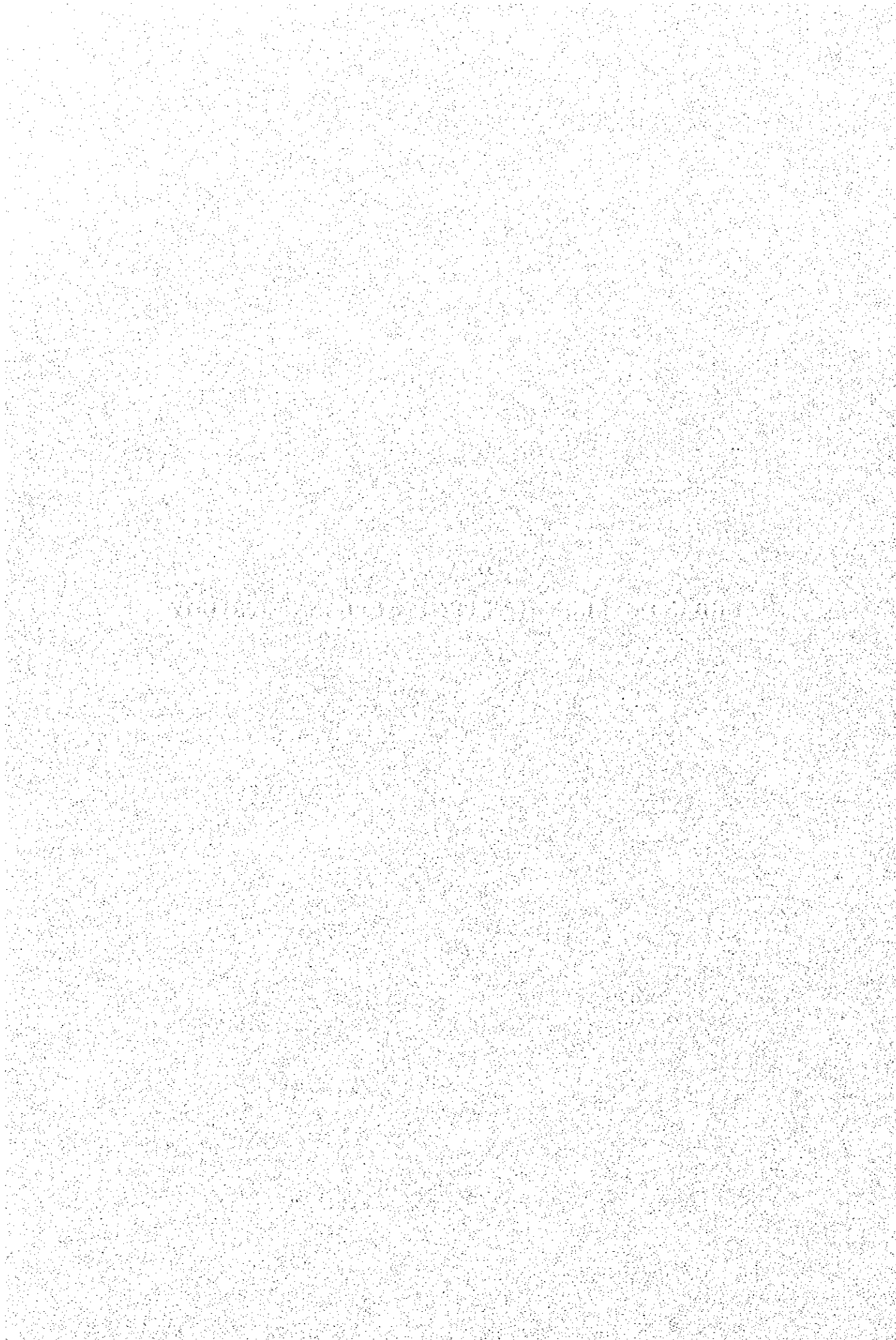


PART II
URBAN DEVELOPMENT PROJECT PLANNING STUDY



Chapter 5 Global Picture of Jakarta Metropolitan Area (JABOTABEK)

5-1 Regional Characteristics of JABOTABEK

(1) Population

The Jakarta Metropolitan Area (JABOTABEK) of which total area is approx. 6,639km² is divided into 7 administrative areas, as shown in Figure 5-1-1. DKI Jakarta is the political, financial and trading focus of the nation as the national capital, while the surrounding hinterland in Bogor, Tangerang and Bekasi (which form part of the Province of West Java) provide a diversity of farming, manufacturing and trading opportunities.

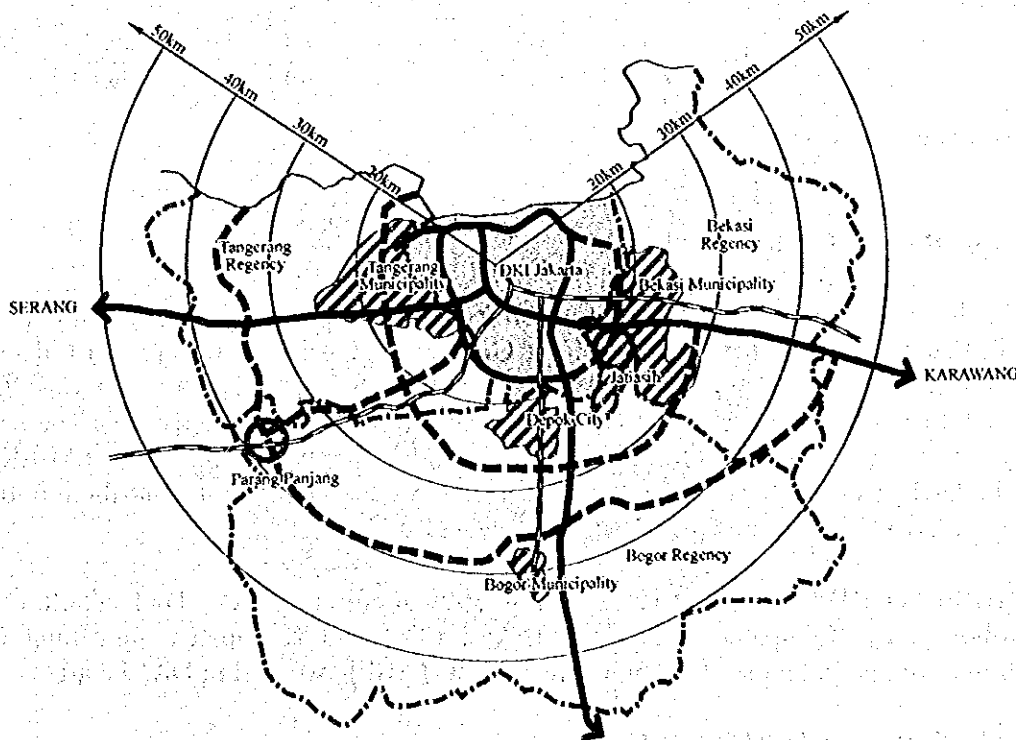


Figure 5-1-1 Regional Structure of JABOTABEK

Table 5-1-1 shows the population and number of households by district in JABOTABEK. The population of JABOTABEK in 1996 was 20,508 thousands and DKI Jakarta comprised 9,341 thousands or 46% of JABOTABEK's population. JABOTABEK's growth rate between 1995 and 1996 was 2.5%, which was higher than the national average of 1.8%, led by the high increase rate of Tangerang (5.6%) and Bekasi (8.2%). The population of Kabupaten Bogor increased until 1995 but slightly reduced in 1996 due to decrease in peripheral Kecamatan.

The population density in 1995 was about 30 persons/ha while that in DKI Jakarta was as high as 138 persons/ha. The population density is large in the central Jakarta and lower in the southeast and southwest peripheral areas. The area where the density is over 100 persons/ha is DKI Jakarta, Kotamadya Bogor.

In 1996, the number of households in JABOTABEK was 4,438 thousands and the average household size was 4.6, while that of DKI Jakarta and BOTABEK was 4.4 and 4.8 respectively.

Table 5-1-1 Population by Districts in JABOTABEK

	Area (km ²)	Population in 1995	Population in 1996	Distribution (%)	Density in 1995	Growth rate	Household in 1996	Household size in 1996
DKI Jakarta	662	9,160	9,341	45.5	13,847	2.0%	2,117	4.41
Kabupaten Tangerang	1,235	2,413	2,548	12.4	1,953	5.6%	525	4.86
Kotamadya Tangerang	184	1,352	1,414	6.9	7,357	4.6%	302	4.68
Kabupaten Bogor	3,034	3,722	3,590	17.5	1,227	-3.6%	791	4.54
Kotamadya Bogor	40	648	671	3.3	16,370	3.6%	144	4.65
Kabupaten Bekasi *	1,484	2,720	2,944	14.4	1,833	8.2%	558	5.28
BOTABEK	5,978	10,855	11,167	54.5	1,816	2.9%	2,321	4.81
JABOTABEK Total	6,639	20,015	20,508	100.0	3,015	2.5%	4,438	4.62
Jawa Barat	43,177	39,337	40,118	-	911	2.0%	9,575	4.19
Indonesia	1,937,179	194,775	198,343	-	101	1.8%	46,401	4.27

Note: * including Kotamadya Bekasi.

Source: Statistical Data from DKI Jakarta and Kabupatens

(2) Gross Regional Domestic Product

In 1997, the agricultural (primary) sector formed 14.8% of the Gross Domestic Product (GDP) in Indonesia, while it was 2.2% of the Gross Regional Domestic Product (GRDP) in JABOTABEK and only 0.2% in DKI Jakarta. The industry (secondary) sector was 40.6%, 41.9% and 36.3% for Indonesia, JABOTABEK and DKI Jakarta respectively. The service (tertiary) sector was contrarily formed 42.1% in Indonesia, 55.9% in JABOTABEK and 63.5% in DKI Jakarta. The agricultural sector plays no significant contribution in the economy in JABOTABEK.

JABOTABEK's GRDP was Rp.94,195 billion in 1995 at current price. DKI Jakarta formed 74%, followed by Kabupaten Bogor and Bekasi (9%) and Kabupaten Tangerang (6%). These figures imply that most of the employees in BOTABEK worked in DKI Jakarta.

(3) Urbanization in JABOTABEK

In 1980, the urban area was concentrated within the boundaries of DKI Jakarta with a major sub-center around the city of Bogor and minor centers in Bekasi, Tangerang, Depok and so on. Followed by demographic changes, the expansion of urbanization both within and outside the boundaries of DKI Jakarta has been forming a conurbation with the cities of Bekasi, Tangerang and Depok, especially along toll roads (Jakarta-Cikampek, Jakarta-Merak and Jagorawi) and the railways. It is deemed that the urbanization in the fringe areas has been caused from filling up of DKI Jakarta in terms of population density. Furthermore, accessibility and availability of land at relatively low prices of those fringe areas have been attracting informal housing developments. Figure 5-1-2 shows the areas of rapid population growth in BOTABEK during the 1980s. The yearly population growth rate of those areas was more than 7%.

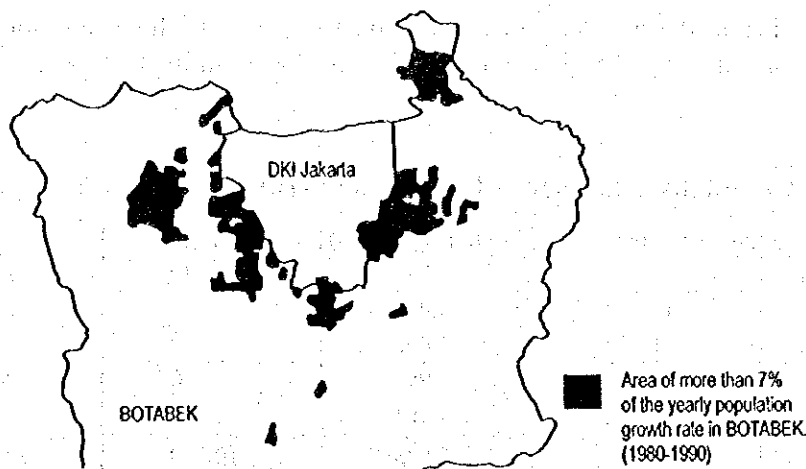


Figure 5-1-2 Areas of Rapid Population Growth in BOTABEK during the 1980s

Although the fringe areas have been mainly developed for residential purpose, the low-income group tends to be in DKI Jakarta to avoid high commuting costs. In addition, transmigration from rural areas has increased the population density of the slum areas in DKI Jakarta. Figure 5-1-3 shows the distribution of slum areas in DKI Jakarta. In 1990, the total slum area was estimated at 4,481ha, and the population was estimated at 2.3 million. These figures meant that the total slum area occupied approx. 7% of DKI Jakarta, and the average population density in slum areas is at the high level of 513 persons per hectare.

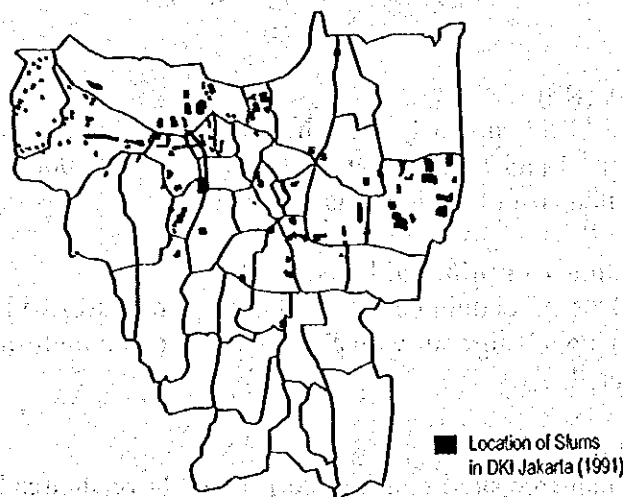


Figure 5-1-3 Distribution of Slum in DKI Jakarta

(4) Housing

1) Public Housing Supply

Perum Perumnas is the sole national corporation for urban and housing development. In DKI Jakarta, Sarana Jaya (the DKI Jakarta Public Housing Corporation) has been developing housing. There are committed housing development projects for a total of 115,780 units (Perum Perumnas) and 11,420 units (Sarana Jaya) in JABOTABEK. Since the economic crisis, however, the new stage of those projects has been postponed.

By September 1996, Perum Perumnas had constructed 328 thousand housing units in Indonesia. Approximately 65 thousands (20%) of those units had been constructed in JABOTABEK.

Table 5-1-2 Cumulative Number of Housing by Perum Perumnas by September 1996

	Nucleus House(RSS)	Modest House(RS)	Apartments	Total
DKI Jakarta	7,960	1,744	4,740	14,444
Bekasi	13,579	8,012	0	21,591
Bogor	1,239	2,406	0	3,645
Tangerang	14,895	9,999	0	24,894
JABOTABEK	37,673	22,161	4,740	64,574
Indonesia	190,442	127,023	10,260	327,725

Source: BPS, 1997, Statistical Year Book of Indonesia 1996

2) Characteristics of Housing in Indonesia

In Indonesia, preference or custom to own houses rather than lease/rent is dominant. The number of households which own their own house account for 81.6% including installment plan. In large cities this tendency gets less clear. However still 53.3% in DKI Jakarta own houses and "Lease/rental" formed 32.6%.

The floor area of most houses range 50-99 m² (33%) and 20-49 m² (32%) in DKI Jakarta. There are 14% of small houses with the floor area of less than 20 m².

The housing regulation No.4/KPTS/BKP4N/1995 stipulates the standard house and site as follows:

- Simple house (RS)

The house called "RS" should be detached or terrace houses (not apartment) with a floor area between 21 and 70m² on the site between 54 and 200m². The maximum unit price of construction cost of the house is also regulated.

- Very simple house or minimal house (RSS)

The house called "RSS" should be detached or terrace houses with a floor area between 21 and 36 m² having a bathroom with a water closet and a multi-use room. Mostly no finishing is prepared.

- Ready build plot

The ready build plot (prepared housing plot) should have an area between 54 and 72m² fronting a road with a width of no less than 2.8m, with infrastructure of electricity, water supply and public MCK (shower - washing - toilet), play lot and small shop.

Table 5-1-3 Statutory Standard House

	Site area (m ²)	Floor area (m ²)	Unit construction cost
RSS	54 - 72	21 - 36	half of highest RS
RS (Simple house)	54 - 200	21 - 36 - 70	low
Medium house	54 - 200 - 600		low - high limit
Luxurious house	54 - 600 - 2,000		(above high limit)

(5) Infrastructure

The characteristics of demographic changes in JABOTABEK, since the 1980s, were the dramatic decline in the rate of population growth in DKI Jakarta and the increased growth rate in the BOTABEK area, in accordance with the improvement of transportation and housing development, especially along the east-west axis. The expansion of urbanization is generating further efficient provision of infrastructure. To cope with the financial shortage, participation of the private sector has recently been introduced for provision of infrastructure such as transport, telecommunications and power supply.

Existing conditions of the infrastructure in JABOTABEK is briefly described as below.

1) Roads

The Department of Public Works regulates physical construction and within the Department it is the Directorate General Bina Marga that plans and regulates construction of national roads and highways. This office also oversees planning and construction of some urban arterial roads, including urban toll roads.

The principle constraints on the existing road network accrued from the lack of a coherent hierarchy. The existing road system throughout most of the urbanized JABOTABEK has evolved from the dirt tracks and paths of former agricultural uses. The new major routes within this network have been swamped by ribbon development. The main lines of demand are thus served by roads where poor alignments, variable width, indifferent construction and frontage access all conspire to reduce efficiency.

2) Water Resources

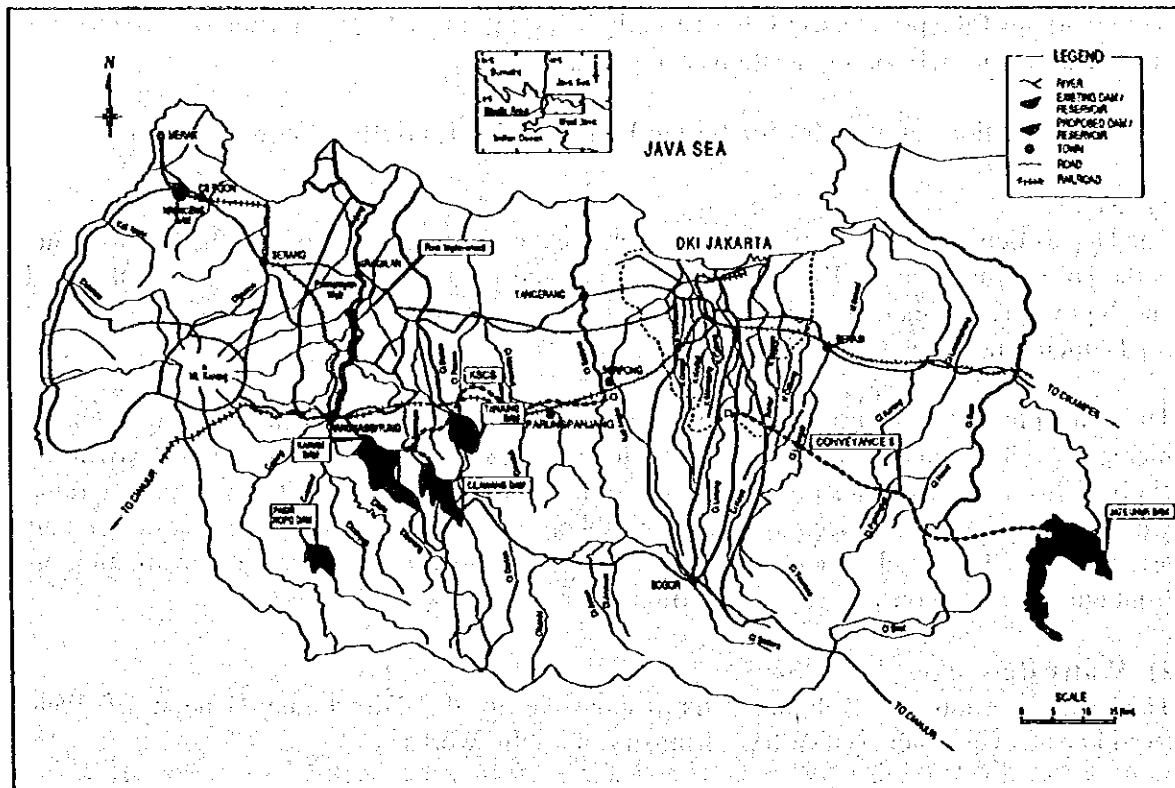
The water resources development is responsible to the Directorate General of Water Resources Development (DGWRD), Ministry of Public Works.

Generally groundwater is recharged in the southern area and discharged in the northern area of JABOTABEK. The groundwater levels are not constant, in some areas of Jakarta for example, groundwater levels vary from virtually zero depth to depths of 30 or 40 meters. The major issues of groundwater resources are described as follows.

- Excessive abstraction from groundwater has been causing decline of groundwater levels, particularly by industrial and large-scale private uses.
- There has been an apparent increase in the salinity of groundwater, particularly from shallow wells, due to the intrusion of the seawater caused by the decline of the groundwater level.
- In areas of high groundwater abstraction, particularly from the deep aquifer, the water is squeezed out of the clay layers and this results in substantial compression of the overlying soils, causing noticeable land subsidence.
- The shallow aquifer is being polluted by uncontrolled discharge of domestic wastewater and industrial wastes.

As for surface water resources, the eastern parts of JABOTABEK and major portions of DKI Jakarta are served by the Jatiluhur dam, however, additional demands for water supply in these areas are being constrained by the lack of adequate transmission capacity, rather than the availability of water.

DGWRD carried out the JABOTABEK Water Resources Management Study (JWRMS) to cope with the increase of water demand due to the rapid economic development in the JABOTABEK area. Based on the JWRMS, the Study on Ciujung-Cidurian Integrated Water Resources in Indonesia (SCCIWR) was carried out by JICA in 1995. The water source and conveyance schemes recommended by the JWRMS and further detailed by the SCCIWR are shown in Figure 5-1-4.



Source: The Study on Ciujung-Cidurian Integrated Water Resources in Indonesia (SCCIWR), February 1995

Figure 5-1-4 Water Resources Developments Recommended by JWRMS/SCCIWR

The Government of Indonesia has not yet authorized the water resources development plans and water supply system proposed in those studies. If those plans were implemented, the water conditions supply in JABOTABEK, including new housing developments in suburban areas, would be greatly improved.

3) Water Supply

The piped water supply system in urban areas is generally developed by the Directorate General of Human Settlements (Cipta Karya), Ministry of Public Works. Then the facilities are transferred to the Local Government Water Supply Enterprise (PDAM) which is established in Kabupaten or Kotamadya.

The total urban population in the JABOTABEK area served by treated piped water supply was around 3.5 million in 1990, with about 260,000 connections in DKI Jakarta and about 100,000 connections in BOTABEK.

4) Electricity

The state-owned electricity company, Perusahaan Umum Listrik Negara (PLN), has the responsibility for the generation, transmission and distribution of power throughout the archipelago.

Table 5-1-4 shows the numbers of PLN customers by Kabupaten and customer type in JABOTABEK. While the electrification rate by household base in DKI Jakarta alone is over 80%, the rates in Tangerang and Bekasi are at 55.8% and 59.5% respectively.

Table 5-1-4 Numbers of PLN Customers by Kabupaten in JABOTABEK

Type of Customer	DKI Jakarta and Tangerang (1995)	Bogor	Tangerang (1996)	Bekasi (1996)
Social	24,961	n.a.	4,482	3,985
Household	1,980,659 (approx. 80%*)	n.a.	433,027 (55.8%*)	332,301 (59.5%*)
Shop	109,275	n.a.	16,085	10,525
Hotel	252	n.a.	10	21
Industry	9,131	n.a.	3,019	847
Government	3,667	n.a.	393	308
Roads	1,884	n.a.	187	397
Total	2,129,769	n.a.	457,203	399,751

Note: * household electrification rate estimated by JICA study team

Source: Statistical Data from DKI Jakarta and Kabupatens

5) Drainage and Flood Problem

DKI Jakarta lies primarily in the flood plain zone of catchment areas of a number of rivers and streams. The drainage and flood problems are the result of both overflows from drains and river flows, however, DKI Jakarta has not experienced the wide devastating river overflows, which are experienced in many other flood plain river settlements. Localizing flooding is a result, very largely, due to inadequate local drainage networks and street drainage, which are often built to serve minor rainfall runoffs.

6) Sewerage System

In the JABOTABEK area, wastewater disposal is predominantly by on-site systems such as septic tanks, pit latrines and communal toilet facilities. Apart from a number of individual private estates, and high rise developments, which are supposed to have their own sewerage connections and treatments, only a very small part of JABOTABEK is served by a reticulated sewerage system.

5-2 Urbanization Trends in JABOTABEK

(1) Urbanization Growth

The Jakarta metropolitan area has continued its tremendous urban growth as the largest center for every political, economic and cultural activity in the nation, the historical trend of which can be summarized, in brief, through three stages.

1. Centralization into center of DKI Jakarta along the north-south urbanized axis of River Ciliwung without proper management during the early 1970s.
2. Rapid urban sprawl pressure by huge migrants resulted in new developments and expansion of urbanization to all adjacent areas both in West Java and Bogor. Accordingly, development directions to the south should be restricted and shifted toward the east and the west because of various urban problems
3. In latter half of the 1980s, huge scale industrial and housing developments extended to the east and west out of DKI Jakarta and formed the greater JABOTABEK metropolitan area as a metropolitan area. Further expansion of JABOTABEK toward Serang and Karawang was considered under aggressive economic growth

until 1997.

However, the sudden drastic change in the economic activity, from an aggressive economic growth from the 1980s to 1997 to a decline in development during 1998, must require a shift/revision of the development scenario mentioned above, though this has not come to the knowledge of the study team.

(2) Transportation Network

An aggressive urban development toward east-west and south has been planned and achieved by the toll expressways such as Jakarta-Cikampek, Jakarta-Merak and Jagorawi, since road transport is the principal mode both for passengers and freights. For further urbanization extension in and outside of JABOTABEK, the expansion of toll expressways is at present in various stages of planning and implementation: Jakarta Outer Ring Road, Second Outer (Outer-outer) Ring Road, Jakarta-Serpong Toll Road, Kapu-Teluknaga-Tangerang Toll Road, Triple Decker Toll Road and some Radial Toll Roads.

However, these plans should be carefully reviewed as a precondition for the future urban development, taking into consideration the updated condition and the possible effects after the drastic economic decline since middle of 1998.

On the other hand, the advantages of railway commuter services with their relatively punctual schedules and cheap fares have been reevaluated through the recent expansion of the metropolitan area beyond the range of road transport. There are also various plans on the improvement of the existing railway system and the introduction of LRT or subway systems in JABOTABEK. When the locations of future urban developments are taken into consideration, the creation of an integrated urban mass transit system should be one of the key factors, both by road and by rail as well.

(3) Urban Environmental Constraints

Various environmental problems have emerged because of insufficient countermeasures as well as the too rapid urbanization, such as water pollution, water supply problems, flooding, solid waste treatment, air pollution and traffic accidents, etc.

(4) Urban Development

Large scale urban developments such as new towns and satellite cities in JABOTABEK are mainly executed by private developers; e.g. Bumi Serpong Damai (6,000ha, Tangerang), Kota Baru Cikarang (5,400ha, Bekasi), Kota Baru Tigraksa (3,000ha, Tangerang), Bintaaro Jaya (1,700ha, Jakarta), etc. sometimes together with toll road construction by BOT scheme.

On the other hand, since urban development by public sector is concentrated into the area of immediate needs of direct investments (such as basic human needs), it is focused on basic infrastructures especially roads, public utilities and low-income houses, and so on.

Some new demarcations between the two sectors may be established, considering the existing severe economic recession effecting both sectors.

5-3 Urban Development Perspective and Necessary Measures in JABOTABEK

5-3-1 Shifting Urban Policies in Response to the Economic Growth in the 1990s

The basic urban growth policy in the 1980s and the early 1990s was the concentration of urban expansion along the East-West corridors centering DKI Jakarta, and preventing the urban expansion in all other directions, which would lead to an efficient and effective land and infrastructure development. This East-West oriented urban structure was manifested in the "JABOTABEK Metropolitan Development Plan Review (JMDPR, 1993)".

With the advent of massive urbanization spurred by the rapid economic/industrial growth in Indonesia, as well as JABOTABEK, in the 1990s, this streamlined urban structure is planned to be expanded to the mega-regional type structure of the JABOTABEK – SEKAR area including Cikampek/Karawang to the East, and Cilegon/Serang to the West as defined in the study on "Development Strategy of JABOTABEK area (1997) - Figure 5-3-1". In the JABOTABEK area, outward expansion of urbanization in the suburban area of Jakarta is the basic trend featuring the development strategy to accommodate the large volume of land and housing demand expected in the midst of the economic/industrial development boom in the West Java.

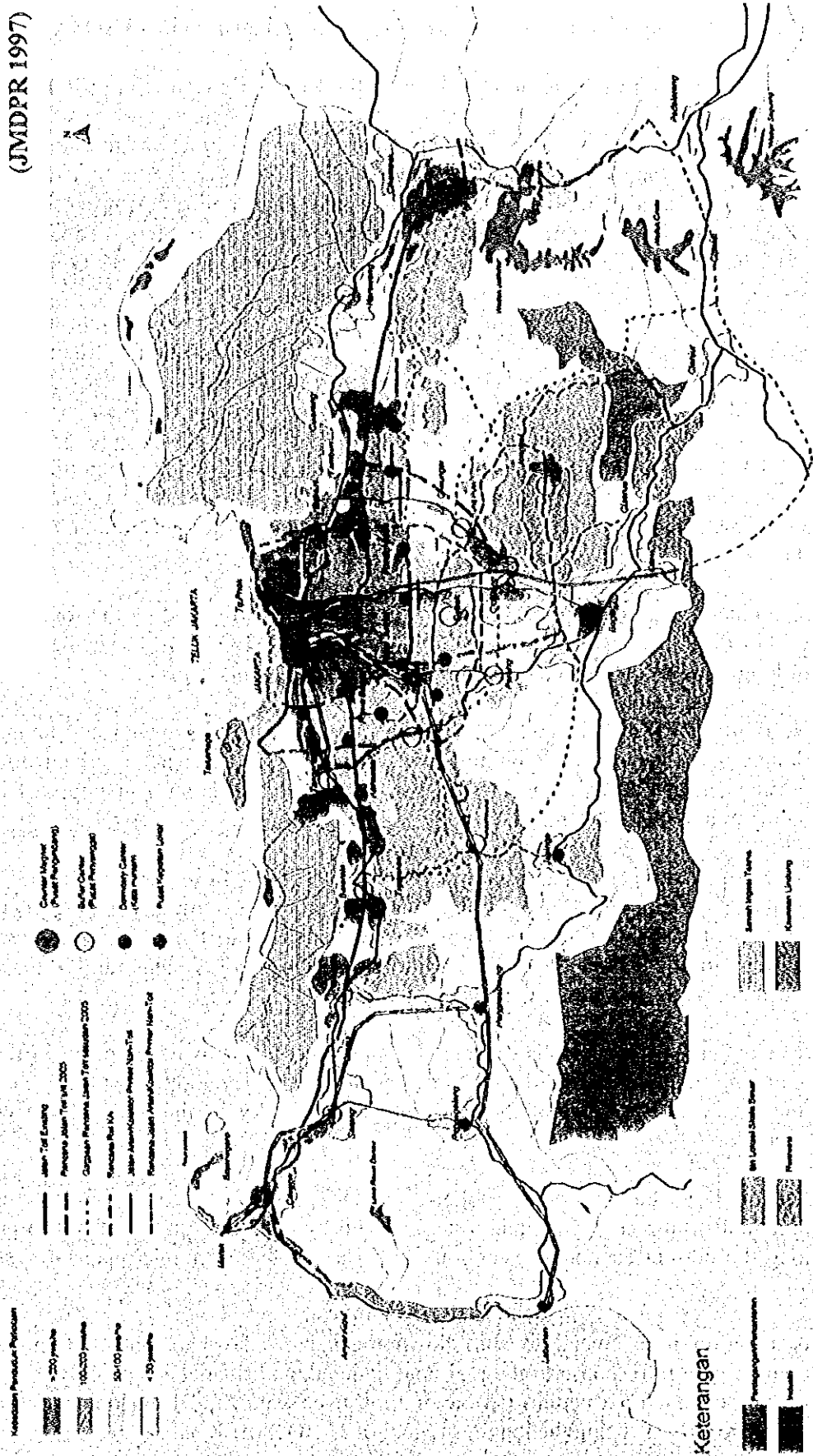
The economic/industrial sharp decline and economic crisis triggered by the foreign currency problems in 1998 dictates the change of urban policy in JABOTABEK, whether in the short-term or long-term taking into consideration the following points:

- a. **Demand side:** It is apparent that the massive demand for land and housing is no longer expected in the coming few years. The over-spread urbanization areas designated in the development strategy and spatial plan is an oversupply of land area compared to the real demand.
- b. **Supply side:** The real-estate developers withdrew from the large-scale land and housing developments due to the financial problems currently facing them. The system of land provision for housing may change from the large-scale development system in the past toward the traditional development system until the real-estate business recovers in full scale.
- c. **Government side:** It is difficult for the government to develop the infrastructure covering the overspread urban area designated in the development strategy plan due to the financial constraint of the government, especially in this time of the economic recession.

Whether or how far the urban policies are to be changed is dependent upon the economic/industrial recovery of Indonesia. At this moment it is quite difficult to predict on how long the current economic recession will last, and the economic/financial systems are normalized.

In this situation it is crucial to slim down the expanded urban land and infrastructure development plan in response to the real land demand, and financial capability of the public and private sectors for a certain period of time even with "the Development Strategy of JABOTABEK (1997)" being the long-term goal of JABOTABEK.

Figure 5-3-1 Development Strategy of JABOTABEK Area (JMDPR 1997)



KONDISI PEMANFAATAN RUANG TAHUN 2005 (PERKIRAAN)

JABOTABEK DAN SEKITARNYA

DEPARTEMEN PEKERJAAN UMUM

5-3-2 Perspective Urban Problems and Necessary Measures

(1) Development Structure Envisioned in Development Strategy of the JABOTABEK Area

Despite the necessity of revising the Development strategy of the JABOTABEK area in response to the current and foreseeable economic situations, it may serve as the guidelines and goals of the JABOTABEK long-term development.

In this respect, the development strategy is also viewed as the long-term development goal for this study.

According to the development strategy, the urban structure for land and housing development for the next generation is anticipated as outlined below:

Based on the development strategy, the future urban areas of JABOTABEK can be roughly classified into 3 zones - high density area, medium density area and new urban development area or areas where large scale real estates including those completed, under construction and still under location permit status were rampant in the early 1990s. This zoning is set forth so as to illustrate the extent of the area to which perspective problems of the urban settlement are presently geographically distributed and will in the future be distributed. The zone area corresponds to the distance from the center of Jakarta. This understandable urbanization is somewhat controlled by the travel time from the center of the metropolitan area.

The prominent characteristics of the urbanization represented by the zoning as listed above are the densification of the built-up area closer to Jakarta, and spread-out of built-up area far from Jakarta.

1. High-density area (Zone up to 20km from the center of Jakarta)

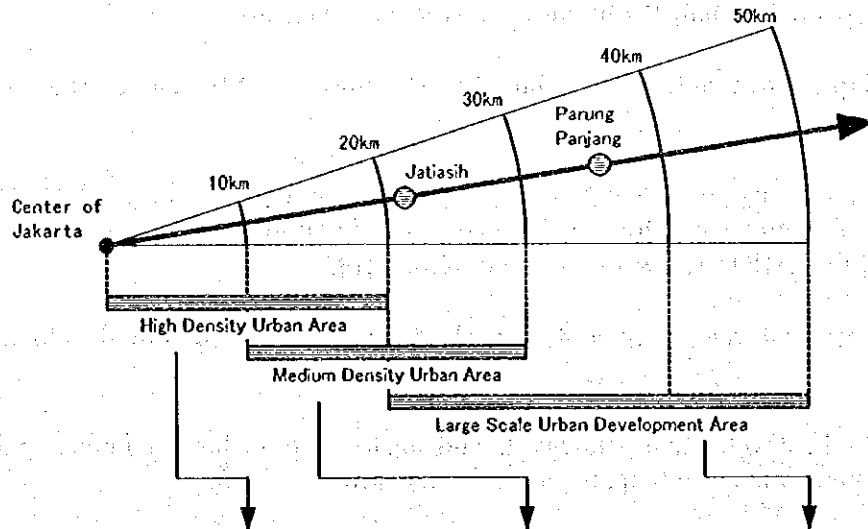
The poor people who cannot afford to commute have no other options, but to live in Kampung slum or squatter close to their working places. Kampung improvement is the continuous challenge of the Indonesian city planning.

2. Medium-density area (Zone between 10 and 30km)

This area is the fronts of continuous urban expansion of the Jakarta built-up zone, featuring the individual land/housing and small scale real estate development with the low quality urban infrastructure. The informal private development is most likely to take place in this area. Despite the serious possible settlement problems in this area, it is quite a significant area close to Jakarta for the settlement expansion for the next generation of the Metropolitan inhabitants.

3. New urban development area (Zone between 20 and 50 km)

This area is characterized with real estate development sprawl, or scatter of land development with a rush of development permits issued. The urban settlement problems are and will be demolition of natural resources and environment which is maintaining the ecological and natural systems vital for the lives of all residents in the Jakarta Metropolitan area and the emerging fragmented and disintegrated urban area. With such problems, this area is important so as to accommodate the massive urban pressure on the Jakarta Metropolitan area.



	High Density Urban Area	Medium Density Urban Area	Large Scale Urban Development Area
Urban Problems	* Urban Slum / Squatter	* Individual Housing Sprawl without Infrastructure (Spill out from Jakarta)	* Real Estate Development Sprawl (A rush of development permits)
Future Development Direction	* Urban Housing and Urban Center	* Jakarta Conurbation Urban Area (Unified with Jakarta Built-up Area)	* Integrated Large Scale New Urban Area (New town area)
Development System	* KIP, Urban Renewal System	* Urban Area Development System (Land Readjustment)	* Integrated Large Scale Urban Development System (KASIBA)
Development Subjects	* Low Cost Housing in the Built-up Area * Effective Utilization of Land	* Unified Built-up Area * Urban Center in the Built-up Area	* Integration of Real Estate (Development for Creating New Town) * Development of Urban Center

Figure 5-3-2 Urban Problems and Challenges by Zone in JABOTABEK

(2) Perspective Urban Problems and Necessary Measures for Urban Area Development

In the urbanization process with the prominent characteristics of densification in the built-up area closer to the center of Jakarta and outward expansion of the built-up area far from the center of Jakarta, the perspective urban problems and measures are defined below and listed in Figure 5-3-2.

a. Measures in High-density urban area: Urban slum/squatter is the most serious problem facing Indonesian city planning. KIP is the counter measure to attack this problem at present, however more effective measures for improvement are in need, such as those of the Urban Renewal system and others.

b. Measures in Medium-density urban area: Individual housing sprawl without adequate infrastructure in the form of spilling out from the Jakarta built-up area will be the result of urbanization without the development control and supporting projects. Land Readjustment is the most effective development system where the urbanization started with a high development potential.

c. Measures in Large-scale urban development sprawl: This existing and worsening urban problem is brought about mainly due to the weakness of the Indonesian city planning system and implementation. An integrated large-scale development system of KASIBA is designed to address this urban problem.

5-3-3 Slimming-down Urban Policy

From the long-term viewpoint of the improvement and strengthening of the Indonesian city planning system, which forms the base of this study on system building of urban development, it may be said that all the measures and systems as listed above should be fully established and ready to be applied to tackle the worsening of urban problems.

The rapid urbanization has brought about many urban problems in the past. But the growth of urbanization has been greatly reduced by the current economic recession. It is apparent that this does not mean the end of urban problems and need for urban development system improvement. Rather the institutionalization of development systems, which usually takes a long time, must steadily proceed in the view of preventing the recurrence of the past urban problems when the economic rebound of Indonesia accelerates the urbanization in the future.

In this respect the urban development/implementation system must be proposed in the long term. However the proposed systems must be also designed to be responsive and effective to the urban development in short- and medium-terms when urbanization is not in full scale under the economic recession.

(1) Shift of Urbanization Pattern

The urbanization pattern will shift from the development structure envisioned in the development strategy of the JABOTABEK area (1997) as follows.

1. Due to the withdrawal of the developers from the large scale development market, scarce financial resources of private and public sectors, and less massive demand for land housing, the centers of urbanization will shift from the broadly spread large scale real estate development in the suburban area (30-50km from the center of Jakarta) toward urbanization within and close to the area where the existing infrastructure is available and less-capital investment is needed.
2. In this context urbanization in the medium-density area (10-30km expansion of continuous built-up area of Jakarta) and high-density urban area (-20km more densification) will be relatively intensified. This can be further explained by the following:
 - Because the economic recession tends to drive the immigrants from the rural areas, into the slum areas or create new slum areas, resulting in the densification of built-up areas.
 - Because self-built housing in the 10-30km area where the existing infrastructure, for instance roads are available, is the economic way to obtain houses, which can be built and expanded in accordance with the financial affordability by stage. The demand for self-built housing land will increase, especially when the large-scale developments fail to absorb the housing demand and are not allowed to sell land without houses.

(2) Urban Restructuring in Response to the Shift of Urbanization Pattern

Urban restructuring for JABOTABEK, especially for the short- to medium-term will be of great significance in response to the shift of urbanization pattern as discussed above.

The concentrated and compact development for slimming down the urban areas is more needed especially in this time of economic recession when it is crucial to increase the efficiency of the infrastructure investment using the scarce financing resources of the government. The potential areas for development in response to the shift of the urbanization pattern as discussed above are, among others:

1. The areas in the vicinity of DKI Jakarta and accessible to the center of Jakarta within a reasonable commuting time.
2. The areas along the transport corridors (Toll road and railway) (Cheaper transport cost, land price, and direct access to the center of Jakarta).

It is recommendable to contain and gear the urbanization toward those areas as listed above, leading to the efficient urban settlement.

5-3-4 Roles of KASIBA and Land Readjustment

KASIBA and Land Consolidation are expected to assume great roles in the urban restructuring as discussed above.

(1) KASIBA - Parung Panjang

KASIBA is instrumental for controlling urban development (by prohibiting the large-scale urban development outside the KASIBA areas), as well as implementing urban development projects (by constructing infrastructure).

KASIBA, as an urban controlling measure, is to contain and concentrate the urbanization within the certain designated area along the transport corridor, leading to the urban restructuring of JABOTABEK as defined above. The urban restructuring plan should include the staged plan of the urbanization area. The KASIBA area shall be designated on the first stage development area (for 5 years).

Parung Panjang – the case study area for KASIBA is located just along the railway. The case study shows a model urban development concentrated along the railway as a part of the urban restructuring of JABOTABEK.

(2) Land Readjustment - Jatiasih

Land readjustment is to create a unified built-up area including the existing real estates, villages and others. In this regard one of the suitable areas, to which L/R is applied, is the area in the vicinity of Jakarta, where urbanization has already started partially with high development potentials. Therefore L/R is quite instrumental for developing the concentrated urban areas in the vicinity of Jakarta, leading to the urban restructuring of JABOTABEK as stated above. In fact it is almost impossible to develop semi-urbanized areas on the fringe of cities into one unified built-up area without the application of L/R.

One of the major fields of the housing market, in the vicinity of Jakarta, is for those who wish to buy land for self-build houses as stated before. L/C is to provide land so as to fit that demand. Jatiasih—the case study area for L/C—is on the fringe of Jakarta where such land demand, as the one for self-build housing, is expected to be quite high. On such premises Jatiasih—Land Readjustment is the best combination for the case study.

Chapter 6 Case Study of KASIBA in Parung Panjang

6-1 Basic Feature of Parung Panjang District

6-1-1 Present Conditions of Parung Panjang District

(1) General

The site is located to the south-west of Jakarta in a potentially strategic location along the Jakarta - Serpong - Rangkasbitung railway and at the junction of proposed major regional arterial roads, including the Metropolitan Ring Road which will serve as an outer-orbital route for the BOTABEK area (planned for the long-term). The Ministry of Public Works intends that the area will form the country's second KASIBA (if we define Driyorejo Surabaya as the first KASIBA project), and that it will encompass an area of 1,000 hectares if it includes the surrounding Location Permission developments. The area may also be classified as a "Formalized Development" or "Public Private Participation Project" as it had its origin in a strategic land purchase by Perum Perumnas (the state owned housing company) rather than being planned as a major urban spatial initiative.

Eight (8) Location Permissions have now been issued in the Master Plan area out of an overall total of fourteen (14) in Kecamatan Parung Panjang. An initial problem encountered was the fact that one of the permits overlapped with the Perumnas site, which had already been allocated. Totally over 100ha of location permits had actually been issued to Perumnas, they intended to extend land in the JICA's Master Plan area. Under an agreement of confirmation between Perumnas and the Study Team, it was agreed that the area would be developed jointly.

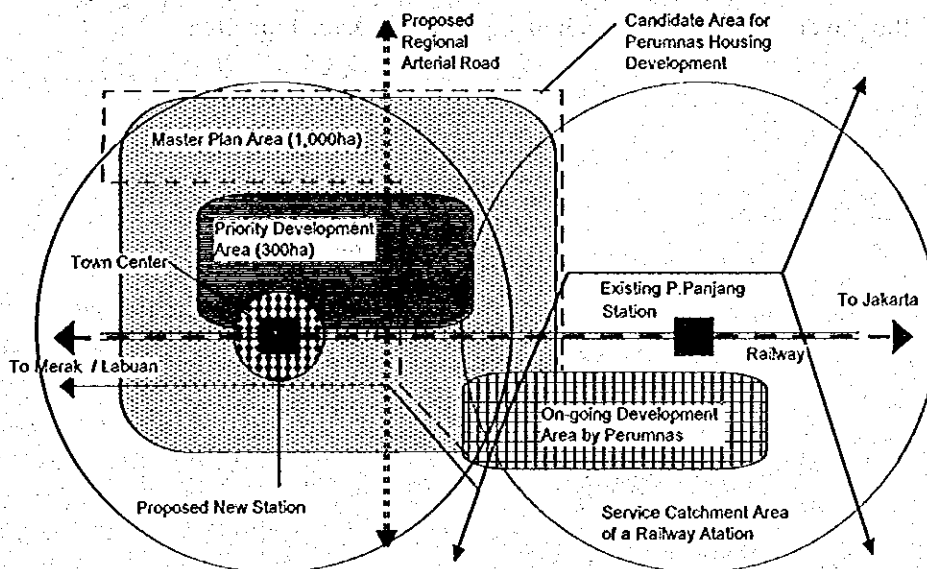


Figure 6-1-1 Proposed Mater Plan Area and Priority Development Area

(2) Physical Environment

1) Administration

Parung Panjang District (Kecamatan) is one jurisdiction within Bogor Regency (Kabupaten). The area of Parung Panjang district is about 6,290 hectares, which consists of 11 sub-districts (Desa), 50 community units (RW), and 197 small community units (RT). The Master Plan area (1,000 ha) consists of 4 sub-districts, 15 community units and 46 small community units.

2) Topography

The topography of the Master Plan area is that of a gently sloping plain. The range of altitude is 27.6 to 72.5 meters. The higher plain area is located in the southeast corner and lowest area is at the northwest edge.

3) Land Use

In general, the existing land use of the Master Plan area shows a typical pattern differing with the suburbs of the Jakarta Metropolitan area. The study area is dominated by rural characteristics such as agriculture field including paddy field and mixed crop plantation, utilizing almost 77.6% (842.66 ha), while 16.9% (184.0 ha) is for rural settlement and 4.8% (51.92 ha) for chicken farms and industry. The 0.7% (7.44 ha) remaining is vacant or occupied by cemetery.

The existing villages are scattered along the village road and small footpaths, meanwhile newly developed and residential estates under construction are located along the main road at Jl. Raya Parung Panjang and Jl. K.H. Salimah mainly in Desa Lumpang or on strategic land, i.e. near railway station. The Perumnas housing estate is located along the eastern boundary of the study area. The INKOPAD Estate and P.T. Awab Saka Estraga are the developing residential estates mainly for the government employees housing in the Master Plan area.

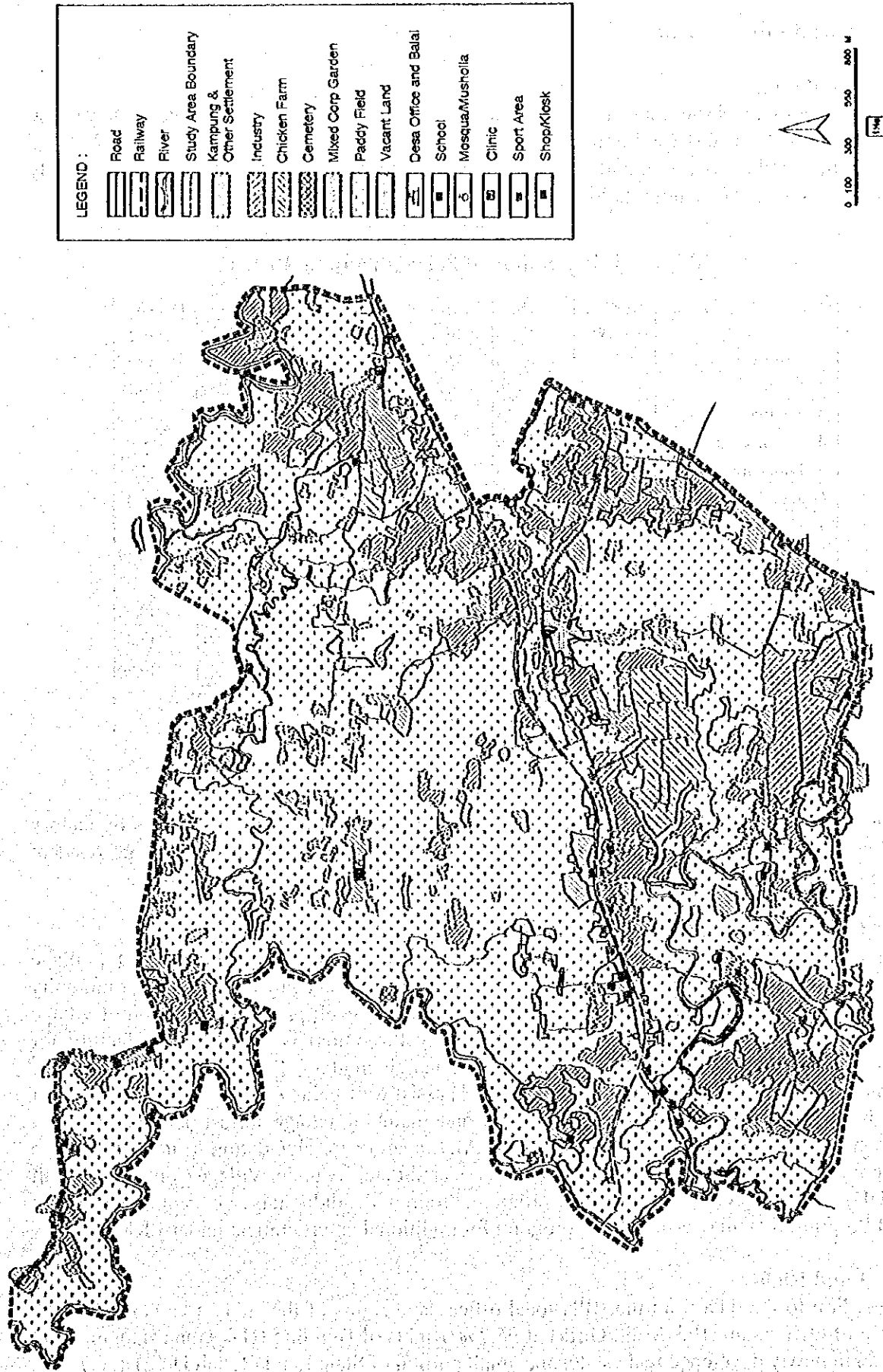


Figure 6-1-2 Existing Land Use (1998)

(3) Social Environment

1) Population

The population of Master Plan area in 1998 was about 13,460 persons. The range density of the population by RT is 6 (Desa Lumpang, RW 2, RT 3) to 30 person/ha (Desa Cibunar, RW 3, RT 12). The number of households in study area in 1998 was about 3,000 households. By assumption the average household size in the study area is 4.2 persons.

Table 6-1-1 Population of Parung Panjang District

Name of Sub-district (Desa)	Number of RW	Number of RT	Area (ha)	Population	Number of Household	Density (p/ha)
1 Parung Panjang	5	22	292.000	8,679	1,596	29.72
2 Cibunar	3	16	372.645	6,000	1,287	16.10
3 Jagabita	4	13	344.155	5,471	925	15.90
4 Gintung Cilejet	4	19	601.580	5,460	1,840	9.08
5 Lumpang	7	15	795.045	8,786	1,168	11.05
6 Jagabaya	4	20	822.024	5,302	1,228	6.45
7 Gorowong	3	15	873.019	6,296	1,375	7.21
8 Pingku	5	20	701.955	5,746	979	8.19
9 Dago	7	21	628.050	4,760	1,061	7.58
10 Cikuda	4	16	527.190	5,629	991	10.68
11 Kabasiran	4	20	331.760	5,729	991	17.27
Total	50	197	6,289.423	67,858	13,441	10.79
Note :			Male	34,142		
			Female	33,716		

Source: Parung Panjang District Office, 1997

2) Economic Activities

Due to the rural characteristics, most people work as farmers, followed in numbers by factory workers, chicken breeders, stone miners and wood workers. The range of average resident income is about Rp.120,000 to Rp.500,000 per month.

3) Community Activities

Community activities in every village administration are all executed by LMD (Village Community Institution), and conducted by LKMD (Village Institution of Community Endurance). LKMD is a means of deliberation at village level; place of discussion of village problems and programs. PKK (Family Prosperity Programs) is a community facility for increasing housewives awareness in household economic matters. Program Gotong Royong is community self-help program under LKMD to 1) assist well-being of households in matters of food and other basic needs and 2) to build and maintain village infrastructure. Program Kesehatan is a health care program under LKMD; health care elucidation to increase village community knowledge. Program Perkreditan is a credit facility under Village Cooperation Unit (KUD). Program Agama is a religious program, Program Pendidikan is an educational program and Program Kasenian is an artistic program for traditional entertainment under LKMD.

4) Land Right

According to the data from the BPN local office, land rights of the study area consist of the Right of Ownership (Hak Milik/Girik) at 96.7%, Rights of Building (Hak Guna Bangunan) at 2.6 % in newly developed real estate, and small portion of State Land (Tanah Desa) at 0.7 %.

5) Land Value

The land value depends on jurisdiction of road and land-use type. The range of land value in the study area is Rp.3,000/m² in agriculture land to 75,000 in residential land.

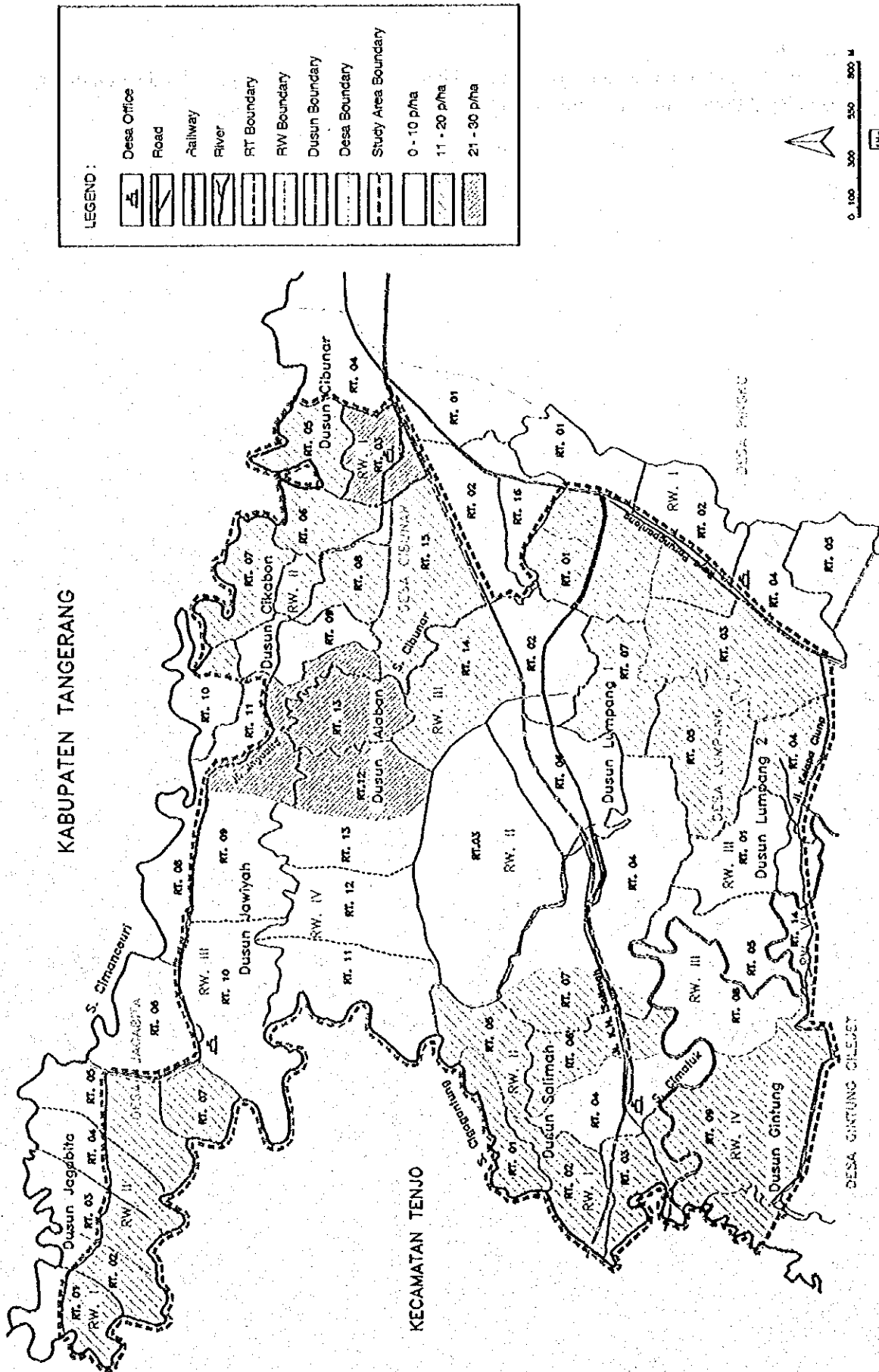


Figure 6-1-3 Population Density by RW

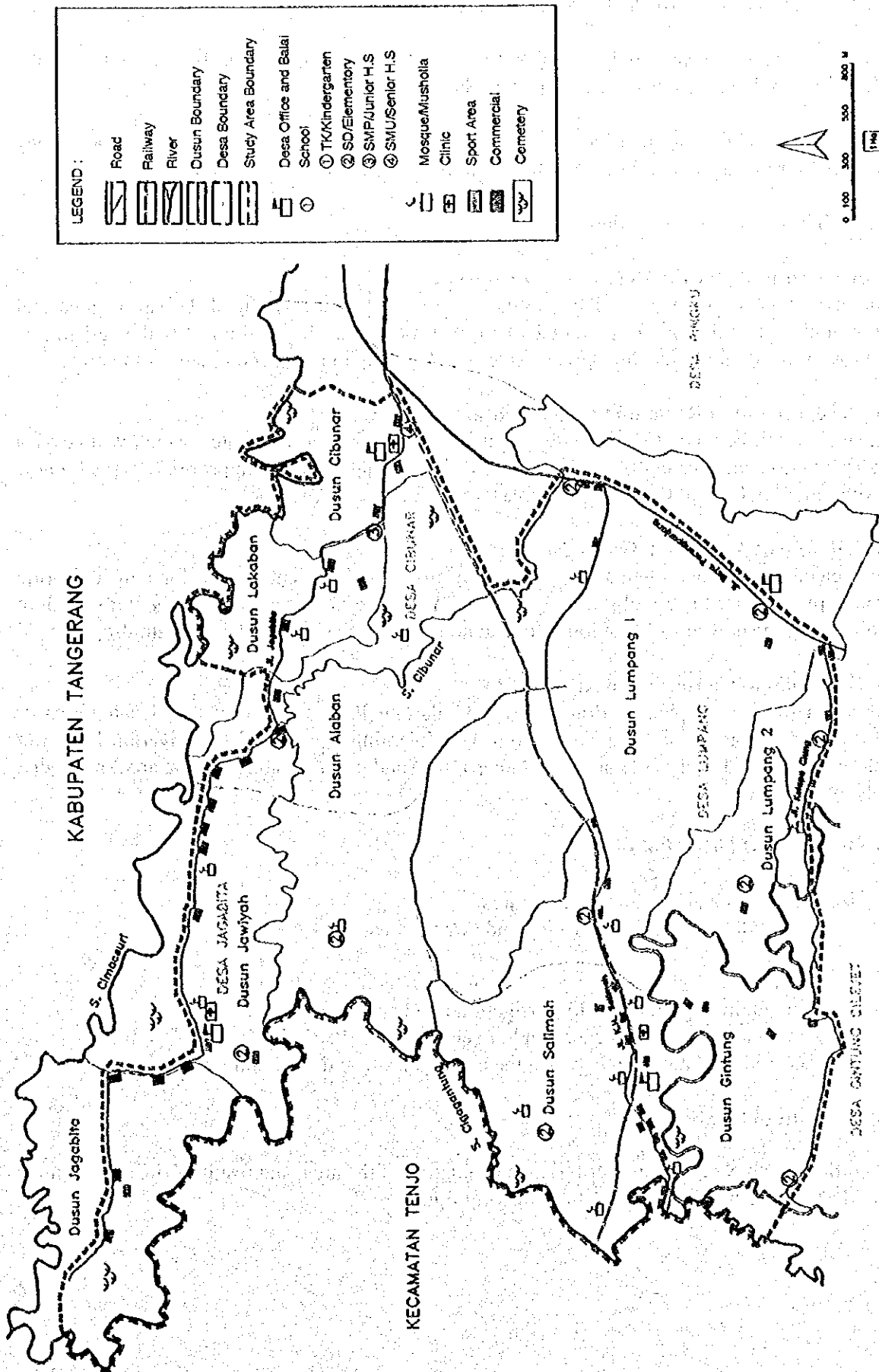


Figure 6-1-4 Existing Public Facility

6-1-2 Site Selection for the KASIBA Master Plan

The location for the case study area (total area within 1,000 ha) should be selected from the whole Parung Panjang District (total area 6,289 ha).

Major criteria and some considering for the site selection are described below, and it may satisfied most of the items the area will be suitable for the Master Plan area.

(1) Criteria for Site Selection

1) Area Suitable for the Development Concept

The development of Parung Panjang is to built the “Rail Oriented Urban Center and Community” to fully utilize potential of railway network. In the future, if the rail line is improved to a double-track line, great strides can be made in the development of the area.

2) Development of Regional Service Center

Expansion will be made for future development of regional service center, which will cover a wider function and area in the region. Selected sites should consist of appropriate areas for new development outside of the urbanized areas.

3) Catchment Area from Traffic Node

The selected area has potential for integrating urban and settlement development centering around the proposed new rail station. The catchment area is thus assumed to be within a 3km radius from the new railway station as traffic node by bus feeders for daily commuting.

4) Exclusion of Conservation Area

Based on the spatial plan of Bogor Regency, Parung Panjang District has 3 categories of conservation areas, those being Agriculture Use (planting annually, dry cultivation land, wet cultivation land), Rural Settlement and Other Use (Sand pit area, stone mining area) areas that must be excluded.

5) Other Considering Points

Topographical and geographical features

- exclude steep hill, deep valley and swamp area

Environment

- maintain important existing irrigation pond and channel
- maintain precious greenery and/or scenery
- consider relationship between the candidate site and surrounding area

(2) Result of Site Selection

According to above mentioned criteria, an evaluation of the area, and result of site selection for the Master Plan area is shown in the following figure.

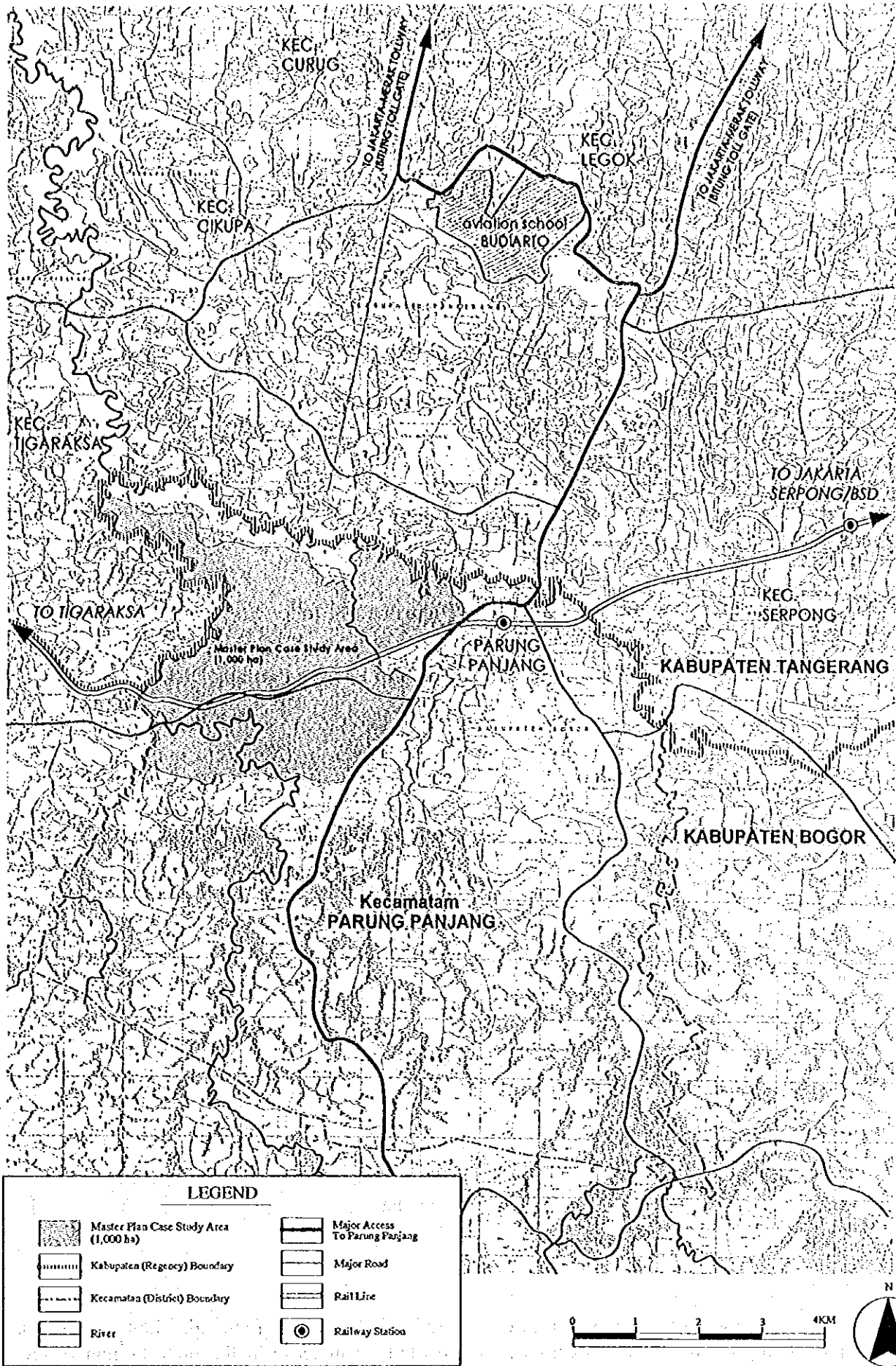


Figure 6-1-5 Proposed Site for the Master Plan in Parung Panjang

6-2 KASIBA Master Plan (1,000 ha)

6-2-1 Regional Development Structure

(1) Development Plan and Program

In the future, the expansion of Jakarta urban area will be closer to the BOTABEK area, especially the late developing area of the north-west of Bogor Regency in terms of insufficient regional road connections to the capital city. But, recently, a huge scale of new development came to the surrounding area of the Parung Panjang District. For instance, many industrial and housing estates were located in the Tangerang Regency, especially Bumi Serpong Damai is biggest estate with 6,000ha of development area.

All of these developments will be concentrated beyond the area of Tangerang Regency. More over, if new highways or improving railway networks are created, this will boost the new development in the Parung Panjang District.

On the basis of the tendency consideration of spatial development, the functions of Parung Panjang area are increased to fulfill the New Satellite City of the National Capital as an employer's housing town or new commercial and industrial town.

The developments permitted by the local government are as follows:

Table 6-2-1 Permitted Development in Parung Panjang District

Location (Name of Desa)	Area (ha)	Applicant (Name of Company)
1 Parung Panjang, Cibunar Lumpang, Kabasiran	Total 1,012	Perum Perumnas
2 Parung Panjang	25	Yayasan Korpri
3 Kabasiran	100	PT. Masaka Kresi
4 Kabasiran	100	PT. Pertiwi Putra Persada
5 Pingku	200	PT. Chandro Mulya
6 Pingku	150	PT. Banda Wibawa Asih
7 Gintung Cilejet	100	PT. Aman Tata Cipta
8 Gintung Cilejet	224	PT. Abdi Nusa Ekapersada
9 Gintung Cilejet	50	PT. Awab Saka Estraga
10 Cikuda	100	PT. Chandra Wibawa Asri
11 Dago	250	PT. Riska Surya Piranti
12 Jagabita	200	PT. Bahana Selaksa Cipta
13 Lumpang	205	PT. Cahaya Martaka Gemilang
14 Jagabaya, Gorowong	150	PT. Citra Graha Reksa Abadi
Total	2,866 ha	

Source : Parung Panjang District Office

Accordingly, the above permission shows continuing levels of land required in housing sectors, although the figure shows a decline in Jakarta but an increase in the metropolitan fringe,

reflecting population growth trends in these parts of the region. And metropolitan fringe development patterns have reinforced the commuting trend, with many of the middle and upper income households now living in the new residential development traveling into Jakarta every day to work. As center and employment nodes develop in Parung Panjang, it is also likely that there will be a growth in internal commuting within the region. This pattern is leading to some possibility that the New Town or Satellite City may emerge as a district urban form in JABOTABEK.

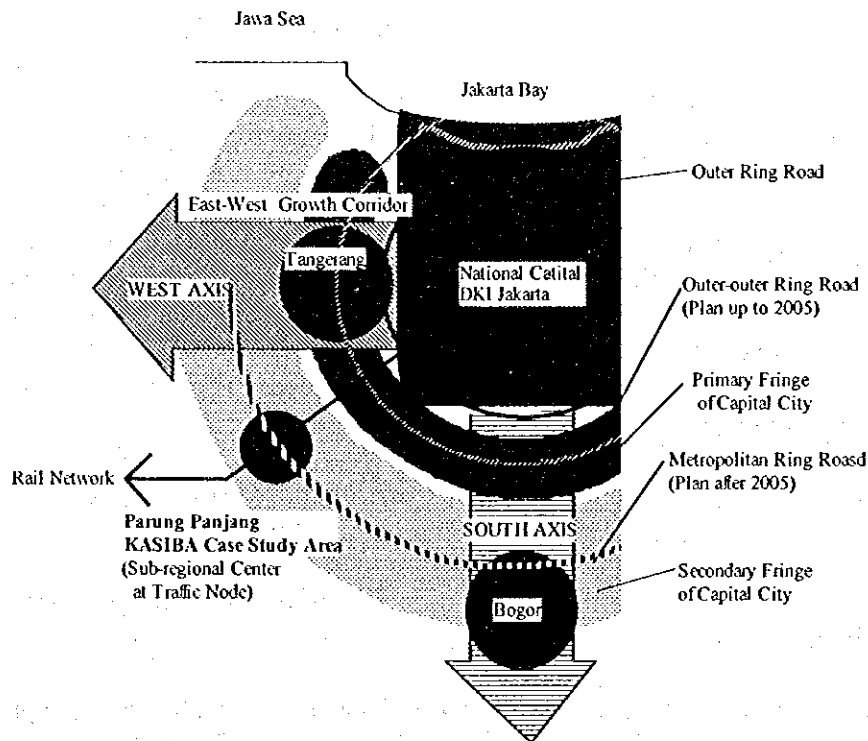


Figure 6-2-1 Parung Panjang as New Regional Sub-center

(2) Land and Housing Demand

The JABOTABEK region has a population of some 21.267 million people (Year 1995 data source by the BPS Jawa Barat), and this is forecast to increase to around 30 million by the year 2010 forecast by the JMDPR (Jabotabek Metropolitan Development Plan Review). According to this forecast, Jakarta has a population of around 8.2 million and should reach 11.5 million by 2010, on the other hand, the BOTABEK's population level is forecast to increase from 8.9 million to 18.5 million people. This is over twice than existing population.

Particularly, residential developments are tending to open up new areas of the region especially on the metropolitan fringe as Parung Panjang.

For the period of 2000, the following projections are provided as a guide to additional land required in BOTABEK by the JMDPR.

- Housing and Industry : 5,480 ha
- Office : 190 ha (including 160 ha in the formal sector)
- Commercial : 200 ha (including 160 ha in shopping center)

Beyond the year 2000, the forecast shows continuing levels of land required in these key sectors, although the rate of increase shows a decline in Jakarta but an increase in BOTABEK, reflecting population growth trends in these parts of the region also in terms of the land price. These are broad estimates of land required, and need to be reviewed and as new trends emerge in the property development sector in terms of development types and location preferences.

6-2-2 Existing Conditions and Site Evaluation

There are 2 lanes asphalt-paved: a primary artery road with insufficient maintenance and a single truck railway system, which are connected to neighboring regions. This artery road is located in a good location, but it needs to be developed and improved, also the road should be wider to be able to accommodate an increasing traffic flow anticipated in the area. Beside that, the roads which are connections to the inter-villages are still in the form of stone roads.

The road plan in Parung Panjang area follows the current rules and standards basically. The main road will be connected to the regional road (key point is reducing access time connect to express way), the community road will be connected to the inter-regional road. That hierarchy of roads can be developed to encourage a smooth traffic flow, which is suitable with the new urban development. Moreover, if a new Metropolitan Ring Road is constructed and passes by the area, it will give more potential to new urban development.

The railway system (Jakarta - Rangkasbitung) is one of the ways to support this area and opportunity for future development, if properly improved in future.

A bad condition of the storm water drainage under the poor existing drainage system has not been sufficiently improved.

A system of the water supply in general is still taken from shallow wells. And the provision of the public facility in terms of quality as well as quantity has not sufficient yet been made except in the district center of Parung Panjang District.

Meanwhile, the agriculture sector is now a minor sector in JABOTABEK's economy (0.9 % of Jakarta's GDP and 12 % of BOTABEK's in 1993), and this is in parts due to the rapid urbanization of remaining parts of Jakarta's fringe with development now moving well into the adjacent fringe areas of Bogor.

Accordingly, the General Spatial Development Plan of Parung Panjang District will be planned to be developed as the settlement and urban function at the north and west areas into 65% of the District. And other 35% of land are kept for agriculture, rural settlement etc. as reserved land. This spatial plan (Draft) was designated by the Ministry of Public Works together with Local Government of BAPPEDA in Bogor Regency. The said spatial plan is attached in following page.

In Parung Panjang, there are 7 categories of land use in 2 major categories, such as Agriculture Cultivation Area and Non-agriculture Area. In the case of the "agriculture cultivation area (planting annually)" it is necessary to apply for a BCR (Building Coverage Ratio) as 5% with minimum ratio per lot. And the minimum lot size is 1,000 square meters. For other areas with land use of "urban settlement" the BCR has to be 35 to 60% of the area per lot of 60 to 300 square meters.

The "Rural settlement area" for the existing local housing is being protected from new housing development. Therefore KASIBA development cannot be located within this area. If a change of policy in Spatial Plan has to be made, it must be through the New Regulation of the Local Government.

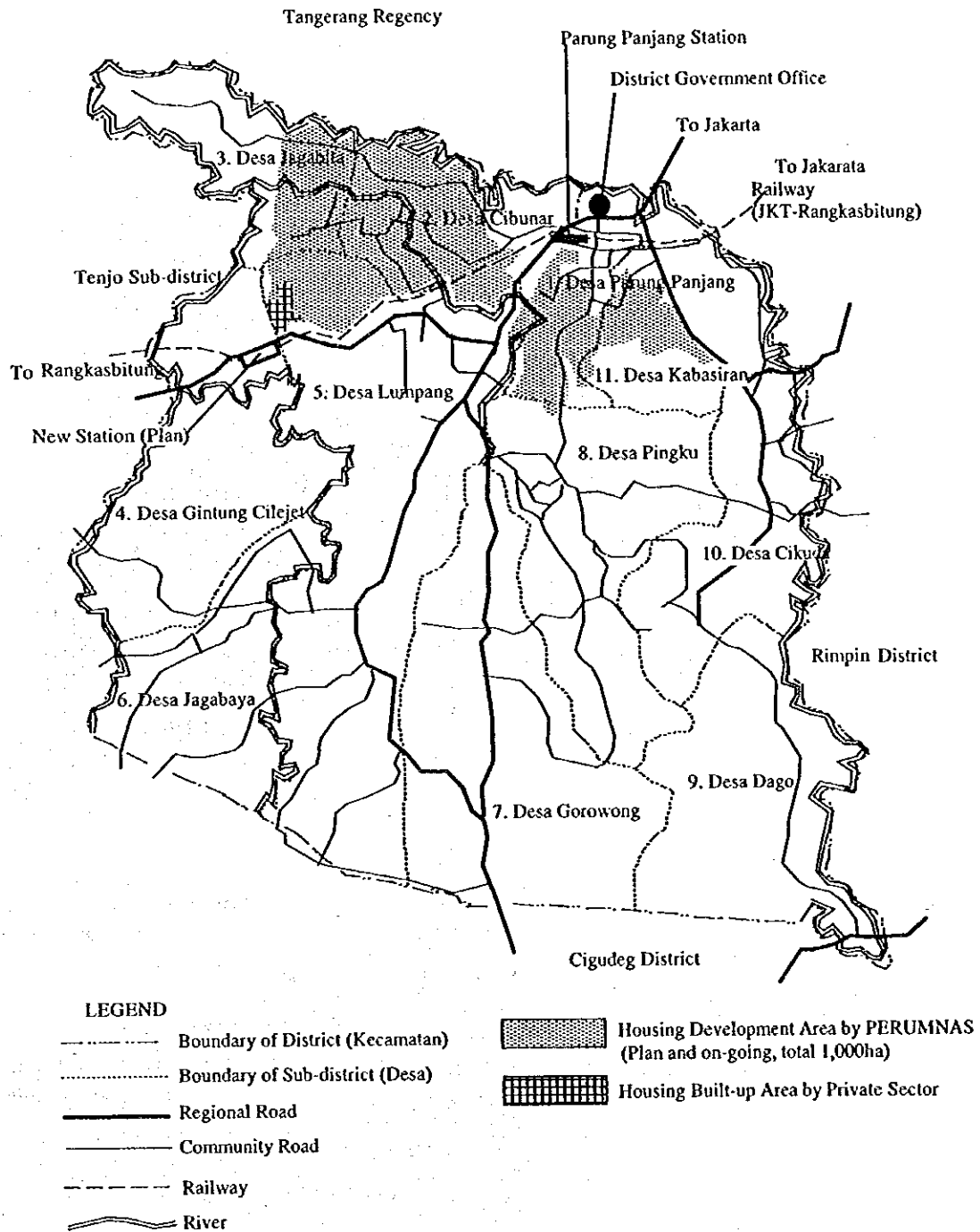


Figure 6-2-2 Urban Structure of Parung Panjang District
(Source: Prumnas and Study Team)

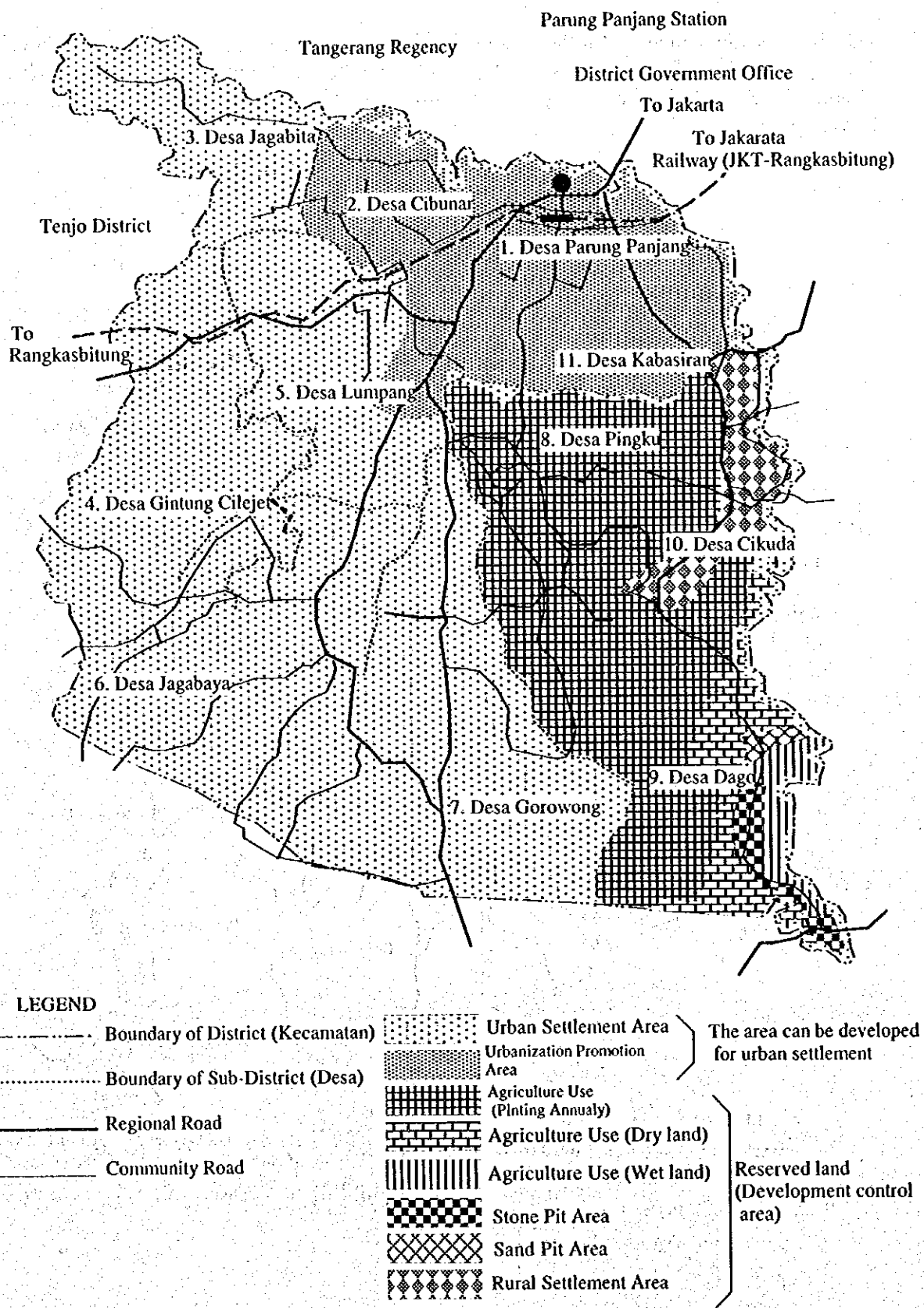


Figure 6-2-3 Land Use Control Plan (Spatial Plan) of Parung Panjang District
 (Source: Spatial Plan / BAPPEDA, Bogor Regency Level II / Issued on 24 Mar, 1995)