran A.Rachman, M.Eng.	Head of Physical Planning Division

	BAPPEDA, Aceh Province
Ir. Risyad, MSc	Head of Research Division BAPPEDA, Aceh Province
Ir. Bastomi Harahap	Head of Physical Planning Division BAPPEDA, North Sumatra Province
Ir. Amir Toga Tobing	Head of Research Division BAPPEDA, North Sumatra Province
Drs. Asrin Nurdin	Head of Physical Planning Division BAPPEDA, West Sumatra Province
Drs. Edward	Head of Research Division BAPPEDA, West Sumatra Province
Ir. H.A. Latief Nazar	Head of Physical Planning Division BAPPEDA, Riau Province
Drs. Helmy	Head of Research Division BAPPEDA, Riau Province
Ir. Iskandar	Head of Sub-Dinas Cipta Karya Aceh Province
Ir. Hutasuhud	Head of Sub-Dinas Cipta Karya North Sumatra Province
Djumairi Nurdin, BAE	Head of Sub-Dinas Cipta Karya West Sumatra Province
Ir. Zulkifli	Head of Sub-Dinas Cipta Karya Riau Province
Drs. Andi Angkut	Ministry of Finance
Dra. Dyah Herawati	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Melanthon Sitinjak, BE	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Ir. Suarni Sanudi	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Dra. Taty Rahmawati	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Esti Adriani, SMAL	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Ir. Buchari Budiman	Sub-Dinas Cipta Karya Aceh Province
Ir. Badia Ginting	Head of City planning, Sub-Dinas Cipta Karya, North Sumatra Province

A. Hanif Abdullah, BMUE	Sub-Dinas Cipta Karya Riau Province
Ir. Candra	Sub-Dinas Cipta Karya West Sumatra Province
Ir. Yusuf Yuniarto, MA*	Head of Regional Development Plan Section, Directorate of City and Regional Planning, Ministry of Public Works
Drs. Nurdin*	Head of Data Collection Section, Directorate of City and Regional Planning, Ministry of Public Works
Ir. Ferrianto Djais*	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Dra. Mariana Salam*	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Dra. Suwarni Sanudi*	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Drs. Husni Taufik*	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Ir. Nasuha*	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Mahdi*	Staff, Directorate of City and Regional Planning, Ministry of Public Works
Sumadji, BE*	Staff, Directorate of City and Regional Planning, Ministry of Public Works

Japan (* indicates former participant)

Mr. Atsuyoshi Toda	Chairman, JICA Advisory Committee
Mr. Ryuzo Ikushima	JICA Advisory Committee
Mr. Kohei Obara*	JICA Advisory Committee
Mr. Seiichi Taruishi	JICA Advisory Committee
Mr. Hiroya Tanikawa*	JICA Advisory Committee
Mr. Junichi Aoki	JICA Advisory Committee
Mr. Mitsuhiko Okada	JICA Advisory Committee
Mr. Munehisa Yamashiro	JICA Advisory Committee
Mr. Tadashi Shinoura	JICA
Mr. Kazuo Nakagawa	JICA
Mr. Eihiko Obata*	JICA
Mr. Shoichi Okumura	JICA

Dr. Kunio Takase	Team Leader
Dr. Norimichi Toyomane	Regional Planner/Coordinator
Ms. Hiroko Sato	Agricultural Economist
Dr. Mitsuo Yoshimeki	Crop Production Specialist
Mr. Takashi Fujimura*	Forestry Specialist
Mr. Kiyoshi Fujii	Forestry Specialist
Mr. Hiroshi Fukao	Fishery Specialist
Mr. Susumu Homma*	Industrial Specialist
Mr. Tsunenobu Miki	Industrial Specialist
Mr. Sakae Ichihara	Mining Specialist
Mr. Masumi Ishida	Energy Specialist
Mr. Shigemichi Hatao	Water Resources Planner
Mr. Yoshinori Oyama*	Hydrologist
Mr. Akira Shiroya	Hydrologist
Mr. Katsuyoshi Matsuda	Transport Planner
Mr. Masayuki Kawabata	Highway Engineer
Mr. Hiroshi Ueda	Port Engineer
Mr. Osamu Fujiwara*	Telecommunications Engineer
Mr. Eiichi Watanabe	Telecommunications Engineer
Dr. Mamoru Osada	Urban and Rural Planner/Tourism Specialist
Mr. Noriyoshi Nagamatsu	Project Economist
Mr. Yoichi Iwai	Environmentist

APPENDIX 4. Major Sources of Data and Information

A. Agriculture:

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