As defined in the scope of work, the Study has been undertaken for the area comprising KB and KDY Kediri, KB and KDY Blitar, KB Tulungagung, KB Trenggalek, KB Ponorogo, KB Pacitan and the southern Malang (the Study Area), and aimed at (1) identification of a development strategy and accompanying projects to develop the Study Area and (2) estimating their economic and social effects on the Area. However, the Study did not look into every aspect of economic and social development due to the limited resources available for the study itself. Instead, the Study tried to identify individual programs and projects which appear to have specially high potential for the Area's development in the following fields:

(1) Agriculture, forestry and animal husbandry;
(2) Agro-industry and manufacturing industry;
(3) Mining industry;
(4) Fishery;
(5) Port development;
(6) Land transportation development; and
(7) Water resource development.

This does not imply that the Study is restricted to the fields mentioned above.

1.2 Areal Characteristics and Development Potential

The Study Area is about 8,310 km^2 or 17.3% of East Java land area which is 47,992 km^2. The population in the Area is around 5.6 million which is 20.6% of the total population of East Java and increasing at around 0.08% a year, which is a relatively slow growth rate compared with 1.17% and 1.32% in Northern and Central Belts of East Java, respectively.[1/]

1/ Population growth rates are calculated from population statistics of 1971 and 1978 population estimated by East Java Provincial Government.

The Study Area can be divided into three distinctive sub-areas in terms of topography; river basin areas, limestone mountain areas and hilly cultivated dry land areas. Lands are well cultivated and irrigated in the flat river basin areas, whereas the hilly cultivated dry land areas are mostly rain-fed fields. The limestone mountain areas show relatively low productivity in agriculture.

An areal framework has been worked out as a basis for (1) identifying alternative strategies for spatial allocation of resources and (2) integrating projects proposed in various sectors into several sets of projects package. Settlement pattern and land use have been used as key variables to identify the areal framework.

The Area first has been divided into five kota regions, by using travelling time, as shown in Table 1.1 (see also Figure 1.2). If these criteria are rigidly followed, each center would have one hinterland of its own. However, the Team has added some modifications in favor of combining the three areas of Trenggalek, Tulungagung and Blitar, into an unified economic zone. Second, land of the Study Area has been classified into the categories in Table 1.2 from the viewpoint of agricultural potential and environmental management (see Figure 1.3).

By overlaying the kota region map and the land use map, nine development zones have been formed as shown in Figure 1.4. They include:

Development Zone (DZ)	Areas to be Included
DZ Pacitan	KB Pacitan
DZ Southern Trenggalek	Southern KB Trenggalek
DZ Southern Coast	Southern KB Tulungagung and southern KB Blitar
DZ Western Malang	Eastern KB Blitar and southwestern KB Malang
DZ Ponorogo	KB Ponorogo
DZ Northwest Hill	Eastern KB Ponorogo, northern KB Trenggalek and western KB Kediri
DZ Kediri	KB Kediri
DZ TTB Axis	Central KB Trenggalek, northern KB Tulungagung and central KB Blitar
DZ Northeast Hill	Southeastern KB Kediri and northern KB Blitar

Table 1.1 Criteria Used to Define Kota Regions

Center	Hinterlands		
Kecamatan Center	All desa's in the same kecamatan		
Kabupaten Center	Those kecamatans whose centers are located closer to the kabupaten center concerned than to any other kabupaten centers in terms of travel time. The travel time is estimated on the following criteria:		
	Topography \ Road Condition	Asphalted	Non-asphalted
	Flat Land (area without contour lines)	60 km/h	30 km/h
	Slope land (area with contour lines)	35 km/h or (kabupaten road) 50 km/h (provincial road)	15 km/h
City	Those kabupatens whose centers are located closer to the city concerned than to any other cities in terms of travel time.		
Surabaya	Whole provincial area, at least.		

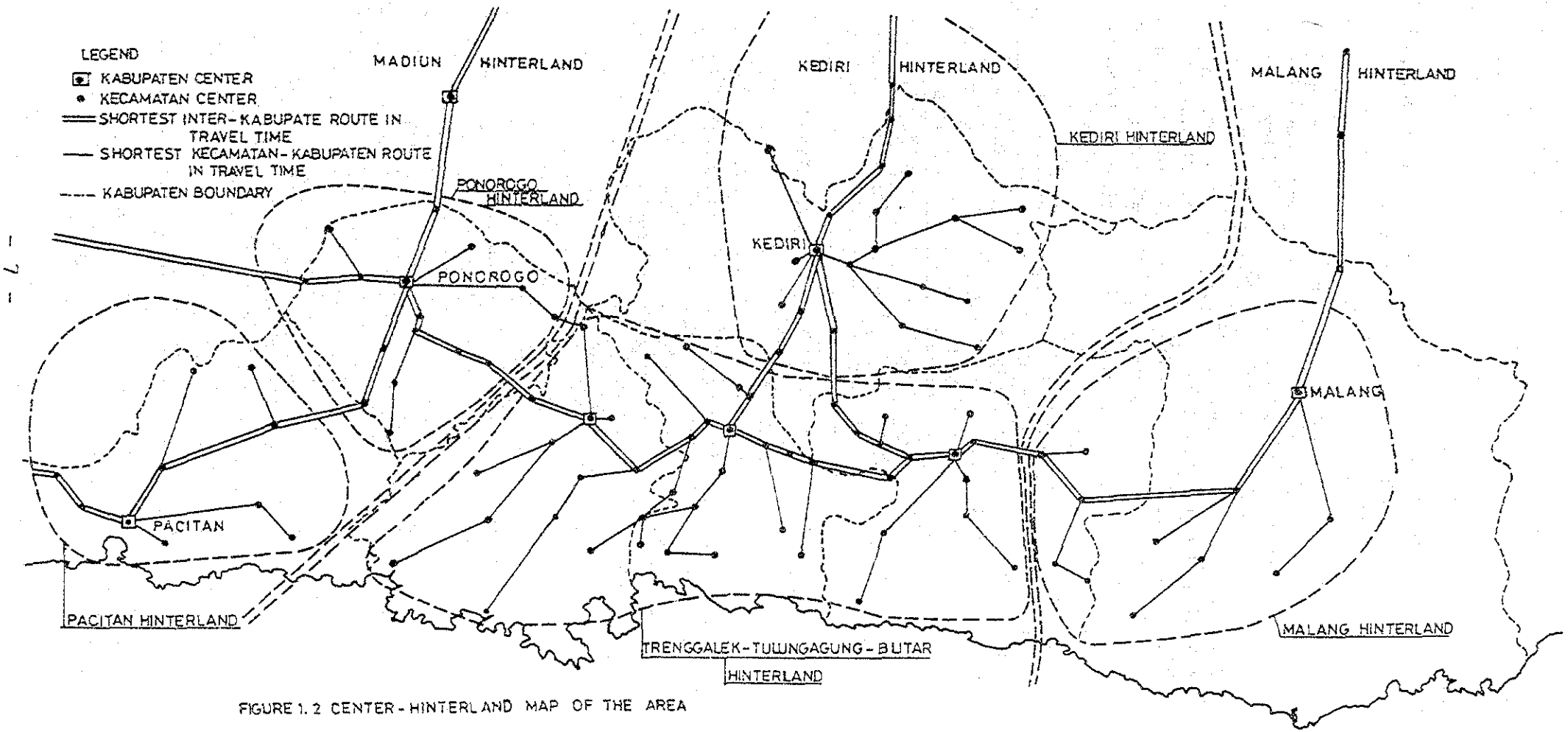


FIGURE 1.2 CENTER-HINTERLAND MAP OF THE AREA

Table 1.2 Categories for Land Classification

Land Use Classification			Most Conceivable Policy Inputs	Potential Outputs
Paddy land including human settlements		Double cropping area	Technical and institutional improvement in rice farming and water management	Increased agricultural production
		Single cropping area	Irrigation development	
Dry land	Non-critical area	With a large number of human settlements	Introduction of multiple cropping	
		With a small number of human settlements	Regreening/ reforestration	Environmental balance and increased cash-earning opportunities for farmers
	Critical area	With a large number of human settlements	Regreening	
		With a small number of human settlements	Reforestration	
Forest land		Productive forest Primary forest	Preservation	Environmental balance, well-protected watershed in particular

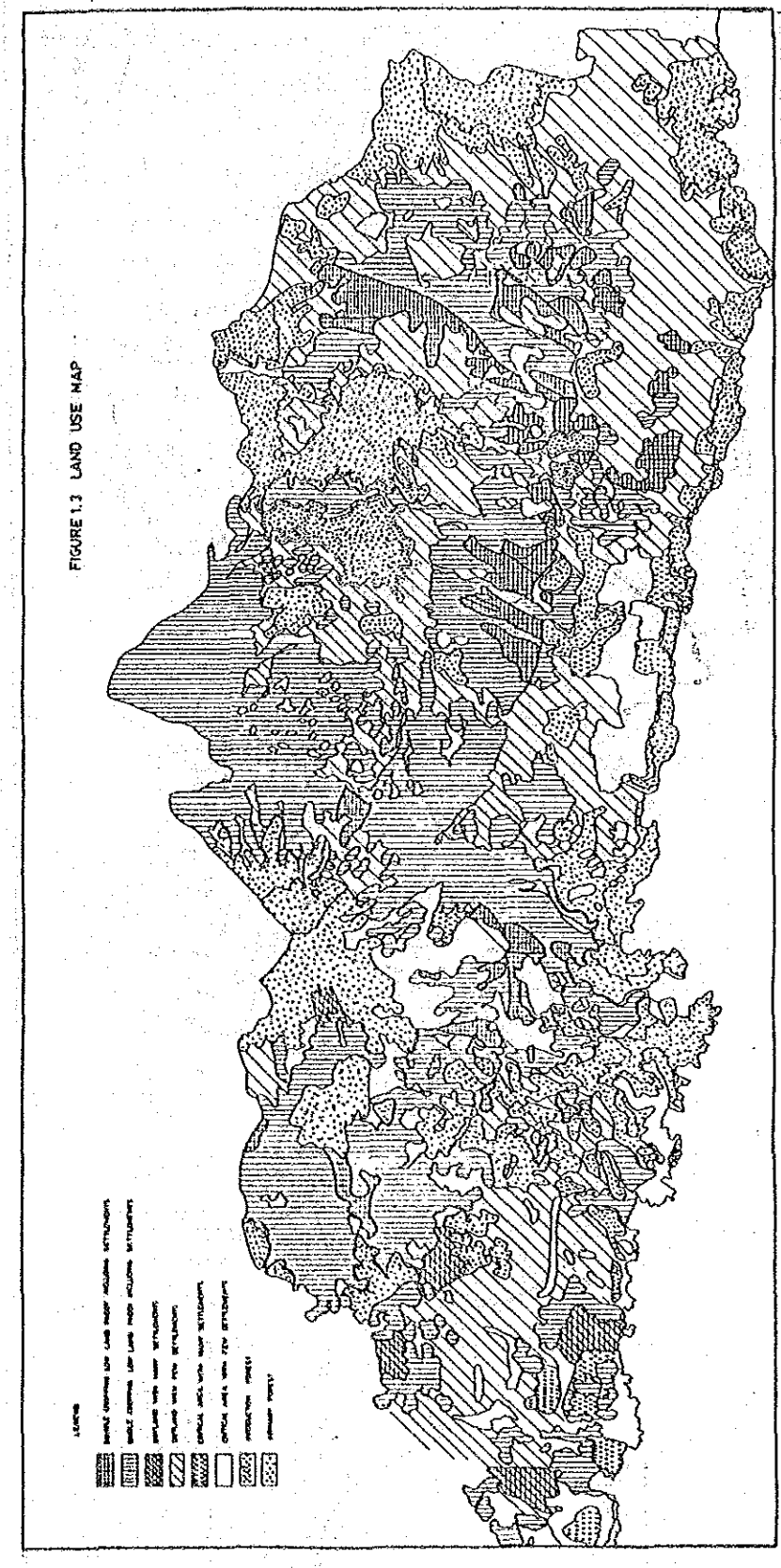
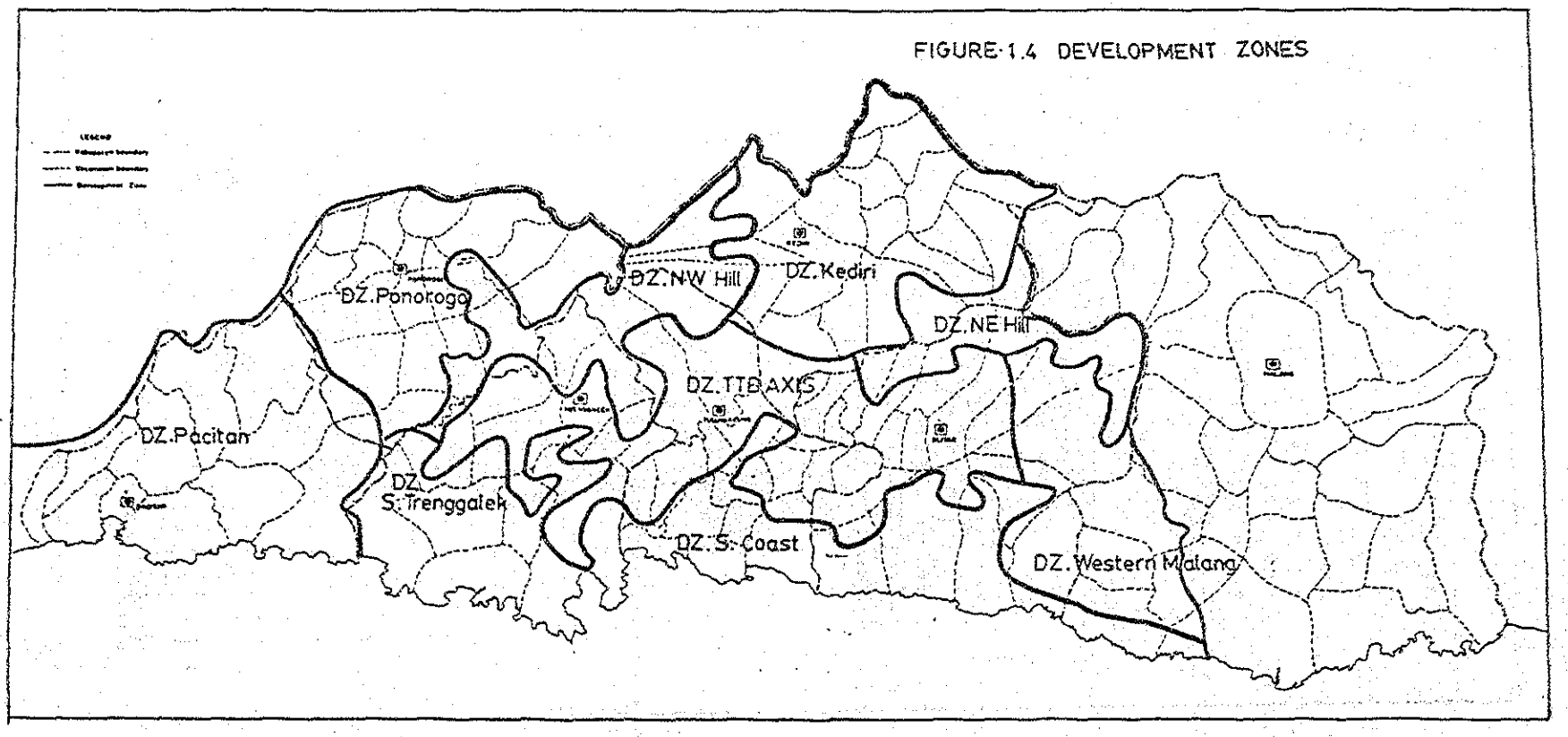


FIGURE 1.3 LAND USE MAP

FIGURE 1.4 DEVELOPMENT ZONES



Potentials, problems and their implications for development strategy are summarized in the following:

(1) DZ Pacitan

The whole area is hilly except flat land of a limited size around Kota Pacitan. Land suitable for agriculture is limited and scattered. Settlements are also scattered and isolated from each other as well as from major routes of road networks. Since dry land cultivation extends even up to the top of the hills, it is causing soil erosion. Critical areas have thus been expanding. Some settlements encroach on the critical areas because of limited population absorptive capacity of the area and they suffer from shortages of drinking water. The area is connected with DZ Ponorogo by a provincial road but the road conditions are bad. Though cassava production is dominant in terms of area coverage, cloves which is produced mainly on the hills is an important source of cash income of farmers. This area accounts for 50% of cloves production of East Java. Beans are another potential crop for dry land agriculture of the area. There are small fishery villages along the coast line; and fishing is done in a traditional way and the production level is much lower than that in Prigi. There is no industry exporting manufactured products outside the area except the copra industry.

(2) DZ Southern Trenggalek

The area is a part of the least developed coastal belt extending from Pacitan to the southern part of Malang, but has relatively higher agricultural potential in the belt. There are some rivers whose water can be tapped

by constructing small dams for irrigation purposes. Paddy cultivation has already extended along these rivers, though it is still single cropping. Cloves production is also a major agricultural activity in the area. It accounts for 20% of the total provincial cloves production. Dry land is likely to be suitable for producing spices and nuts. At Panggul, there is a deposit of marble whose quality is better than that of the presently exploited one at Besole though the scale of the deposits size is yet unknown. Road networks between kabupatens and between kecamatans are not well developed and those networks do not have sufficient feeder roads.

(3) DZ Southern Coast

The area, being the most depressed, extends from the immediate east of Prigi Bay as far as to western Malang. Most of the area is covered with limestone which is the primary cause of the very low yield per hectare. There are few rivers which are suitable for irrigation even in small scale. Extensive critical areas exist in the southern part of Blitar and soil erosion is a serious problem. The narrow areas along the coast are designated as primary forests in which no developmental activity is permitted by the Ministry of Agriculture. This has been creating conflicts with local governments, the people who want to extract mineral resources such as limestone and marble, and the people who want to plant crops. Although there are some potential in cloves production, sericulture and fishery, inadequate feeder roads connecting the area with kota kabupatens are the bottlenecks for development of the area.

Though limestone deposits of the area are extremely large, the large scale of limestone extraction operations are not likely to be justifiable at least in short and medium terms on account of balanced supply-demand relation of limestone at the national level and inadequate transport facilities in this area. Lack of sufficient drinking water is another serious problem for the people in this area.

(4) DZ Western Malang

Although the area is a part of the limestone area along the coast, there is some paddy cultivation and extensive dry land crop cultivation because of first, the availability of water from small rivers, and second, the fairly moderate topography which prevents top soil from being washed away. There is potential groundwater which, if tapped, will be a great contribution to increasing the intensity of rice farming and to converting dry lands into irrigated ones. There are many large human settlements along small rivers. Food processing industries in these settlements have been growing presumably because of the short distance to a large local market, Kota Malang.

(5) DZ Ponorogo

Alluvial flat land covers most of the area. The area has more than sufficient surface water from Madiun River and its branches. Groundwater is likely to be available in the western part of the area. The area's farmers still use single cropping despite the land's high potential in terms of land fertility and water availability. A large-scale project is underway with assistance from the World Bank for rehabilitation of the existing irrigation

systems. Groundwater is also being explored by the Department of Public Works.

As for dry land agriculture, an integrated agricultural development project is being proposed with Taiwanese assistance. This will substantially upgrade infrastructure and farming technics in dry land areas. Agricultural productivity is as high as in the Brantas River Basin in terms of labor productivity as well as yield per hectare. From Kota Ponorogo, the center of the area, provincial roads stretch to Pacitan to the south, to Solo in the west, to Madiun in the north and to Trenggalek in the east. These provincial roads together with the comparatively well developed intra-area road networks contribute to the area's high agricultural potential in terms of market accessibility. Kota Ponorogo and its immediate surrounding areas have the third largest industrial agglomeration next to Kediri and Tulungagung and their industries are more skill-oriented than resource-oriented. However, a very limited number of industrial units export their products outside the area.

(6) DZ Northwest Hill

The area is covered with fairly steeply sloping land. Few settlements exist in the area. Critical areas have been expanding due to inadequate efforts to maintain forests. The soil washed away from the critical areas has been silting up irrigation canals and rivers, and causing perrenial floods in the Brantas River Basin. The area has high potential for teak production.

(7) DZ Kediri

The area is a part of the Brantas River Basin and is covered with the largest alluvial flat land in the Study Area. Rice cultivation is a major agricultural activity of the area but its yield per hectare is not as high as that in the Trenggalek-Tulungagung-Blitar area due to perrenial floods of the Brantas River and its branches. Dredging of these rivers is underway. There are four on-going irrigation projects, consisting of three using river water from branches of the Brantas River and one using groundwater in Nganjuk. Paddy production of this area will sharply be increased following completion of these projects. Another remarkable trend in the area's agriculture is increasing production of food for urban consumption, such as eggs, milk, fresh vegetables and fruits. Growth of Kota Kediri will further increase demand for these products. Industrial agglomeration in Kota Kediri and its surroundings is the largest in the Study Area. Food processing and weaving are the major industries. Settlements extending all over the area are well connected with feeder and kabupaten roads.

(8) DZ Trenggalek-Tulungagung-Blitar Axis (DZ TTB)

The area is also a part of the Brantas River Basin. Single cropping paddy is dominant land use but some parts around Kota Trenggalek and Kota Blitar are already double cropping areas. Similarly to DZ Kediri, large size settlements cover the area almost continuously. There are three large scale on-going irrigation projects. Completion of these projects will be a great contribution to paddy production in this area. The southern part of Tulungagung

is an unused swamp of 3,000 ha which exists due to lack of sufficient erosion control in the mountains along the Brantas River.

DZ TTB extends down to Prigi Bay area where there are the most viable fishery activities in the Study Area. Prigi is suitable for port development as well. A large population together with an expected increase in agricultural productivity in the Brantas River Basin area will ensure sufficient local markets for fish and fish products. Three kota kabupatens are centers of manufacturing industries of this area including Tulungagung, which is specialized in the batik and wearing industries, Trenggalek, specialized in the roof-tile industry, and Blitar, specialized in the food processing industry. Road networks within the area are well developed in terms of not only kabupaten-kecamatan roads but also their feeder roads. Roads connecting the area with Ponorogo, Prigi, Malang and Kediri need to be upgraded in view of expected increases in vehicle use of these routes.

(9) DZ Northeast Hill

The area is situated on the hill between Kediri and Malang. The most serious problem of this area is volcanic rocks and ashes from Mt. Kelut which cause sedimentation of the Brantas River and its branches. Construction of a sufficient number of check dams could reduce the sedimentation to a great extent since the area is well covered with primary forests. The area has extensive plantation estates of cacao and cloves. Coffee and tea may be potential crops for estate agriculture in this area in the future. The existing managerial know-how regarding estate agriculture

will enable the area to specialize in estate agriculture and related manufacturing industries.

1.3 Relative Economic Position of the Study Area

In order to show the relative economic position of the Study Area, the economies of the Study Area and the rest of East Java have been compared from several points of view. Table 1.3 compares the sectoral composition of employment in 1978 for the Study Area and East Java. As shown, the share of agricultural employment is larger in the Study Area than that in East Java. Another sector which has a larger share in the Study Area than in East Java is the industrial sector. However, the industrial sector in East Java is supposedly more capital intensive than that in the Study Area: thus even though the share of industrial employment is larger in the Study Area, the share of industrial output in gross regional domestic product (GRDP) will be smaller in the Study Area than in East Java.

Table 1.3 Estimates of Employment Share in the Study Area and East Java in 1978

(Unit: %)

Sector	Study Area 1/	East Java 2/
Agriculture	64.7	60.5
Trade	10.1	11.4
Services	9.2	10.4
Industry	8.2	7.2
Transportation and Communication	0.8	1.5
Construction	1.2	1.6
Other	5.8	1.4
Total	100.0	100.0

Notes: 1/ Figures are estimated by the Team members.

2/ Source: Pemerintah Daerah Propinsi Daerah Tingkat I, Pola Dasar Pembinaan Latihan Kerja, p. 27.

An analysis of figures in Table 1.3 together with those in Table 1.4 reveals some important implications regarding the economic activities to the areal economies. According to the figures in Table 1.4, value added per worker in the agricultural sector is the lowest and that in the banking sector is the highest. In this case, the economy which has a larger share of agricultural employment and smaller shares of other employment than the other economy, the overall value added of the former economy is smaller than that of the latter economy. In other words, the Study Area's income per capita is smaller than that of East Java.

Table 1.4 Value Added per Worker by Sector and Its Growth in East Java

Sector	1975 (Rp)	1977 (Rp)	Growth Between 1975 & 1977 (%)
Agriculture	159,203	243,025	53
Mining	188,400	270,417	44
Industry	290,593	430,173	48
Electricity, Water Resource	753,500	940,619	25
Construction	172,700	434,692	152
Transportation and Communication	393,130	575,122	46
Trade	373,532	543,375	45
Bank	1,495,911	3,140,919	110
Services	128,730	207,720	61

Sources: 1. Labor force figures to obtain value added are from Pemerintah Daerah Propinsi Daerah Tingkat I, Pola Dasar Pembinaan Latihan Kerja.

2. Gross regional product data is from BAPPEDA, Jawa Timur.

As shown in Table 1.4, growth rates of value added per worker are almost same in the agricultural, industrial, transportation and communication, and trade sectors. Value added per worker in other sectors is significantly higher than that in the above mentioned sectors. That economy, which has larger GRDP shares in the sectors of rapidly growing value added will grow faster than that economy which has small GRDP shares in the same sectors. The figures imply that per capita income in the Study Area have been growing at a slower rate. As a result, the income disparity between the Study Area and East Java has been widening during the 1975-77 time period.

Since 1969, a large portion of the public investment in economic development was made by the Central and Provincial Governments, was intended to raise agricultural productivity. In the Study Area, the public investment has been heavily concentrated in the upper Brantas River Basin area which have brought benefits to Kediri, the norhtern parts of Tulungagung and Blitar. Table 1.5 shows changes in the total production of major crops for both the Study Area and East Java from 1972 to 1975. Growth rates of paddy, maize and cassava production are higher in the Study Area, while those of peanut, sweet potato and soy bean production are lower. Figures by kabupaten reveal that all kabupaten except Ponorogo achieved higher growth rates in paddy production than East Java did. In maize production, only Pacitan and Malang failed to attain East Java's growth rate and in cassava production, Pacitan and Malang achievements are far behind those of the Study Area and East Java.

Large increase in paddy production in the Study Area would be due to heavy public investment for water resource development during the Repelita I and II periods. There are still several major on-going projects which will produce significant benefits along Brantas River in the future. Those projects will bring benefits mainly to Blitar, Tulungagung

Kediri and to a lesser extent to Trenggalek, and will enhance the level of economic activities in the Study Area. Thus, regional economic disparities between the Study Area and the rest of East Java will be reduced.

Table 1.5 Growth in the Total Production of Major Crops from 1972 to 1975

(Unit: %)

	Paddy	Maize	Cassava	Peanut	Sweet Potato	Soy Bean
Ponorogo	2.84	9.21	26.83	73.64	34.77	2.16
Pacitan	11.15	-9.00	1.75	-11.54	6.42	-20.63
Kediri	8.98	35.02	9.14	41.42	-6.07	-20.97
Blitar	10.27	14.57	13.66	-2.39	22.31	-7.01
Tulungagung	11.58	21.08	4.03	1.87	0	-12.31
Trenggalek	7.67	20.95	24.16	1.72	23.56	0
Malang	6.44	1.98	-4.94	10.17	0	-30.99
Study Area	8.20	11.27	8.53	8.64	7.48	-11.50
East Java	4.64	9.99	4.88	11.36	11.34	0

Source: Dinas Pertanian, Jawa Timur.

Nevertheless, the past and on-going projects may create a gap between the upper Brantas area and Pacitan-Ponorogo area. Table 1.5 shows that Pacitan attained the level of growth rates of the Study Area and East Java only in paddy production and that Ponorogo's growth rate of paddy production was far behind that of the Study Area. If the present trends continue in the Area, the gap will become bigger and the Pacitan-Ponorogo area will be left behind relative to the progress of East Java. These results may be partly due to the severe natural conditions prevailing in Pacitan-Ponorogo area, and partly due to smaller past and

present public investment in comparison to the upper Brantas Basin area.

One of the rapidly growing sectors in the Study Area is the fishery sector (see Table 8.1). Even though its GRDP share is small, fishing activities in Trenggalek produced about 2,700 tons in 1977, averaging around Rp.1.6 million sales a day. The production increased by more than double that of the previous year. A simple comparison of fishing catch in the area with that in East Java clearly indicates the remarkable growth of the sector as shown in the following table.

(Unit: Ton)

	1974	1975	1976	1977
Trenggalek	478	1,679	1,190	2,746
Study Area	610	1,919	1,712	4,276
East Java	56,664	90,766	126,413	139,431

The rapid growth of fish production in the Area is mainly due to introduction of the purse seine fishing method. This method has been used widely in the Java Sea; however, it was not used widely in the Area until 1974. Since most of fishery boats were not motorized, fishermen could not use the method. During the last couple of years, motors were rather easily available, and innovative fishermen started introducing motors and purse seiners and increased their catch tremendously. Also the increase in fish catch implies that potential markets have been expanding partly due to increase in per capita income and partly due to improved transportation systems including kabupaten and provincial roads. Moreover, the future potentials of this sector will expand further as income per capita increases and as the presently proposed highway betterment projects are implemented.

The investment in road construction and rehabilitation was mainly channeled into National and Provincial roads which mostly are in the Central Belt. Other types of public investment by the Central Government also were made in this area. The development budgets of kabupaten and kotamadya governments depend on IPEDA and other several tax revenue bases the sizes of which are largely determined by land productivity and the level of economic activities of kabupaten and kotamadya. So the available resources for public investment are also higher, in term of total as well as per capita figures, in the Central Belt than in the Study Area. In terms of per capita figures, Pacitan is the lowest and Ponorogo is the third lowest kabupaten in East Java as shown in the following table.[2/] Average per capita investment from kabupaten and kotamadya revenues in East Java is Rp.4,752 and no kabupaten in the Study Area spent more than the provincial average.

KB/KDY	Per Capita Investment During Repelita II (Rp)
KB Pacitan	3,106
KB Ponorogo	2,947
KB Kediri	4,517
KB Blitar	4,063
KB Tulungagung	4,228
KB Trenggalek	3,366
KB Malang	4,138
KDY Kediri	5,338
KDY Blitar	7,737
Average in East Java	4,752

2/ Original data obtained from Dinas Keunguan, East Java.

During the Repelita I and II periods, a large portion of the private investment also was made in the Central Belt. From 1968 to 1977 the Central Belt accounted for 69.7% of the private investment in the province, whereas the shares of the Northern Belt and the Study Area are 27.5% and 2.8%, respectively. The investment in the Study Area is only Rp.12 billion, of which the major part was invested in Kediri.

Our estimates, which are based on population statistics of 1971 and 1978 population estimated by the East Java Provincial Government, show the population in East Java is increasing at around 0.90% a year. On the other hand, the population in the Study Area is increasing at around 0.08% a year, which is very slow in comparison to 1.32 and 1.17% in the Central and Northern Belts, respectively. These figures for three areas seem to be significantly underestimated. Among kabupatens and kotamadyas in East Java, KDY Surabaya has the highest population growth rate (2.90%) followed by KDY Pasuruan (2.14%), KB Gresik (2.07%), KB Sidoarjo (2.02%) and KB Mojokerto (1.87%). In the Study Area, KDY Kediri has the highest population growth rate (1.83%), followed by KB Kediri (1.35%), KB Tulungagung (0.94%) and KB Ponorogo (0.71%). KB Pacitan is the only kabupaten which experienced a decline in population since 1971.

The population of the Study Area is 5.03 million, that is, 18.3% of the provincial population in 1978, whereas its share was 19.3% in 1971. The relatively slow population growth in the Area is partly due to outmigration from the Area which has a lower GRDP per capita.

The above statistical comparison between the Study Area and the rest of East Java indicates that the economic position of the Study Area is still lagging behind the Central and Northern Belts despite development efforts made in the Study Area. However, the distribution of development efforts

towards economically unfavorable areas during Repelita II has been gradually bearing fruit as may be seen in several places. Those fruits may not be recognized immediately due to their being small in size and due to the time lag between data collection and publication in monitoring development performance. During our field trips in the Area, we observed many significant achievements in development during the last few years. The Central, Provincial and regencies governments implemented many programs and projects for development. For water resource development, for instance, some projects completed are the Lahor Dam, Wlingi Dam Project, Kediri-Nganjuk Ground Water Development Project and Mt. Kelut Debris Control Project. In the agricultural sector, the project which investigates multiple cropping system and the regreening project are on-going.

The improvement of roads and bus transportation system is remarkable. No completed highway development project of a large scale was found, but numerous partial improvements were already completed or are on-going. Particularly, the improvement of the Prigi access road from Bandung and the Ponorogo-Pacitan trunk route is remarkable. Also, bus transportation systems have expanded rapidly both in the intercity long distance and in the suburban services. The Team members are deeply impressed with many mini-bus services organized by private bus owners on the access roads from Trenggalek to Prigi.

The electricity and other public utilities have expanded partly even to the remote towns and villages in the southern parts of KB Pacitan and Trenggalek, even though an electricity network has not been extended to every corner of the Study Area. But the expansion of supply networks and the installation of many small-scale generators provide not only better living conditions for the people in rural areas but the based for development of rural industries.

The efforts towards strengthening planning capabilities of local governments are impressive. It seems that BAPPEDA and planning units in kabupaten offices have been trying to improve their planning capabilities. In all kabupaten offices the Team members visited, the improvement of their planning capabilities was clearly observed as a distinguished result of the efforts at upgrading.

Agro-base industries such as corn oil processing have been established in and around Kediri and are encouraging agricultural production in the upper Brantas Basin area. Recent large domestic and foreign investmetns in Kediri area are mainly in the agro-base industries which produce sugar, cigarettes, wooden boxes, gunny sacks and furniture. And they will be the bases which accelerate industrial growth in the Study Area.

Lastly, the most important project the Team members have observed is the Prigi fishery port project which started in the 1977/78 fiscal year. The scale of the project is not very big and the financial appropriation is presently limited to only Rp.23.5 million for two years. But the initiation of construction of a new fishery port seems to be very significant in the history of the southern coast development. As a result of exhaustive efforts made by the Central and local governments, this will be one of the most symbolic events for the future development of the Study Area.

In sum, the major development efforts during the Repelita II period in the Study Area have been directed largely to the infrastructure sectors. Even though the returns of those investments are higher than those in other sectors, the returns have not been fully realized yet. But the tangible results and returns will be obtained sometime during the Repelita III period.

CHAPTER II

DEVELOPMENT OBJECTIVES

2.1 Challenges for Development

The central government has set broad policy guidelines for development during the period under Repelita III based on the assessment of development performance during the period under Repelita II.[1/] The guidelines conclude:

(1) Repelita III will address itself to the issues which have not been solved or attained by Repelita II. Such issues include economic development of lagging areas, improvement of economic well-being for the poor majority, supply of a minimum level of basic human needs and promotion of transmigration.

(2) Repelita II has been successful in maintaining the country's economic growth at a reasonable rate. The efforts to expand the national economy will be continuously made during the Repelita III period with particular emphasis on the full mobilization of resources available in different parts of the country.

Repelita III has thus been launched, with the overall objectives of (1) equal distribution of welfare and social justice, (2) economic growth at a reasonable rate and (3)

1/ The guidelines are defined in The Guidelines of State of the Republic of Indonesia published by the Department of Information, Republic of Indonesia, 1978.

national stability. Accordingly, development objectives for the East Java province have been set as follows:[2/]

(1) Improvement of living conditions and human capabilities of the people, and distributing economic well-being and welfare among them equally as well as fairly; and

(2) Creation of solid socio-economic foundations of development for the forthcoming steps.

For regional development in particular, the Provincial Repelita III has spelled out the following specific objectives:[3/]

(1) Integration of sectoral and regional development,

(2) Equal distribution of income and welfare,

(3) Provision of infrastructure especially in the less developed areas,

(4) Promotion of rural development,

(5) Strengthening of urban-rural linkages,

(6) Reinforcement of financial bases of provincial and local governments,

(7) Maintenance of natural environmental balance, and

(8) Promotion of justice in law.

In the light of overall objectives set at the national and provincial levels, the past development performance of the Study Area has been summarized as in Table 2.1.

2.2 Development Objectives

Based on development frameworks at the national and provincial levels and the specific challenges for development, objectives have been identified as follows:

2/ Jawa Timur, Rencana Pembangunan Lima Tahun Ketiga di Daerah Propinsi Daerah Tingkat-I, Jawa Timur, 1979/80-1983/84, Buku I, Surabaya.

3/ Jawa Timur, Rencana Pembangunan Lima Tahun Ketiga di Daerah Propinsi Daerah Tingkat-I, Jawa Timur, 1979/80-1983/84, Buku I, Surabaya, pp. 2.2-2.8.

Table 2.1 Past Development Performance of the Study Area

Field \ Overall Objectives	Distribution of Economic Well-being and Welfare	Regional Economic Growth
Agriculture	. Development took place only in limited areas leaving other areas behind.	. Production expansion was limited. Especially, few crops could earn income through inter-regional export.
Industry	. Industries were not viable enough to provide adequate job opportunities in rural area.	. Strong bases were not established yet for the long term industrialization of the area.
Natural resource development, including mining, fishery, forestry and water resource development	. Improper management of natural resources caused a vicious circle of environmental imbalance and low productivity of depressed areas, viz, critical areas, erosion, etc.	. Potential resources were not fully exploited yet. . Methods of exploitation were inefficient.
Physical infrastructure	. Provision of basic services for the people was inadequate and critical minimum levels of the basic services were not ensured in some depressed areas.	. Productive infrastructures were still inadequate or, if any, not fully utilized for the Area's economy.
	. Rural areas were isolated from urban centers due to lack of sufficient transportation networks within the area.	. Lack of adequate transportation network between the Area and advanced areas outside the hindered economic development.
Human resource development	. Majority of the poor could not meaningfully participate in development due to inadequate basic human capabilities; viz, primary education, nutrition, etc.	. Skilled human resources were not adequately developed or retained in the Area.

(1) Overall objective I

Distribution of fruits of development equally and effectively among all sections of the area and the people, and attainment of national stability.

Specific objectives set under this objective are:[4/]

1.1 Promotion of economic development of less developed areas,

1.2 Expansion of employment opportunities,

1.3 Strengthening of urban-rural linkages within the Area,

1.4 Maintenance and rehabilitation of natural resources for a better environmental balance,

1.5 Provision of critical minimum levels of basic services for the all population in the Area, and

1.6 Development and improvement of basic human resources.

(2) Overall objective II

Acceleration of economic growth which contributes to national and provincial economies.

Specific objectives set under this objective are:

2.1 Expansion of production with an emphasis on the Area's export expansion and diversification,

2.2 Modernization of industries including manufacturing and other industries, for continuous growth of the Area's economy over forthcoming periods,

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4/ Among the specific objectives, objectives 1.5 and 1.6 are for the attainment of national stability and the rest are for the distribution of fruits of development.

2.3 Strengthening of linkages between the Area and advanced areas outside the Area,

2.4 Efficient and full exploitation of potential natural resources,

2.5 Development and utilization of productive infrastructures to the maximum extent, and

2.6 Promotion of development of skilled manpower and technologies.

Overall objective I (Distribution and Stability) is a short-term one because it is urgently needed in every field of development of the Area, while overall objective II (Growth) is a long-term one because it will take a longer time for the Area to attain it in view of the relative position of the Area in the national economy.

Given the time period of five years for this development plan, overall objective I is given priority over overall objective II. Specific objectives are equally important under respective overall objectives, but specific objective 1.5 needs to be placed in a special position in a weight scale in view of its urgency and essential nature. Hence, weights of objectives have been set as in Table 2.5.[5/] These objectives with their weights are to be used as criteria to assess and to assign priorities on alternative strategies and proposed projects, using a scoring method.

5/ Since we understand that both The Guideline of State of the Republic of Indonesia and Rencana Pembangunan Lima Tahun Ketiga di Daerah Propinsi Daerah Tingkat-I, Jawa Timur, 1979/80-1983/84 emphasize the distribution objective, we assigned a 10% larger weight to it.

Table 2.2 Weight of Objectives

Objectives	Weight	Aggregated weight by overall objective (%)
Overall objective I: Distribution and Stability	14	
1.1 Economic development of less developed areas	2	40
1.2 Employment expansion	2	
1.3 Urban and rural linkages	2	
1.4 Environmental balance	2	
1.5 Critical minimum services	4	30
1.6 Basic human resource development	2	
Overall objective II: Growth	6	
2.1 Production/export expansion and diversification	1	30
2.2 Industrial modernization	1	
2.3 Interregional linkages	1	
2.4 Natural resource exploitation	1	
2.5 Productive infrastructure development	1	
2.6 Skilled manpower and technological development	1	

2.3 Evaluation Method of Alternative Strategies

Evaluation of alternative development strategies will be made in reference to the objectives for development already identified above. The basic method is that, for each objective, the performance of each program or project contained in a strategy will be evaluated and be given a score. Then the scores of all programs and projects contained in a strategy will be added up, and the sum will be defined as the score of a strategy. Figure 2.1, for instance, shows several programs and projects in a specific strategy. Each program or project in the strategy will be evaluated in relation to specific objectives listed in Table 2.2. This

Figure 2.1 Form for Evaluation Strategies

Strategy: Coastal Hill Development Strategy

Program/Project	Objectives: Overall Objective I Distribution and Stability						Overall Objective II Growth						Project Score Total
	1.1	1.2	1.3	1.4	1.5	1.6[1]	2.1	2.2	2.3	2.4	2.5	2.6[1]	
	2	2	2	2	4	2[2]	1	1	1	1	1	1[2]	
1. Drinking Water Project in S. Malang	2/4[3]	1/2	0/0	0/0	2/8	1/2	0/0	0/0	0/0	0/0	1/1	0/0	17[4]
2. Feeder Roads in S. Blitar	1/2	1/2	1/2	2/4	2/8	0/0	1/1	2/2	2/2	0/0	1/1	2/2	26
3.													
N.													
Strategy Total Score													

Notes: 1/ Numbers from 1.1 to 2.6 indicate specific objectives in Table 2.2.
2/ Figures are weight given to specific objectives.
3/ Figures in numerator indicate the performance of project in relation to specific objective. Score 2 shows that a project attains the objective concerned significantly; Score 1 shows that a project attains the objective concerned fairly or indirectly; Score 0 shows that a project hardly attains the objective concerned. Figures in denominator are the products of score and weight for each specific objective.
4/ Figures are summations of the figures in denominator.

Study uses three levels of goal achievement: score 2 indicates that a project attains the objective concerned significantly; score 1 indicates that a project attains the objective concerned fairly or indirectly; and score 0 indicates that a project hardly attains the objective concerned.[6/]

Referring to the figure, the first project, a drinking water project in South Malang, attains score 2 for specific objective 1.1, score 1 for specific objective 1.2, score 0 for specific objective 1.3 and so on. Multiplying scores of the project by weight of objectives on Table 2.2 and summing them up, we obtain the project total score, 17, on the last column in the figure. For the purpose of evaluating alternative strategies, the total score of each strategy will be compared.

If this method is used properly, each program or project is evaluated within the context of the strategy in which the project is included. Even if an identical project is included in two different strategies, its performance may be different depending upon the composition of other programs and projects contained in each strategy.

6/ See more details in Table 4.7 in Chapter IV.

CHAPTER III

DEVELOPMENT PERSPECTIVE

3.1 Review of Regional Development Strategy of East Java

During the transitional period from Repelita II to Repelita III, government officials of East Java were preparing detail programs of the Third Five Year Development Plan. The overall framework of East Java development is described in Rencana Pembangunan di Daerah Tingkat I Jawa Timur published by the East Java Provincial Government. Bab 3, Buku I of the Rencana describes the overall framework as follows:

(1) To attain the development objectives, sectoral and regional development should be coordinated and integrated and the sectoral development should exploit potentials in the region;

(2) To integrate national and regional development, the development strategy should incorporate several measures in itself such as those for improving transportation and communications;

(3) To promote regional development, participation of local governments at various levels and people is essential. The participation would include financial and administrative contributions. Also each area has to increase its capability to maintain environment, to solve problems and to establish healthy living environment.

The Rencana also mentions that the above development efforts of East Java will be in every social, economic and other fields such as agriculture, health, education and development administration.

To achieve development effectively, East Java needs a set of policies and strategies which integrates sectoral and areal development. In order to formulate a regional development strategy, the Rencana divides East Java into five development areas as similarly done by the Second Five Year Development Plan of East Java. Each of them has a different development potential and prospect, as follows:

(1) Central development area with Surabaya as its center: This area specializes mainly in industrial activities, trading, and public services.

(2) Middle high plateau development area with Malang as its center: The major sectors of this area are the agricultural and estate crop sectors. Malang and its vicinity can be a center of industries, mainly of agro-processing industry, in the future.

(3) Westside low plain development area with Madiun as its center: The area is for forestry and mining exploitation.

(4) Eastside low plain development area with Jember as its center: The area produces mainly food and estate crops, and their production can be increased by intensive cultivation and irrigation. Banyuwangi port will be used for exports from the area.

(5) Madura development area with Sumenep as its center: The area is for agricultural production and the production can be increased by exploitation of agricultural resources available on the island.

The leading sector of the region of East Java would gradually shift from agriculture to industry. Among various types of industries, skill-oriented and labor-intensive industries should be considered as leading industries. The roles of such industries would be largely import substitution which is essential for the development of the country at this stage. The development of those industries would center around Surabaya as they are now. The future pattern would be slightly more dispersed. Their location will be determined by linkages among themselves, their markets and infrastructure. With fairly well developed trunk highways to Mojokerto, Kediri and Madiun in the West, to Malang in the South and to Pasuruan, Probolinggo, Jember and Banyuwangi in the East, development of industries will spread from Surabaya to the above major cities including three development centers Madiun, Malang and Jember.

To link industrialization and rural development programs, there should be a conscious effort for regionalization of development. In this sense, establishment of the five zones with their own centers is proper as a frame of a regionalization scheme. Spreading industries from Surabaya can be one of the approaches of "pulling from the top" development. It is particularly desirable from distributional considerations. On the other hand, each center could function as a center to organize the grassroots effort for rural development. This is an essential part of "pushing from the bottom" development.

As stated in various sections of the Rencana, one of the most important objectives of the Third Five-Year Development Plan of East Java is to reduce disparities in income, social welfare and overall development among various areas within the province. To attain this objective, the two-prong approach of "pulling from the top" and "pushing from the bottom" is appropriate. This approach needs such programs and projects that can fully utilize available resources and potentials.

The economic development of the five growth centers will serve as channels for extending national development down to the grassroots level and for stimulating participation of people in development activities. But it is too optimistic to expect that the development originating at Surabaya will reach those centers within the near future, unless there are conscious efforts. For this reason, more specific and well-coordinated policies and strategies for regional development are required at the various levels of government in East Java.

3.2 Development Prospective of the Study Area in the Inter-areal Context

Major cities within the Study Area and its vicinity, and their population in 1978 are as follows:[1/]

(1)	KDY Malang	449,070
(2)	KDY Kediri	198,499
(3)	KDY Madiun	139,735
(4)	KDY Blitar	70,153
(5)	KDY Mojokerto	65,548

A closer examination indicates that there is a relatively high concentration of population in the central part of the Province, along the Surabaya-Malang axis. There are also densely populated areas along the national highway from Surabaya to Ngawi through Mojokerto, Jombang and Nganjuk and along the provincial highway from Caruban to Solo through Madiun and Magetan.

At present there are three main access routes to the Study Area from the Central Belt Area:

(1) The Surabaya-Malang axis,
(2) The southbound routes from Kertosono or Nganjuk on the national highway, and
(3) The southbound route from Madiun.

1/ Figures which were published on September 16, 1978 are obtained from the Provincial Office of East Java.

These three are linked fairly well developed provincial highways down to the southern coastal hills. Since the three routes strongly influence the spatial structure of the Area's economy, the Study Area's economy can be separated into three units.

The first unit is the southern Malang and western Blitar economic unit which is closely linked to Kotamadya Malang which is its center. This sub-area, being predominantly agricultural, provides foods and industrial raw materials for the center.

The second unit is the upper Brantas Basin area which includes parts of Trenggalek, Tulungagung and Blitar, and most parts of Kediri. Its economy is closely linked to Kotamadya Kediri, its center. Trenggalek, Tulungagung and Blitar specialize mainly in food production, industrial raw material production and fishery, and supply their products to Kotamadya Kediri. Kediri performs almost all functions for the sub-area, ranging from industrial production to commercial activities. Kediri can be also a distribution center of marine products once a fishery port is developed in Prigi Bay in the future.

The third unit is the Ponorogo-Pacitan sub-area along the provincial highway from Madiun to Pacitan; Kotamadya Madiun functions as the sub-areal center. This sub-area's agriculture specializes in sugar, soy bean and other industrial raw material production. However, the influence of Madiun's economic activities over those in Pacitan is rather small partly due to lack of adequate investment in infrastructure along the provincial highway and partly due to small population size of Kotamadya Madiun. So far Pacitan's economy has been rather linked to the Solo economy in Central Java.

The south-side of coastal hills which is mainly limestone area do not form any single clearly identifiable economic unit. But it is rather linked loosely to one of the

above mentioned sub-areal economies directly north of it and is lagging in development. This situation is partly due to poor feeder road systems which connect the area with provincial highways and partly due to lack of sufficient water resources.

Since the Study Area is a part of East Java, the Area's economy depends heavily on the entire economic activities of East Java. Mainly the outside economic influence comes through major surrounding cities such as Malang, Mojokerto and Madiun since they provide major markets for the Study Area's economy. Malang is the second largest city in East Java after Surabaya. In addition to its distributive functions, major economic activities of Malang are based on agricultural and horticultural production which exploit the favorable geographical and topographical conditoins of its hinterland. Along with agricultural and horticultural production, the agro-processing and other related industries have expanded in the city, which attracted the considerable sum of Rp.40,085 million worth of domestic and foreign investment during the 1968-1977 period.[2/] In Repelita II of East Java, Malang was designated as one of the growth centers which would lead economic activities of their surrounding areas.

Mojokerto was not designated as one such growth center, but, the city is a part of greater Surabaya economic area and linked to Surabaya, Pasuruan and Gresik through fairly well developed trunk highways. In the future, Mojokerto will increase its importance in linking the Study Area with the rest of East Java and its importance also can be seen from the major domestic and foreign investments which amounted to Rp.23,439 million during the 1968-1977 period.

The last city among the three is Madiun which is located on the western part of the Central Belt Area, and it

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2/ Data provided by the Investment Coordination Board, East Java.

functions as a commercial and agro-processing center for its surrounding areas. In the Growth Center Scheme, the city is also designated as a growth center which specializes in agricultural, mining and forestry production, and related processing industries. Due to its location, the city also has a very close tie with the economy of the southern part of the Central Java and the economies of Ponorogo-Pacitan area, Surabaya and Solo. The major domestic and foreign investments during the 1968-1977 period amounted to Rp.2,490 million, the biggest in the western part of East Java.

At present, industrialization is spreading from Surabaya to those cities surrounding the Study Area. The future pattern will be more dispersed than the present one and those cities will be more closely linked with the Study Area: however, the future pattern will be determined by market conditions and infrastructure. By improving infrastructure between those cities and the Study Area as well as within the Study Area, the "pulling from the top" approach will expand the size of markets for the Study Area. On the other hand, by improving social facilities and infrastructure within the Area, the "pushing from the bottom" approach will exploit existing small but nonetheless important potential and develop human resource capabilities.

3.3 Future Pattern of Development

The most developed area in the Study Area is the upper Brantas Basin. Its population was about 3.0 million in 1978 and average population density was estimated at 847 persons per square kilometer. The population growth rate of KDY Kediri was 1.81% during the 1961-1971 period. KDY Kediri which is a growth center of the primary level in the Area functions as a commercial and industrial center of the Basin with its 200,000 population and no other city in the Study Area can compete with it in almost any respect. During the 1968-1977 period, major domestic and foreign investments made in Kediri

and other areas in the Study Area are as follows:[3/]

KDY	Kediri	Rp.8,642 million
KB	Tulungagung	1,716
KB	Pacitan	1,101
KB	Ponorogo	462

The approved private investments in Kediri are corn oil industries, pelletizing industries, cigarette industries, gunny sack industries, wood industries and others. In the future, Kediri is still expected to be the primary growth center and a full-fledged industrial center which attracts skill-oriented and labor intensive industries now spreading from Surabaya.

Growth centers of the secondary level are Ponorogo, Trenggalek, Tulungagung and Blitar. Since Kediri is a relatively well developed town, the development spreading from Surabaya will reach at Trenggalek and Tulungagung mainly through Kediri. But, at the same time, it is possible that the development will partly reach the two cities by means of sea transportation if Prigi port is constructed in the future. To Blitar, the development will come partly through Kediri and partly through Malang, but the influence of Kediri's economy will become stronger than that of Malang in the future.

Since Ponorogo is topographically separated from Kediri, the development will come from Madiun which is one of the five major growth centers in East Java. And further development will reach Pacitan through Ponorogo. Possessing a good bay for port construction, Pacitan will be able to establish a channel to link its economy with the major cities such as Jakarta and Surabaya on Java Island by sea transportation in the future and will be a growth center of the tertiary level.

3/ The Investment Coordination Board, East Java.

The future pattern of development largely depends on spatial allocation of the public investment. Two development patterns, "Kediri Lead Pattern" and "Decentralized Pattern," are shown in Figures 3.1 and 3.2 and either one of them is most likely to appear during next 15 to 20 years depending on the allocation of public investments. If the public investment is heavily concentrated in the Brantas Basin, the future pattern will be "Kediri Lead Pattern." Kediri will further strengthen its functions as a growth center of the primary level in the Area and attract more domestic as well as foreign investments. As the productivity of agriculture in Brantas Basin goes up, Kediri will expand its role as a commercial center, too and become a really full-fledged growth center. Trenggalek, Tulungagung and Blitar also will expand their functions as growth centers of the secondary level in the Study Area.

Ponorogo, a growth center of the secondary level, is also located in an intensive agricultural area and its hinterlands are a paddy area in the Madiun River Basin and in forest areas on mountain slopes. Since the size of this growth center is small in comparison to the area of Trenggalek, Tulungagung and Blitar, its functions will be mainly to collect products from its hinterlands and to ship them to the rest of East Java. It also functions as a distribution center of input to its hinterland.

As fishery activities expand on the southern coast, Prigi, Pacitan and Popoh will possess fishery ports with a complete facilities such as cold storage and processing plants. The fishery products from these towns will be mainly distributed to the growth centers through cold storage systems.

If the public investment is heavily concentrated in the coastal hill, the future pattern will be the "Decentralized Pattern" shown in Figure 3.2. Kediri still functions as a growth center of the primary level in the Area

and attract private investments. But Trenggalek, Tulungagung and Blitar are likely to form a growth zone as shown in the figure instead of forming three different growth centers. The three cities are located in an intensive agricultural area and possess a paddy area in Brantas Basin and a dry land crop area on the coastal hill as their hinterland. So they will provide important markets for the products produced in the two hinterlands and will supply input to them for their production. Since Trenggalek and Tulungagung are close to two potential sites for fishery development on the coast, they will also provide major markets for fishery products.

As fishery activities expand, Prigi and Pacitan will be full-fledged fishery towns. Also, their fishery ports will be likely to function as commercial ports in this development pattern, and Prigi and Pacitan will be growth centers of the tertiary level. In this case, the industrial development spreading from Surabaya will reach Prigi and Pacitan by means of sea transportation.

Which pattern of the Area's development will emerge and whether or not each growth center will be a full-fledged growth center at the respective level depends on traction of "pulling from the top" and thrust of "pushing from the bottom." Since the traction is expected to be not strong enough--except for Kediri--in the near future, development of the secondary and tertiary growth centers largely depends on the thrust, i.e., the economic activities of their hinterlands. Judging from the specific development objectives during the Repelita III period, the Team members consider decentralized development pattern in Figure 3.2 as a desirable pattern for the Study Area.

Figure 3.1 Kediri Lead Pattern

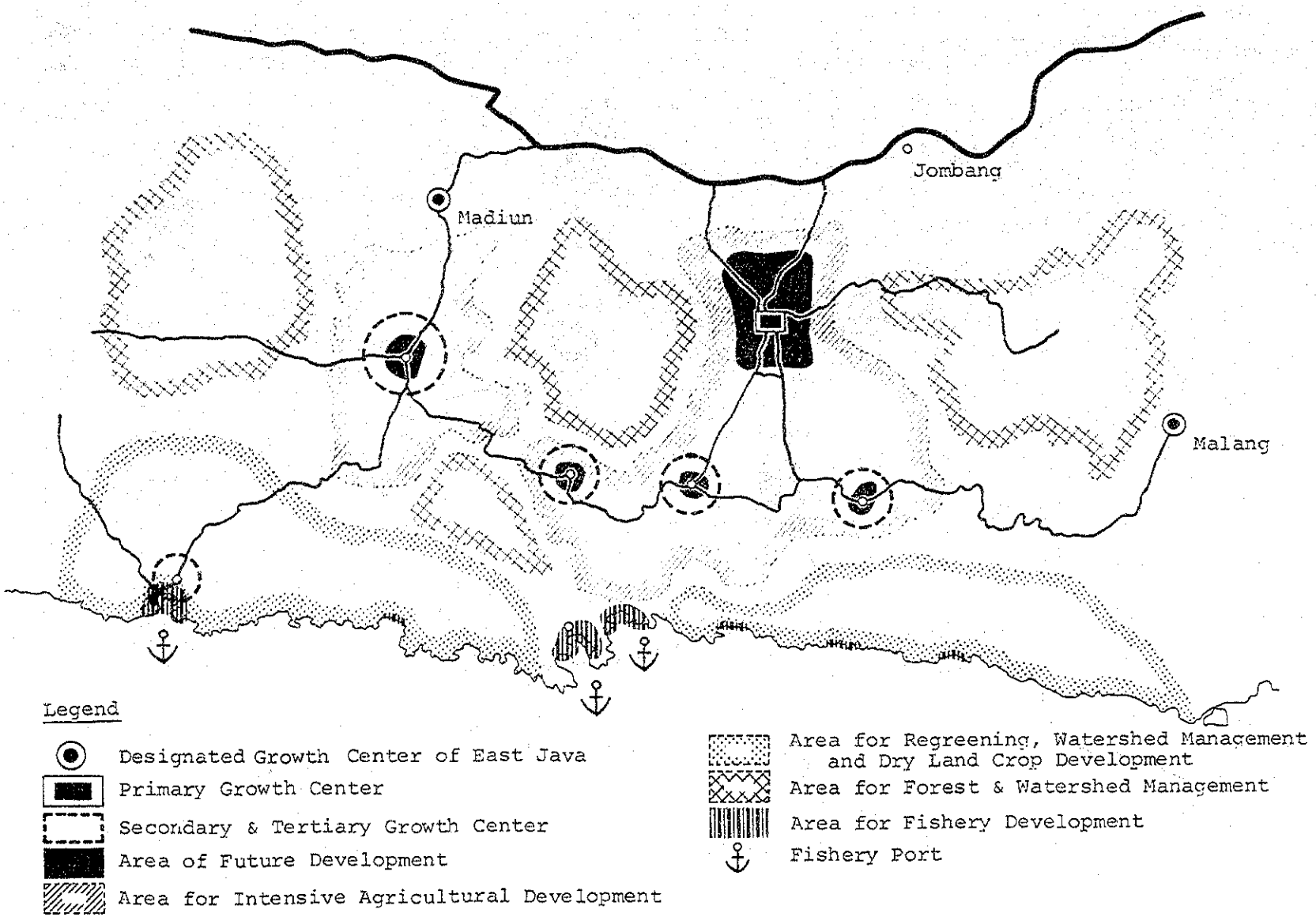
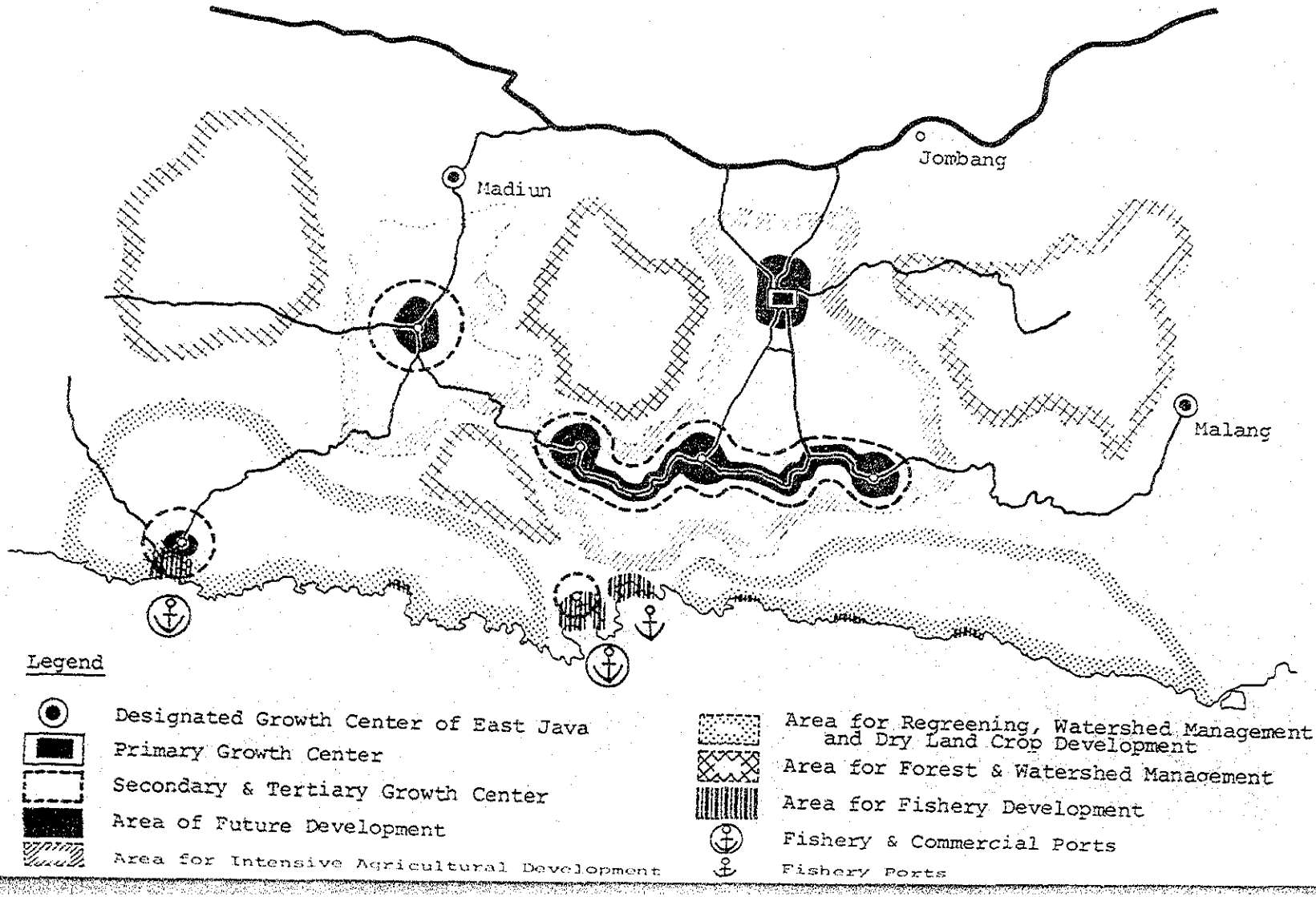


Figure 3.2 Decentialized Pattern



CHAPTER IV

ALTERNATIVE STRATEGIES AND STRATEGY EVALUATION

4.1 Alternative Resource Allocations Between the Study Area and the Rest of East Java

Alternative development strategies can be conceived with respect to resource allocation between the Study Area and the rest of East Java, and resource allocation within the Study Area. In this case, the resources refer to investable funds of the Central Government and local governments. The resource allocation of the former case (thereafter, "resource alternative") will be discussed in this section, while that of the latter case (thereafter, "development strategy") will be discussed in the second section in this chapter.

In order to estimate the amount of public financial resources available for the Study Area in the future, it is necessary to estimate governmental revenues and the expected availability of external financing. The procedure to be followed here is to make a projection of development expenditures by the Central Government up to fiscal year 1983/84 on the basis of the past performance and expected GDPs for the next five years. Given the national budgetary frame, a similar procedure will be followed to project the amounts of public resources at the provincial and local government levels.

4.1.1 Central Government Development Expenditures

Major development projects are planned and implemented by respective departments of the Central Government. The budget allocation for these types of projects by the Central Government to selected provinces is shown in Table 4.1.[1/] Reflecting the steady economic growth of Indonesia, the budget has been growing dramatically. Because the figures for DKI Jakarta consist of project budgets for both DKI Jakarta and for the Central Government, they are extremely large and have been growing at an accelerating rate. The figures for provinces except DKI Jakarta have been growing at a slightly decelerating rate since the first year of Repelita II. But this decelerating growth rate is a normal phenomenon when the amount of budgets gets bigger. The share of East Java in the total expenditures was around 6% during that period and it has been decreasing slightly. However, per capita figures indicate East Java's position more clearly. During the five years, per capita expenditure in East Java was Rp.9,116 and this was one of the lowest among the provinces.

One of the reasons for this low per capita expenditure may be that East Java is the most developed province except DKI Jakarta and that the Central Government allocated more resources to the less developed provinces than to East Java. Another reason can be that major public work projects have already been implemented to a substantial extent and the investment priority of East Java became lower than that of other provinces. Although East Java is one of the most developed provinces, its per capita gross domestic product is still low and the Province is in dire need of resources for development drastically. Since Repelita III puts emphasis on the equity of income distribution, we expect that the share of East Java will be slightly bigger than the past figures.

1/ The basic data for this table is obtained from Rancangan Dafter Proyek-Proyek provided by BAPPENAS.

Table 4.1 Resource Allocation for Development by the Central Government to Selected Provinces

	1974/75		1975/76		1976/77		1977/78		1978/79		Per Capita Expenditure (Rp) 1974/75-1978/79
	Rp. Mil.	Share	Rp. Mil.	Share	Rp. Mil.	Share	Rp. Mil.	Share	Rp. Mil.	Share	
DKI Jakarta	73,145	34.9	137,202	32.1	202,068	35.0	917,823	65.2	950,104	58.4	451,754
West Sumatra	5,329	2.5	11,236	2.6	12,069	2.1	18,313	1.3	28,732	1.8	24,587
West Java	25,907	12.4	49,617	11.6	59,504	10.3	84,108	6.0	120,791	7.4	14,216
Central Java	20,092	9.6	40,162	9.4	56,723	9.8	63,247	4.5	75,841	4.7	10,794
East Java	18,416	8.8	35,596	8.3	44,214	7.7	67,840	4.8	81,797	5.0	9,116
West Nusa Tenggara	1,404	0.7	n.a.	-	5,600	0.1	8,121	0.6	13,192	0.8	n.a.
Riau	2,547	1.2	9,701	2.3	8,976	1.6	11,200	0.8	8,016	0.5	22,147
West Kalimantan	2,810	1.3	7,771	1.8	11,195	1.9	12,231	0.9	17,529	0.1	22,417
Indonesia	209,525		427,997		577,629		1,408,059		1,625,739		24,963

Sources: 1. Rancangan Daftar Proyek-proyek, various issues provided by BAPPENAS.

2. The 1976 population data was used to derived per capita figures.

Note: The figures of DKI Jakarta include project budgets which the Central Government implements for itself.

4.1.2 Provincial and Local Government Expenditures

Sources of the provincial development budget designated as APBD DT I are provinces' own resources and subsidies, INPRES DT I, which is allocated for provincial development activities by the Central Government. The amount of this budget during Repelita II is also shown in Table 4.2 together with the Central Government expenditure. In this case, the provincial revenues from taxpayers is not large; therefore a large part of APBD DT I is from INPRES DT I.

Other subsidies from the Central Government are program-specific. They include INPRES DT II, INPRES SD, INPRES DESA, INPRES HEALTH, INPRES PASAR and INPRES GREENING. The total amount of those subsidies depends on the present situations concerning infrastructure, population size, numbers of desa and some other factors. As a result, the total amount provided to a particular province differs significantly from other provinces. However, subsidies per capita do not differ significantly from one province to another. Table 4.2 shows APBD DT II and INPRES Program budgets for East Java as a whole and for the Study Area during the Repelita II period. Among them, APBD DT II includes not only INPRES DT II but the expenditures from kabupaten's and kotamadya's own revenues.

Since many investment projects were implemented especially along the Brantas River during Repelita I and II, more than 40% of the investment for provincial water resource projects has been allocated to the Study Area.[2/] Even though the amount of the Central Government development expenditures could not be estimated for the Study Area, our estimates show

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2/ The locations of water resource projects and their budgets were identified from the project lists provided by BAPPEDA, East Java and the Department of Public Works. Although locations of some projects could not be identified, more than 40% of identifiable projects in terms of planned budgets was in the Study Area.

Table 4.2 Development Budgets for East Java and the Study Area by Source

(Unit: Rp. Million)

		1974/75	1975/76	1976/77	1977/78	1978/79	Total
APBN	East Java	35,000	40,038	63,239	83,270	93,759	315,306
	Study Area	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
APBD DT I	East Java	9,417	13,128	15,442	16,438	20,533	74,958
	Study Area	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
APBD DT II	East Java	16,277	21,533	26,342	33,194	39,256	136,602
	Study Area	3,498	4,722	5,714	6,604	7,180	27,718
INPRES SD	East Java	3,613	8,383	9,522	13,742	18,675	53,935
	Study Area	716	1,707	2,024	1,908	4,200	10,555
INPRES DESA	East Java	1,663	2,495	2,502	2,919	2,917	12,496
	Study Area	393	589	589	687	687	2,945
INPRES KESEHATAN	East Java	521	2,607	2,998	1,568	3,156	10,850
	Study Area	96	619	n.a.	456	292	1,463
INPRES PASAR	East Java	-	-	2,195	3,010	3,672	8,877
	Study Area	-	-	233	520	n.a.	753
INPRES GREENING	East Java	-	-	-	-	2,361	2,361
	Study Area	-	-	-	-	n.a.	n.a.
Total	East Java	66,491	88,184	122,240	154,141	184,329	615,385
	Study Area	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Sources: 1. From 1974/75 to 1977/78, Jawa Timur, Amat Gubernur Kepala Daerah Tingkat I, Jawa Timur dalam Rapinda KE III/1978: Evaluasi dan Pengatahan, October 1978, Surabaya.
2. For 1978/79, Jawa Timur, Laporan Pelaksanaan Pembangunan Semester II, Tahun 1978/79 di Jawa Timur, Surabaya.

Note: n.a. indicates that data is not available, while a hyphen (-) indicates no program in the year.

that the Central Government development resources allocated to the Study Area have been around 35% of the available funds.[3/]

Location of the projects by APBD DT I funds is even more difficult to identify, because many small projects and programs have been implemented beyond each regency boundary. We assume that the share of investments in the Study Area has been the same as the Study Area's population share in East Java for the following reasons:

(1) Provincial development projects emphasize more even distribution of development efforts than the Central Government projects do.

(2) Since each project is small and the number of porjects is large, it is easier for a decision maker to allocate and distribute projects evenly to each regency.

Development expenditures which are specific to the regencies can be divided easily among respective regencies. The allocation of those development expenditures to the Study Area is also shown in Table 4.2. In the table, the Study Area's share is around 19% of the provincial total in the development expenditures for this type. This percentage is almost equal to the population share of the Study Area, which is around 18%.

4.1.3 Development Expenditures of the Province: A Projection

Revenues of the Central Government as well as local governments are strongly affected by the growth of gross domestic product (GDP) and the rate of inflation, since most of the tax systems in this country are progressive ones. As the first step, the Team members fix prices at the 1978 level,

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3/ The figure was estimated on the basis of locations of water resource development projects, road projects and agricultural projects.

and then assume that GDP of Indonesia and gross regional domestic product (GRDP) of East Java grow at 6.5% and 6.8% a year, respectively. The reason why we assume East Java's GRDP growth rate as being higher than the national level is that the shares of fast-growing sectors such as the manufacturing sector, banking and financial sector, and transportation and communication sector are higher in East Java than the national average. After discussing this with officials in the Central Government as well as officials in the provincial government, the Team members consider that these growth rates can be attained without much difficulty, even though an emphasis is given to the even distribution of income.

Another assumption is that the shares of development budgets to East Java will be the same as those in the past. Based on the above assumptions, the development budgets available to East Java are estimated as shown in Table 4.3. The Central Government development budget amounts to Rp.720,283 million and its share of the total development budget is 55%. The next largest development budget is kabupaten and kotamadya development budgets (Rp.143,065 million) followed by the Provincial Government development budget (Rp.127,436 million), INPRES DT II (Rp.106,162 million), INPRES DESA (Rp.18,876 million) and other INPRES (Rp.188,174 million).

4.1.4 Development Budgets Available to the Study Area

Since major projects along the Brantas River have been already implemented, the share of development budgets by the Central Government allocated to the Study Area is expected to decline slightly unless major development projects are identified. We assume that the share of the budget will decline from 35% to 31.5% in Resource Alternative I (RA I) and to 34.5% in Resource Alternative II (RA II). The total amounts of development budgets to be allocated by the Central Government will be Rp.226,889 million and Rp.248,498 million for RA I and RA II, respectively, as shown in Table 4.4.

Table 4.3 Development Budgets Available to Jawa Timur Projection

(Unit: Rp. Million)

	1979/80	1980/81	1981/82	1982/83	1983/84	Repelita III
Central Government Development Budget (APBN)	121,887	132,083	143,131	155,104	168,078	720,283
Provincial Government Development Budget (Including INPRES DT I)	21,579	23,365	25,323	27,445	29,744	127,436
INPRES DT II	18,699 (400)	19,055 (400)	21,090 (450)	22,970 (450)	24,348 (450)	106,162
KB/KDY own Development Budget	22,520	25,222	28,249	31,639	35,435	143,065
INPRES DESA	3,357	3,357	3,861	3,861	4,440	18,876
Other INPRES	30,303	33,592	37,238	41,280	45,761	188,174
Total	218,325	236,674	258,892	282,299	307,806	1,303,996

Source: Figures are estimated by the Team members.

Notes:
1. The estimates are based on 1978 market prices.
2. The estimates are based on the information obtained from the Ministry of Finance, BAPPENAS and BAPPEDA, Jawa Timur.
3. Figures in parenthesis indicate the per capita allocation in rupiah.

Table 4.4 Development Budgets Available to the Study Area

(Unit: Rp. Million)

	Resource Alternative	1979/80	1980/81	1981/82	1982/83	1983/84	Total
Central Government Development Budget (APBN)	RA I	38,394	41,606	45,086	48,858	52,945	226,889
	RA II	42,051	45,569	49,380	53,511	57,987	248,498
Provincial Government Development Budget		5,389	5,841	6,331	6,861	7,436	31,858
KB/KDY Development Budget		10,305	11,069	12,335	13,652	14,946	62,307
INPRES DESA		657	657	756	756	869	3,695
Other INPRES		7,575	8,398	9,310	10,320	11,440	47,043
Total	RA I	62,320	67,571	73,818	80,447	87,636	371,792
	RA II	65,977	71,534	78,112	85,100	92,679	393,401

Source: Table 4.3 in this chapter.

Notes: 1. RA I and RA II indicate Resource Alternative I and II, respectively.

2. The shares of the Central Government Development Budget for the Study Area are assumed as 31.5% in Resource Alternative I and 34.5% in Resource Alternative II.

The shares of other resources to be allocated to the Study Area are expected to increase if the Central Government and Provincial Government really follow the direction indicated in the objectives of Repelita III. During the Repelita II period, the shares were around 19% of available budgets to East Java and the figure was almost equal to the share of population, 18%, in the Study Area. We assume that the shares will go up to 25%. On the basis of the above assumptions, resources allocated to the Study Area are estimated and their figures are shown in Table 4.4. The total amounts of development budgets will be Rp.371,792 million and Rp.393,401 million for RA I and RA II, respectively.

But the Central, Provincial and local governments cannot use up these amounts for new projects since many on-going projects will take a large share of Repeltia III development budgets. Our estimation indicates that Rp.331,794 million will be spent for the on-going projects and programs. Out of Rp.331,794 million, Rp.200 billion will be spent for the on-going Central Government projects, while Rp.131,794 million will be spent for the on-going INRPES program, provincial and local government projects.[4/] For this reason, the amount available for new projects to be implemented during Repelita III are Rp.40 billion and Rp.60 billion for RA I and RA II, respectively. These figures will be used for an economic analysis of a proposed strategy in Chapter V.

4/ We assume basically that the amounts equivalent to the total expenditures during the Repelita II period will be allocated to on-going programs and projects. For this reason, those amounts cannot be spent on new programs and projects.

4.2 Alternative Development Strategies with Repsect to Resource Allocation Within the Study Area

Based on the examination of the present situations and development potentials identified in the previous chapters, three alternative development strategies which are consistent with the "pulling from the top" and the "pushing from the bottom" strategy in the Phase I Study are formulated. The three strategies are the Brantas Basin Development Strategy, the Coastal Hill Development Strategy and the Central Belt Link Strategy. Major elements of the Brantas Basin Development Strategy which is classified as "pulling from the top" are industrialization and intensification of agriculture, while those of the Coastal Hill Development Strategy which is classified as "pushing from the bottom" are rural development and water resource development. The Central Belt Link Strategy which is in between of the "pulling from the top" and the "pushing from the bottom" possesses both elements of the above two Strategies. Major characteristics of these strategies are summarized on Table 4.5 with their priority areas are shown in Figure 4.1 and they are described in detail in the following section.

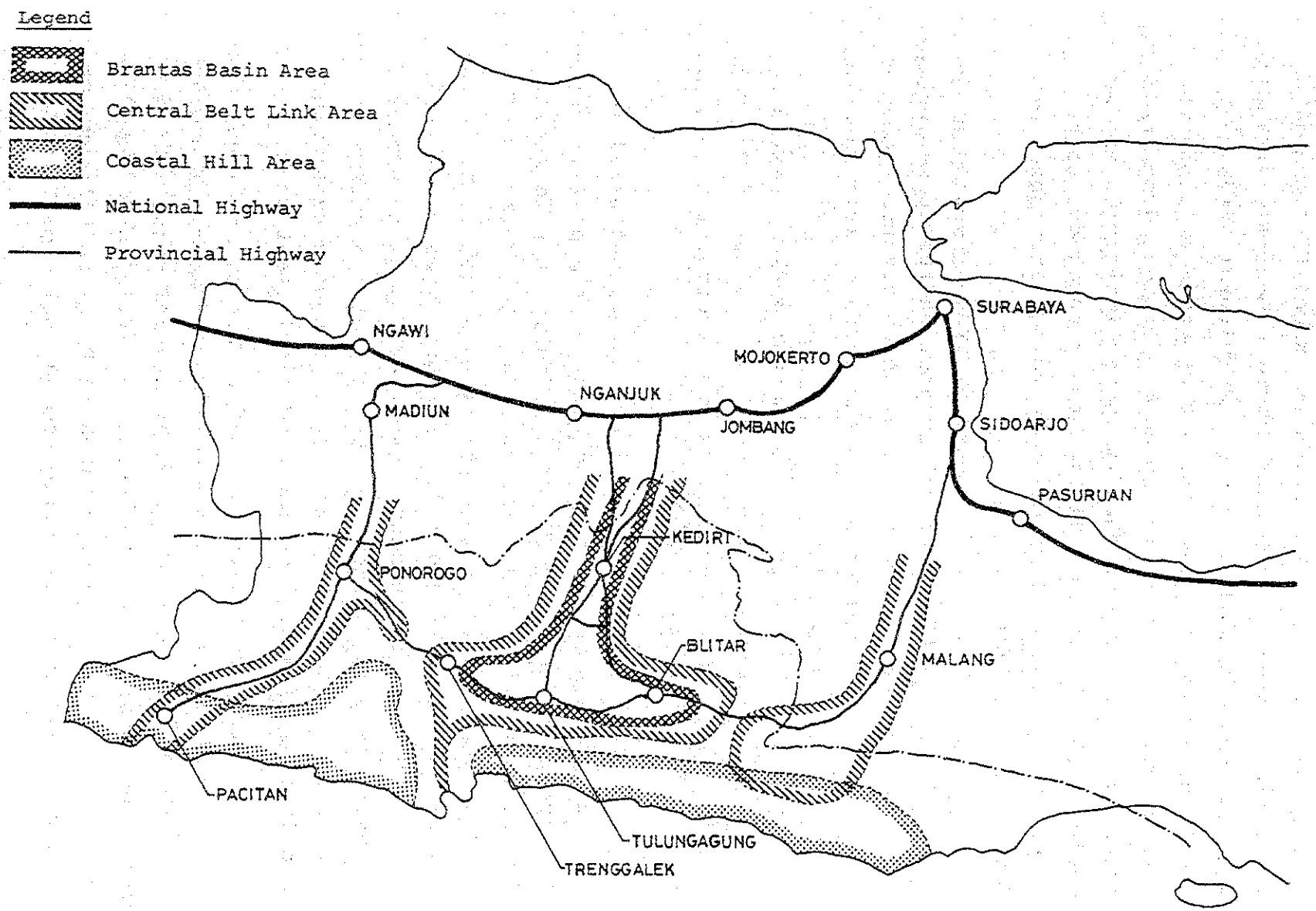
4.2.1 Brantas Basin Development Strategy

Brantas Basin which extends from Blitar to Kediri through Tulungagung and is a comparatively developed part of the Study Area. This Basin will continue to be the area which has the highest development potential. First of all, Kediri being its center will be the engine which will promote the growth of this Basin. Kediri possesses a large agricultural area which produces mainly paddy, coffee, tobacco, sugar and other upland crops.

Table 4.5 Major Characteristics of the Strategies

	Brantas Basin Development Strategy	Coastal Hill Development Strategy	Central Belt Link Strategy
Agriculture	- Introduction of double cropping systems & intensive extension services - Raw material production for agro-industry - Promotion of livestock production	- Utilization of dry upland - Promotion of livestock on dry land - Regreening and reforestation	- Promotion of livestock production - Introduction of double cropping systems
Manufacturing	- Agro-industry development - Introduction of skill oriented industries	- Promotion of home and handicraft industry with incentive systems - Promotion of small-scale agro-industry	- Improvement of existing small-scale manufacturing industry by developing incentive systems and introducing engineering workshops
Infrastructure	- Fishery and commercial port developments - Distribution systems for fish - Protective measures for the past infrastructure investment	- Small-scale dam development - Ground water exploitation - Access roads to potential areas	- Improvement provincial highway and feeder road
Other	- Promotion of fishery in Prigi	- Provision of basic human needs - Promotion of fishery along the coast line	- Organization of effective and efficient marketing systems

Figure 4.1 Priority Areas of the Strategies



A large amount of public investment has been concentrated in this area during the Repelita I and II period to develop productive infrastructure, especially irrigation systems, and expanded irrigated agricultural areas. In addition, several on-going irrigation projects along the Brantas River will further expand the irrigated agricultural areas rapidly. One of them is Lodoyo Irrigation Project which covers 13,500 ha in both Blitar and Tulungagung, to be completed in 1982. Other major on-going water resource development projects are:

(1) Southern Tulungagung River Diversion Project: A flood control project on the upper reaches of the Ngrowo River which diverts floods to the Indonesian Ocean through Parit Raya and Neyama Tunnel.

(2) Mt. Kelut Debris Control Works: Debris control works on the slopes and ravines of Mt. Kelut to protect rivers and reservoirs from sedimentation.

Even though this Basin has great potential for agricultural production, as a consequence of the past investments, the potential has not been realized fully at this moment. One way to utilize them efficiently and to exploit this potential is to construct anti-disaster facilities such as Mt. Kelut debris control works and middle reaches improvement works to protect the past investments. Another way is to promote intensive cropping systems and better water management through extension services. By these ways, productivity of paddy land in this area will be improved significantly.

Along the south side of the Basin, Prigi Bay could be a prospective site for new port development. Topographically the bay is well-sheltered by several heads and has a wide sand coast. The water depth is sufficiently deep for port development. The fish catch in Prigi in 1977 amounted to about 2,500 tons, averaging around Rp.1.6 million in

sales a day. If fishing activities are promoted through port construction, the fishery sector can be an important source of new employment opportunities as well as a source of increased income in this area.

Several agricultural processing plants using agricultural produce from this area have been established in and around Kediri. They include corn oil manufacturing, gunny sack manufacturing, tobacco manufacturing, sugar processing and others. In the future, Kediri is expected to attract skill-oriented and labor-intensive industries now spreading from Surabaya and thus, it should prepare for laying foundations of basic industries by introducing and improving metal processing and mechanical engineering industries.

This alternative development strategy would be economically most efficient as compared with the other alternatives, i.e., the highest economic growth can be achieved with a given amount of investment resources. The major components of public investment required for the strategy would be as follows:

(1) Investment in infrastructure including flood control systems around Mt. Kelut, a commercial and fishery port and new medium-scale dams for irrigation.
(2) Investment in the industrial development.
(3) Investment in the agricultural development including investment for introduction of double cropping systems and extension services.

A possible adverse effect of this strategy is to widen the disparity between the Brantas Basin and the rest of the Study Area in the level of development. However, the above-mentioned development projects will create job openings which will absorb unemployed and underemployed labor forces from the less developed section of the Study Area.

4.2.2 Coastal Hill Development Strategy

This strategy is to enhance the living standards in low income rural areas with emphasis on non-irrigated areas especially in Malang, Blitar, Pacitan and Trenggalek, and to attain quickly a major objective of the present development plan, the redistribution objective. The major problem in those areas is that agricultural land is mainly non-irrigated dry land which can produce only cassava, corn and several kinds of beans. Other problems are difficulty in the marketing of agricultural produce and insufficient knowledge about the kinds of crops suitable to the areas. Also along the coast, there are many small fishing villages, but due to lack of transportation systems, their markets are very limited. Therefore, when the highway and feeder road improvement is combined with appropriate extension services and development of marketing systems, the area may be able to attain higher income levels. A prototype rural development package may consist of the following components:

(1) Small-scale water resource development including exploitation of groundwater.
(2) Facilities and services which satisfy basic human needs of the people.
(3) Reforestation to protect existing and planned investments.
(4) Agricultural extension services with emphasis on farming of upland cash crops such as cassava, soy bean, groundnuts, cloves and corn combined with livestock production.

The prospects for this type of rural development in those hilly lands are not necessarily assured. First, the marginal efficiency of investment is generally small. Organizational and marketing improvements would require use of a large amount of skilled manpower because the number of people involved would be enormously large. Second, a number of uncertainties have not yet been clarified in regard to

the methods of rural development. Even though fish markets are at equilibrium at present, the markets may collapse due to increased catches consequent to several development projects. Also, exploitation of limestone deposits requires a large amount of investments and managerial skill which are not easily available in this area.

4.2.3 Central Belt Link Strategy

This strategy regards the Area as three different economic units which consist of southern Malang, Brantas Basin, and the combined Pacitan and Ponorogo areas. By separating the Area into three economic units, this strategy will utilize their resource endowments more efficiently. Taking advantage of easy access to other domestic markets and the agglomeration of markets existing at Surabaya and Surakarta, the strategy links up each part of the Study Area to the fairly well developed trunk highways from Surabaya to Mojokerto, Kediri, Madiun and Surakarta in the west, and from Surabaya to Malang in the south. At the same time, it is possible to connect the Study Area by means of sea transport in the Indonesian Ocean. However, this strategy is primarily concerned with linking the Study Area to the existing infrastructure in the Central Belt.

To implement this strategy, better coordination of existing programs is needed for more effective development of rural areas as well as production sectors. Particular attention should be directed to strengthening rural organizations which would play a central role in development, although some priority projects should be undertaken for improving the living conditions immediately. The main advantage of this strategy is to exploit untapped resources separately through the existing infrastructure. The necessary measures for this strategy will be as follows:

(1) Improvement of transportation systems including feeder roads.

(2) Improvement of existing small-scale manufacturing industries along main provincial highways in the Study Area.

(3) Organization of effective and efficient marketing systems.

Even though this strategy has several merits compared with the other strategies, it requires a large committment of development funds to create tangible benefits. Since investment will be spread almsot evenly throughout three sub-areas, each project will be subject to severe budget constraints and may not be provided with enough funds to break through a threshold point beyond which benefits will be created.

A migration study in Central Java indicates that people in the rural areas are quite mobile. If each sub-area is linked to a larger city in Central Belt area, many people may migrate readily to the city and rural unemployment and underemployment may decline. But at the same time, it may create congestion and urban poverty in growth centers. Thus, this strategy requires a well coordinated policy package which provides easy access to growth centers and creates employment opportunities in three sub-areas.

In view of spatial implications of three alternative strategies, the priority areas for investments under respective strategies have been defined within the areal framework as shown in Table 4.6.

4.3 Objective Achievement of Alternative Strategies

Each of the three alternatives has its specified priority area, while sectoral analyses have identified the actions which need to be taken in respective development zones--namely projects--from the viewpoint of sectoral development. Thus, the three strategies are in the form of alternative sets of projects as shown in Table B.1 in

Appendix B. The table lists up proposed projects with their locations in terms of administrative jurisdiction as well as priority and non-priority areas under respective alternative strategies.

Table 4.6 Development Strategy and Its Priority Area

Development Strategy	Priority Areas	Non-Priority Areas
Brantas Basin Development Strategy	DZ Kediri, DZ TTB Axis, DZ NW Hill and DZ NE Hill	DZ Ponorogo, DZ Pacitan, DZ S. Trenggalek, DZ Southern Coast, and DZ W. Malang
Coastal Hill Development Strategy	DZ Pacitan, DZ S. Trenggalek, DZ Southern Coast and DZ W. Malang	DZ Ponorogo, DZ Kediri, DZ TTB Axis, DZ NW Hill, and DZ NE Hill
Central Belt Link Strategy	DZ Ponorogo, DZ Kediri, DZ S. Trenggalek, DZ TTB Axis, and DZ W. Malang	DZ Pacitan, DZ NW Hill, DZ NE Hill and DZ Southern Coast

The three development strategies have to be evaluated in the light of (1) achievement of development objectives vis-a-vis (2) costs required. In order to evaluate the strategies, an attempt has been made to measure the objective achievements of every project and to aggregate them into total achievement of respective alternative strategies toward objective-mix. The method used is briefly explained as follows:

(1) Quantification of achievements by each project toward respective objectives by using a scoring method. The guidelines in Table 4.7 are set to assign scores to respective projects.

(2) Evaluation of the magnitude of objective achievements is done by multiplying scores of

a project by the project cost on the assumption that scores represent per unit cost achievement of projects.

(3) Evaluation of the magnitude of achievement of alternative strategies toward respective objectives by adding achievements by individual projects. The results are summarized in Table 4.8.

Table 4.7 Score of Attainment

Score	Degree/Nature of Objective Achievement
2	- The project attains the objective concerned significantly.
	- The project is indispensable for the area concerned to attain the objective.
	- The project is urgently needed for objective achievement.
1	- The project attains the objective concerned fairly or indirectly.
	- The project is useful for the area but other alternatives are conceivable as well.
	- The project is needed but not urgently.
0	- The project hardly attains the objective concerned.
	- The project is irrelevant to the objective.
	- The project is unfeasible in the given period of time.

The magnitude of specific objective achievements by each project is shown in Table B.1 in Appendix B. Viability of three alternative strategies vis-a-vis the objective-mix, then, can be assessed by computing weighted average of achievement toward specific objectives. Weight assigned to each objective is shown in Chapter II: Development Objectives. The results are given in Table 4.9.

Table 4.8 Achievement of Specific Objectives by Alternative Strategies

Overall Objectives	Specific Objectives	Brantas Basin Development Strategy	Coastal Hill Development Strategy	Central Belt Link Strategy
Distri-bution	Economic development of less developed areas	1.65	1.71	1.22
	Employment expansion	1.00	1.17	1.00
	Urban rural linkages	0.64	0.81	0.28
	Environmental balance	0.31	0.56	0.35
	Critical minimum services	1.15	1.30	1.08
	Basic human resources	0.92	0.72	0.51
Growth	Production/export expansion and diversification	1.30	0.85	1.23
	Industrial modernization	1.26	0.94	1.48
	Inter-regional linkages	0.48	0.40	0.14
	Natural resource exploitation	1.13	1.33	1.05
	Productive infrastructure development	1.74	1.47	1.86
	Skilled manpower and technological development	0.81	0.44	0.89

Source: Table B.1 in Appendix B.

Table 4.9 Achievement of Overall Objectives by Alternative Strategies

Overall Objective	Brantas Basin Development Strategy	Coastal Hill Development Strategy	Central Belt Link Strategy
Distribution	6.86	7.57	4.44
Growth	6.72	5.43	5.42
Overall objective-mix (Distribution with growth)	19.64	20.57	17.30

Source: Table 2.2 and Table 4.8.

The Coastal Hill Development Strategy is the strategy that attains distribution and stability objectives the most; it is followed by the Brantas Basin Development Strategy and the Central Belt Link Strategy. To attain the growth objective, the Brantas Basin Development Strategy is the best, followed by the Central Belt Link Strategy and the Coastal Hill Development Strategy. Consequently, the Coastal Hill Development Strategy appears to be the most viable in attaining the overall objective-mix in which the distribution objective is given higher priority over the stability and growth objectives, i.e., they are assigned respective weights of 8, 6, and 6. However, a combination of the three strategies will be appropriate to attain distribution and growth objectives in balance. The weighting system combining the strategies should be based on some indicators which reflect the desirable future investment in the areas and will be discussed in Chapter V.

CHAPTER V

PROJECT PACKAGING AND PRIORITY SETTING

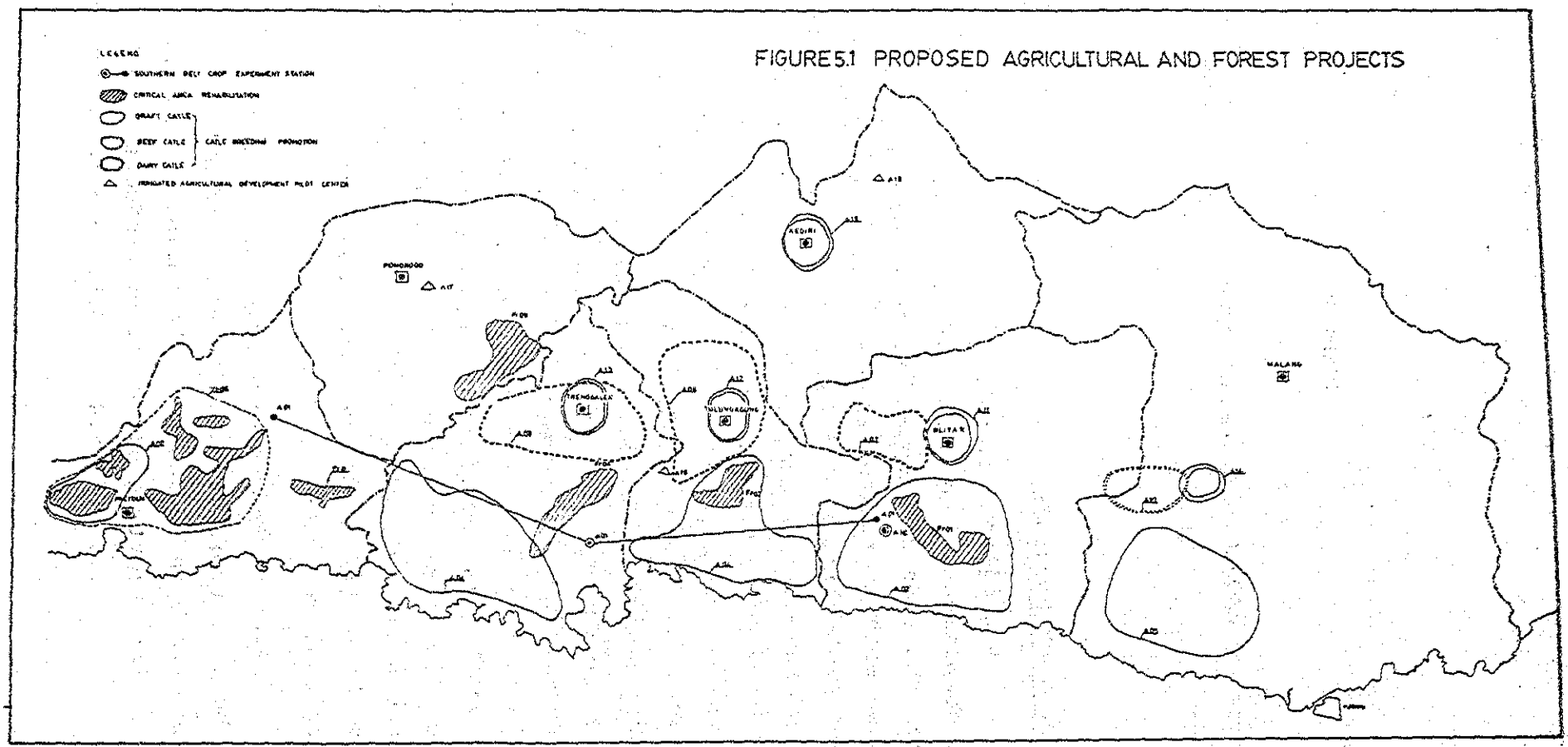
5.1 Project Packaging

A project will be more viable if it is packaged with other complementary or supporting projects. In the Study Area, a water resource development project obviously needs to be packaged with a critical area rehabilitation project for the sake of protecting irrigation systems from sedimentation. At the implementation stage, it is one of the effective and practical ways to coordinate and to monitor a group of projects as a package for an inter-departmental agency to be given authority and/or funds to urge executing agencies to take necessary actions. In this Study, projects proposed by sectoral experts are packaged not only for these considerations but also for streamlining the process of project priority setting. If projects are packaged in a proper manner before being screened, it is possible to include such projects that would otherwise be given low priority and put aside because of their insignificance as individual projects. Limited resources also warrant the projects packaged within a limited space so as to maximize agglomeration effects.

Based on the understanding that geographical space is the best platform for linking and coordinating projects, projects have been packaged in the following manner:

(1) Plotting all proposed projects (see Figures 5.1, 5.2, 5.3, 5.4 and 5.5) on one topographic map

FIGURE 5.1 PROPOSED AGRICULTURAL AND FOREST PROJECTS



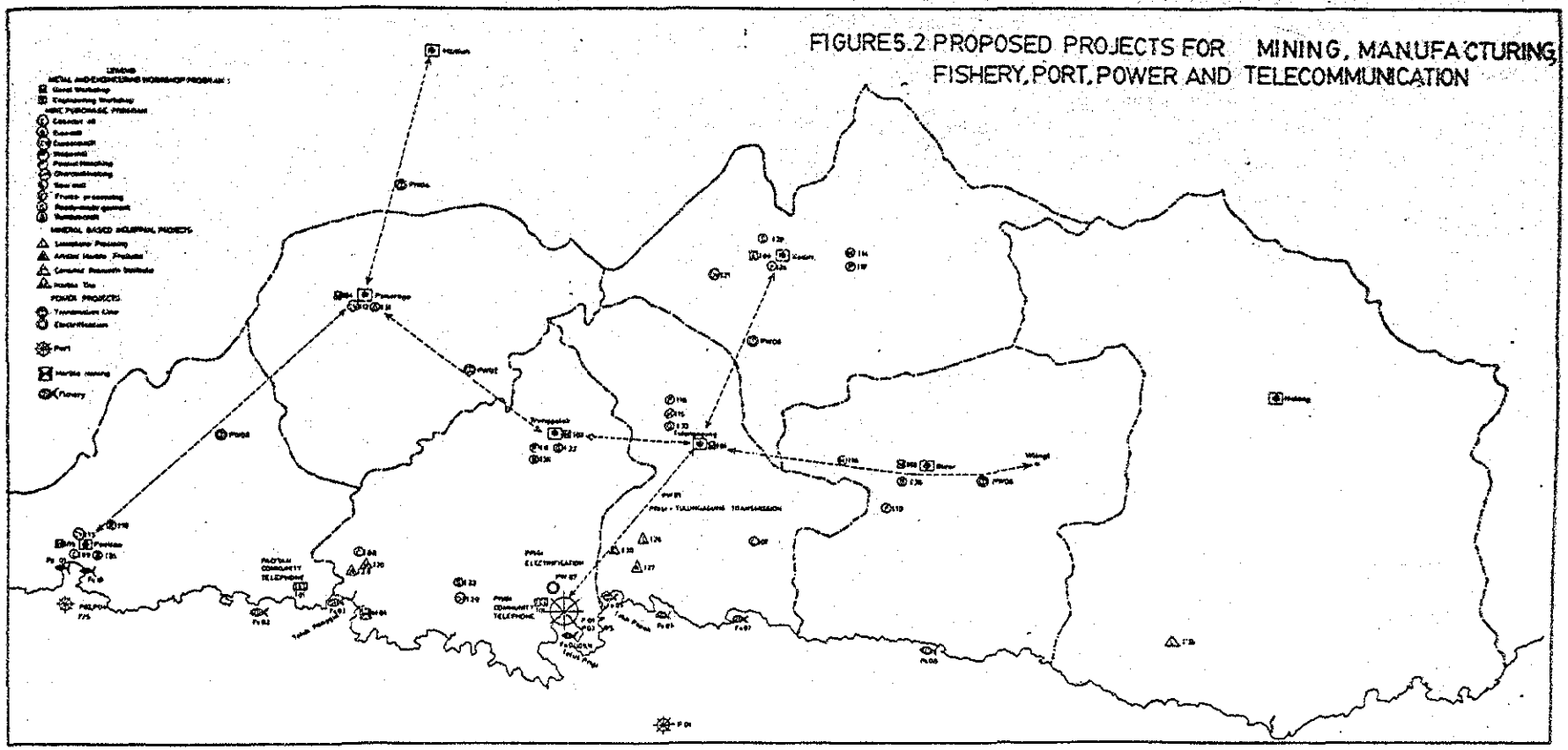


FIGURE 5.2 PROPOSED PROJECTS FOR MINING, MANUFACTURING, FISHERY, PORT, POWER AND TELECOMMUNICATION

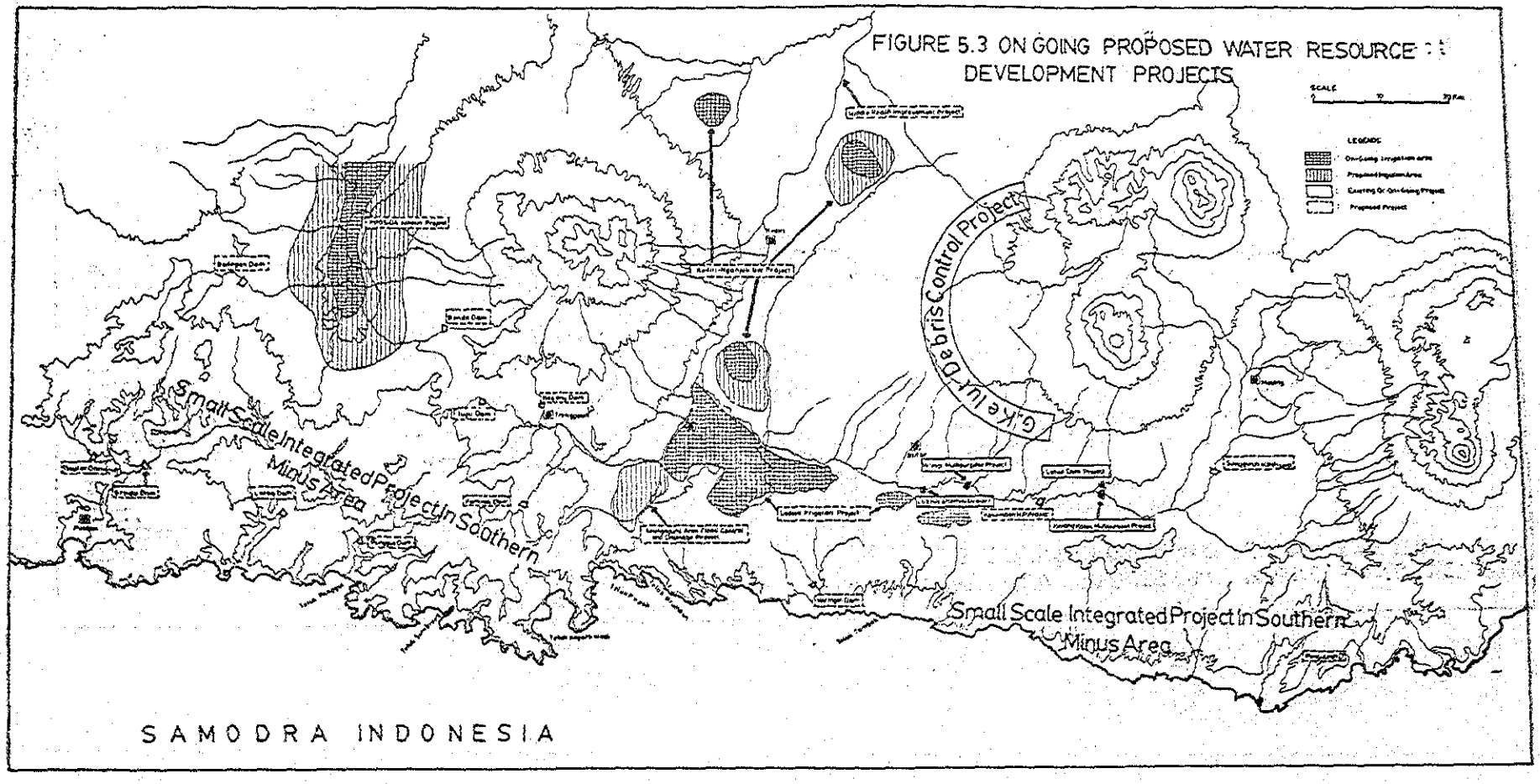


FIGURE 5.3 ON GOING PROPOSED WATER RESOURCE DEVELOPMENT PROJECTS

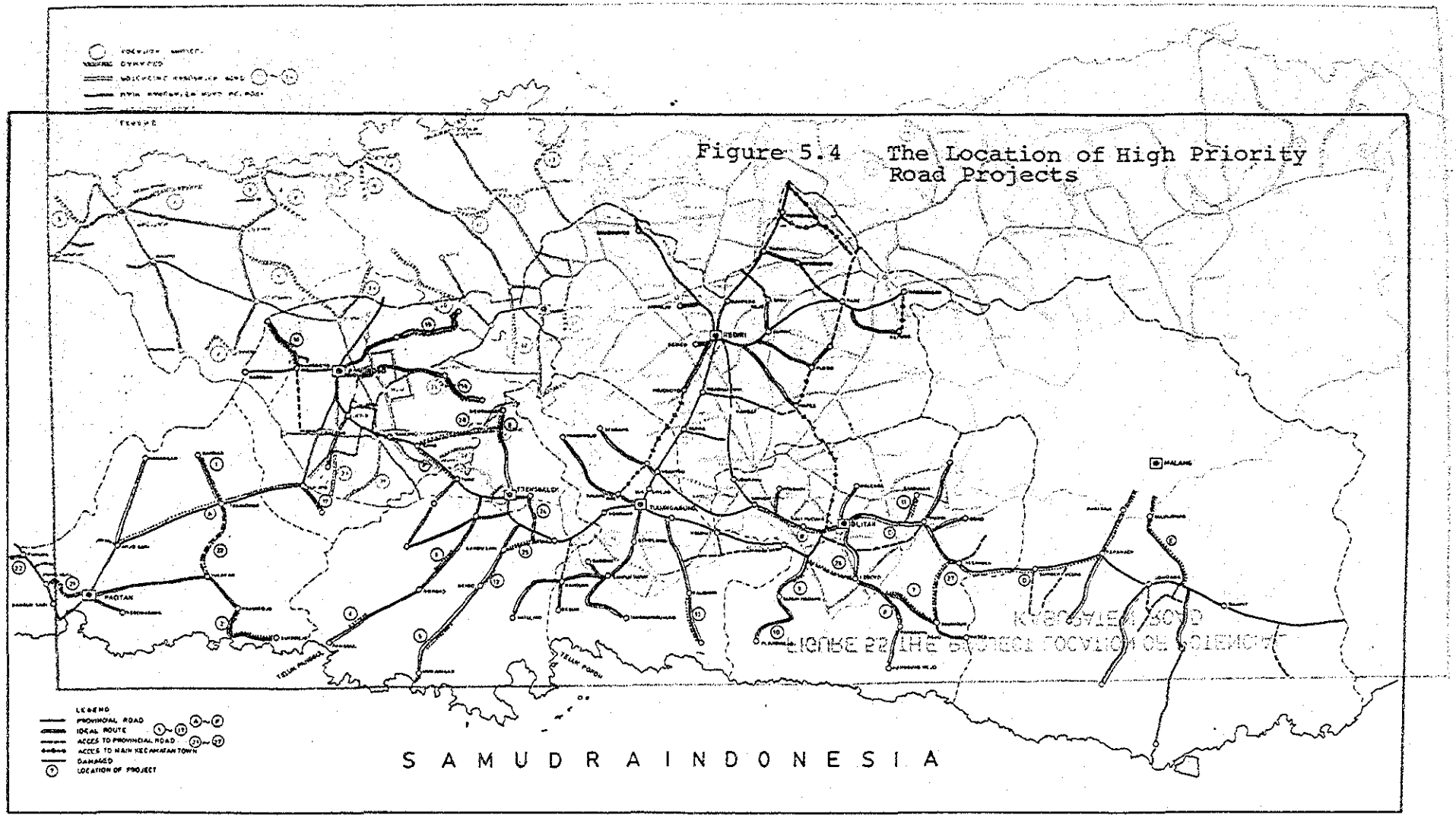
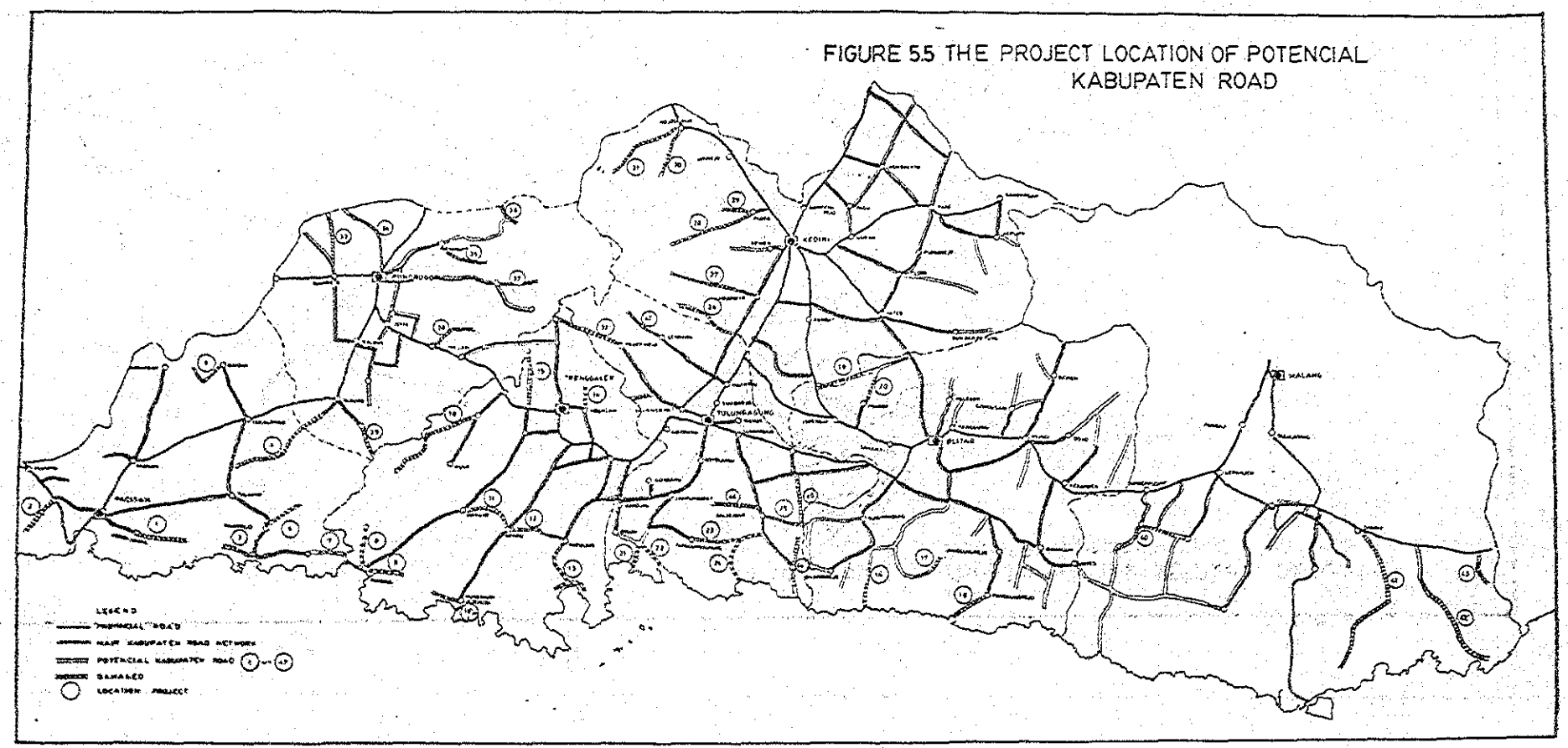


Figure 5.4 The Location of High Priority Road Projects

FIGURE 5.5 THE PROJECT LOCATION OF POTENCIAL KABUPATEN ROAD



of 1 to 250,000 scale and linking only those projects which have obvious complimentarities[1/] for the first-round packaging.

(2) Finding critical missing projects in the first-round project packages and adding them as new projects.

(3) Assigning priorities to projects, of which some are packaged already and others remain unpackaged (The method of priority setting is described in more detail in the next section).

(4) Screening packaged and individual projects of higher priority and then repackaging them taking into account spatial distribution of projects and the real framework worked out in Chapter I: Overview.

(5) Repackaging projects for the third round after finishing the screening higher priority projects.

Table 5.1 lists up project packages emerged in the first-round packaging.

1/ The Term has employed the following criteria for complimentarity assessment:

1. Key and supporting projects, e.g., power for port.
2. Backward and forward linkages, e.g., metal workshop for fishery modernization.
3. Multiplier effects, e.g., feeder roads for newly irrigated area.
4. Protecting projects from adverse effects, e.g., critical area rehabilitation for dams and irrigation canals.
5. Common use of scarce resources, e.g., small-scale irrigation and rural water supply projects.
6. Linking long- and short-run programs, e.g., a feasibility study on commercial port development at a fishing port project area.

Table 5.1 List of Project Packages: First-Round Packaging

Development Zone	Project Package Code No.	Project Package Title	Code Number of Projects Included: Ag., Forestry and Fishery	Mining and Manuf.	Water Resources	Port, Power and Telecomm.	Road
DZ Pacitan	PP01	West Pacitan Ag. and Water Resource Develop't	A02*, Fr05	I09, I10 I13	W07, W09 W13		R24, R32 R80
	PP02	Pacitan Bay Area Develop't	Fs01, Fs10 Fs14*	I05		P02, P04	R33, R98
	PP03	East Pacitan Rural Develop't	Fr06, Fs02		W14, W19	T01	R08, R34 R37, R38 R81
DZ Southern Trenggalek	PP04	Panggul Bay Area Develop't	Fs03	N01, I08 I20, I22 I28, I29	W10		R10, R36 R39, R40 R84
	PP05	S. Trenggalek Ag. and Water Resource Develop't	A05 Fr03		W15 W20		R11, R47 R86
	PP06	Prigi Bay Area Develop't	A01, Fs04 Fs09, Fs11 Fs12*, Fs13*		W23	T02, P01 P03, PW01 PW07	R44, R85
DZ Southern Coast	PP07	S. Tulungagung Mining and Manuf. Develop't		I26, I27 I30		PW05*	R53, R54 R89
	PP08	S. Blitar Ag. and Water Resource Develop't	A03, A16		W11, W16		R14, R15 R16, R48 R49, R50 R95
DZ Western Malang	PP09	W. Malang Ag. and Water Resource Develop't	A06		W17 W22		R30, R90 R72*, R73*
DZ Ponorogo	PP10	C. Ponorogo Ag. and Water Resource Develop't	A17		W05		R92
	PP11	E. Ponorogo Ag. and Water Resource Develop't	Fr04		W04		R93
DZ Kediti	PP12	C. Kediti Area Develop't	A15	I06, I14 I17, I21 I23, I24		PW06*	R94
	PP13	N. Trenggalek Ag. and Water Resource Develop't	A09 A13	I11	W01 W02		R12, R45 R46, R87
	PP14	N. Tulungagung Ag. Develop't	A08, A12 A19	I07, I15 I18			

Notes: 1/ Project codes with an asterisk mark indicate that they are not included for score calculation.

5.2 Selection of the Priority Projects

So far, this Study has proposed fourteen project packages comprising of 118 projects and 88 individual projects in addition. Total costs of all these projects amount to Rp.139.901 million, whereas the size of budget available for the Study Area is only Rp.56.727 million.[2/] In consequence, many proposed projects cannot be implemented during the Repelita III period. The proposed projects, then, need to be given priority with a view to selecting only those to be implemented within the given period of time. Those projects which are excluded from the final project proposal should be either kept for the next planning period or brought back if necessary because they have been identified as needed actions to be taken for the Study Area.

In allocating funds between different spatial areas, three variables have been used on the assumption that investment should be allocated according to spatial distribution of potentialities such as single cropping paddy areas which can be converted into double cropping ones, upland dry land cultivation, a main source of cash earnings for farmers and urban development activity, a key factor to trigger off the growth of the Study Area. The variables, therefore, are (1) area of single cropping paddy land, (2) area of dry land farming and (3) non-farm labor force. If it is assumed that the amount of investment required to create one additional employment opportunity in single cropping paddy area is twice as much as that in dry land cultivation area and just as much as that in urban area for the same purpose, the following formula would give the investment allocation:

2/ See more details in Table 5.3. The amount does not include the budgets for on-going projects, but includes the amount of foreign currency portion which is estimated as 43% of the local currency portion.

$$im_o = (pm + \frac{1}{2}dm + um) \;/\; \Sigma(pm + \frac{1}{2}dm + um)$$

where

im_o: proportion of the total investment to be made in development zone m,

pm: area of single cropping paddy (ha) in development zone m,

dm: area of dry land farming (ha) in development zone m, and

um: non-farm labor force (person) in development zone m.

However, the Study has made some modifications in favor of the investment for dry land area development in consonance with the underlying idea of the Coastal Hill Development Strategy which attains the highest score in the overall objective mix in the last chapter. Thus the modified formula is:

$$im_1 = (\frac{1}{2}pm + dm + \frac{1}{2}um) \;/\; \Sigma(\frac{1}{2}pm + dm + \frac{1}{2}um)$$

where im_1 is proportion of the total investment to be made in development zone m after the modification in favor of the investment for dry land and other respective symbols represent the same as in the previous formula. Since the Coastal Hill Development Strategy attains the highest score and its priority area is given the favorable weight for allocating investable funds, "priority area" and "non-priority areas" thereafter indicate those of Coastal Hill Development Strategy.

Table 5.2 shows the proposed allocation of investments between priority and non-priority areas with population and GRDP distribution, for the sake of comparison. So the allocation can be defined as the mixed strategy of three strategies in the following ratio:

Table 5.2 Proposed Allocation of Investments Between Priority and Non-Priority Area, Population Distribution and GRDP Distribution

(Unit: %)

	Priority Area	Non-Priority Area	Total
Proposed Allocation of Investments	34	66	100
Population Distribution	26	74	100
GRDP Distribution	28	72	100

Source: Population and GRDP data are obtained from BAPPEDA, Java Timur.

$$\text{Coastal Hill Development Strategy} = \left(\frac{\bar{im}_1}{\bar{im}_o}\right) \Big/ \left(\frac{\Sigma im_1}{\Sigma im_o}\right) \quad 3/$$

Brantas Basin Strategy = 1.0

Central Belt Link Strategy = 1.0

Breakdown of the available funds to priority and non-priority areas has been figured out as demonstrated in Table 5.3. Selection of the priority projects involves the following:

(1) Allocating available funds between priority and non-priority areas;

(2) Setting priority scores for project packages and projects;

(3) Arranging projects in priority order separately for priority and non-priority areas, and examining to what extent proposed projects can be accommodated in the available funds;

(4) If necessary, modifying the projects on the boundary lines of budgetary limits by adjusting project duration and size; and

(5) Determining the projects to be executed during the Repelita III period.

Table 5.3 Funds Available for the Projects Proposed in the Study under Resource Alternative I

(Unit: RP. Million)

	Total Area	Priority Area	Non-Priority Area
Most Likely Available Total Local Currency Funds	371,794	126,000 (34%) 1/	245,794 (66%)
(a) For On-going Projects 2/	331,794	106,700	225,094
(b) For Proposed Projects	40,000	19,300	20,700
Expected Foreign Currency Funds Matching with (b) above 3/	17,143	8,271	8,872
Total Funds for Proposed Projects	57,143	27,571	29,572

Notes: 1/ Figures are derived from Table 5.2

2/ Funds for on-going projects have been deducted from the total funds available as described in Section 4.1, Chapter IV.

3/ Expected foreign currency portion has been estimated at 43% of local currency portion (30% of the total amount of funds).

Table 5.4 shows the project packages and individual projects in priority order. The Southern Coastal Area Development Planning Project (score: 30) which is a research and development project and Kampak Dam Project (score: 30) which is a dam proposed in northern Trenggalek appear to rank first in the priority order. Some of road development projects such as the provincial road betterment and desa road development follow these. Among the project packages, Pacitan Bay Area Development Project Package (score: 24.95) ranks first followed by Prigi Bay Area Development Project Package (score: 23.94). In the priority area, the available

3/ $\bar{m}$ in the numerator indicates the priority areas of Coastal Hill Development Strategy. A rough calculation shows that the figure for the strategy is approximately 1.5.

Table 5.4 List of Proposed Projects in Priority Order

(Unit: Rp. Million)

Priority Order	Code Number	Title of Project or Project Package	Score	Those in Priority Area	Priority Area		Non-Priority Area	
					Cost	Cumulative Amount	Cost	Cumulative Amount
1	W06	Southern Coastal Area Development Planning Project	30	x	200	200		
2	W03	Kampak Dam Project	30				400	400
3	R01	Ponorogo Pacitan Provincial Highway Betterment (PHB) Project	28	x	2,280	2,480		
4	R82	Central and North Pacitan Desa Road Development (DRD) Project	27	x	774	3,254		
5	R97	Northern Blitar DRD Project	26				474	874
6	R06	Malang-Turen PHB Project	25	x	390	3,644		
7	PP02	Pacitan Bay Area Development Project Package	24.95	x	1,499	5,143		
8	R07	Bandar-Tegalombo Kabupaten Road Upgrading (KRU) Project	24	x	60	5,203		
9	R96	Southern Blitar DRD II Project	24	x	316	5,519		
10	R09	Dongko-Karangan KRU Project	24				60	934
11	PP06	Prigi Bay Area Development Project Package	23.94				7,821	8,755
12	Fr02	Tulungagung Critical Area Rehabilitation (CAR) Project	23	x	166	5,685		
13	W12	Penguluran Dam Project	23	x	1,000	6,685		
14	R89	Southern Tulungagung DRD II Project	23	x	246	6,931		
15	R91	Southern Malang DRD Project	23	x	1,796	8,727		
16	R02	Ponorogo-Trenggalek PHB Project	23				620	9,375
17	PP09	Western Malang Agriculture and Water Resource Development Project Package	22.12	x	3,587	12,314		
18	R35	Tulakan-Slahung KRU Project	22	x	175	12,489		
19	R86	Southern Trenggalek DRD II Project	22	x	245	12,735		
20	PP01	West Pacitan Agricultural and Water Resource Development Project Package	21.74	x	8,855	21,590		
21	PP03	East Pacitan Rural Development Project Package	21.10	x	2,728	24,318		
22	Fs05	Popoh Fishing Vessel and Gear Modernization (FVGM) Project	21	x	20	24,338		
23	R36	Bandar-Ngunut KRU Project	21	x	36	24,374		
24	PP08	Southern Blitar Agricultural and Water Resource Development Project Package	20.10	x	4,433	28,807		

(to be cont'd)

(Unit: Rp. Million)

Priority Order	Code Number	Title of Project or Project Package	Score	Those in Priority Area	Priority Area Cost	Priority Area Cumulative Amount	Non-Priority Area Cost	Non-Priority Area Cumulative Amount
25	R04	Wilingi-Kepanjen PHB Project	20	x	360	29,167		
26	R05	Kepanjen-Malang PHB Project	20	x	285	29,452		
27	R25	Mantren-border KRU Project	20	x	48	29,500		
28	A18	Kediri Irrigated Agriculture Development Pilot Center Project	20				600	9,975
29	R03	Blitar-Srengat PHB Project	20				225	10,200
30	R18	Kampak-Gandusari KRU Project	20				24	10,224
31	R64	Pagerwojo-Bendungan KRU Project	20				60	10,284
32	PP04	Panggul Bay Area Development Project Package	19.15	x	2,875	32,375		
33	PP11	East Ponorogo Agricultural and Water Resource Development Project Package	19.10				24,974	35,258
34	Fs06	Burumbun FVGM Project	19	x	20	32,395		
35	Fs07	Sang FVGM Project	19	x	20	32,415		
36	I12	Ponorogo Higher Purchase Program for Agro-Industry (HPPAI), Cassava Mill	19				2	35,260
37	R58	Ngadi-Doro KRU Project	19				70	35,330
38	R59	Mojo-Besuki KRU Project	19				64	35,394
39	R60	Sambirejo-Goliwan KRU Project	19				74	35,468
40	R61	Tiron-Kalimanis KRU Project	19				48	35,516
41	R62	Berhek-Blangko KRU Project	19				42	35,558
42	R63	Berhek-Sawahan KRU Project	19				98	35,656
43	R19	Kalidawair-Pucanglaban KRU Project	18	x	90	32,505		
44	PP13	Northern Trenggalek Agricultural and Water Resource Development Project Package	17.76				5,799	41,455
45	PP05	Southern Trenggalek Agricultural and Water Resource Development Project Package	17.35	x	2,206	34,709		
46	R43	Kampak-Watulimo KRU Project	17	x	90	34,799		
47	R56	Kalimenur-Teluk Sene KRU Project	17	x	49	34,848		
48	PP14	Northern Tulungagung Agricultural Development Project Package	16.71				646	42,101
49	PP07	Southern Tulungagung Mining Manufacturing Development Project Package	16.26	x	2,259	34,107		
50	I25	Malang Limestone Processing Project	16	x	880	37,987		

(to be cont'd)

Priority Order	Code Number	Title of Project or Project Package	Score	Those in Priority Area	Priority Area Cost	Priority Area Cumulative Amount	Non-Priority Area Cost	Non-Priority Area Cumulative Amount
51	R26	Tegalombo-Tulakan KRU Project	16	x	96	38,083		
52	PP10	Central Ponorogo Agricultural and Water Resource Development Project Package	15.15				49,126	91,227
53	PP12	Central Kediri Area Development Project Package	15.12				1,503	92,730
54	A04	Tulungagung Draft Cattle Breeding Promotion (DCBP) Project	15	x	20	38,108		
55	A10	Malang DCBP Project	14	x	20	38,123		
56	R13	Lodoyo-Binangun KRU Project	14	x	108	38,231		
57	R42	Dongko-Kampak KRU Project	14	x	102	38,333		
58	I01	Tulungagung Metal Workshop Project	14				19	92,749
59	I16	Blitar HPPAI, Maize Mill	14				2	92,751
60	I10	Blitar HPPAI, Peanut Thrashing	14				2	92,753
61	A07	Blitar Beef Cattle Breeding Promotion (BCBP) Project	13				20	92,773
62	I04	Ponorogo Metal Workshop Project	13				19	92,792
63	R41	Jombak-Sidomulyo KRU Project	13				108	92,900
64	W24	Pacitan River Realignment Project	12	x	2,000	40,333		
65	R57	Pagerwojo-Bendung KRU Project	12	x	70	40,403		
66	I02	Trenggalek Metal Workshop Project	12				19	92,919
67	I03	Blitar Metal Workshop Project	12				19	92,938
68	R55	Tangunggunung-Kalimenur KRU Project	11	x	72	40,475		
69	R17	Talun-Gandusari KRU Project	11				24	92,962
70	A14	Malang Dairy Cattle Breeding Promotion (DYCBP) Project	10	x	20	40,495		
71	R29	Lodoyo-Karangan KRU Project	10				54	93,016
72	R51	Bondorejo-Udanawu KRU Project	10				48	93,064
73	R52	Jatilengger-Bendorejo KRU Project	10				54	93,118
74	R28	Gandusari-Durenan KRU Project	9				48	93,166
75	A11	Blitar DYCBP Project	8				20	93,186
76	R27	Pogalan-Rejowinangun KRU Project	8				42	93,228