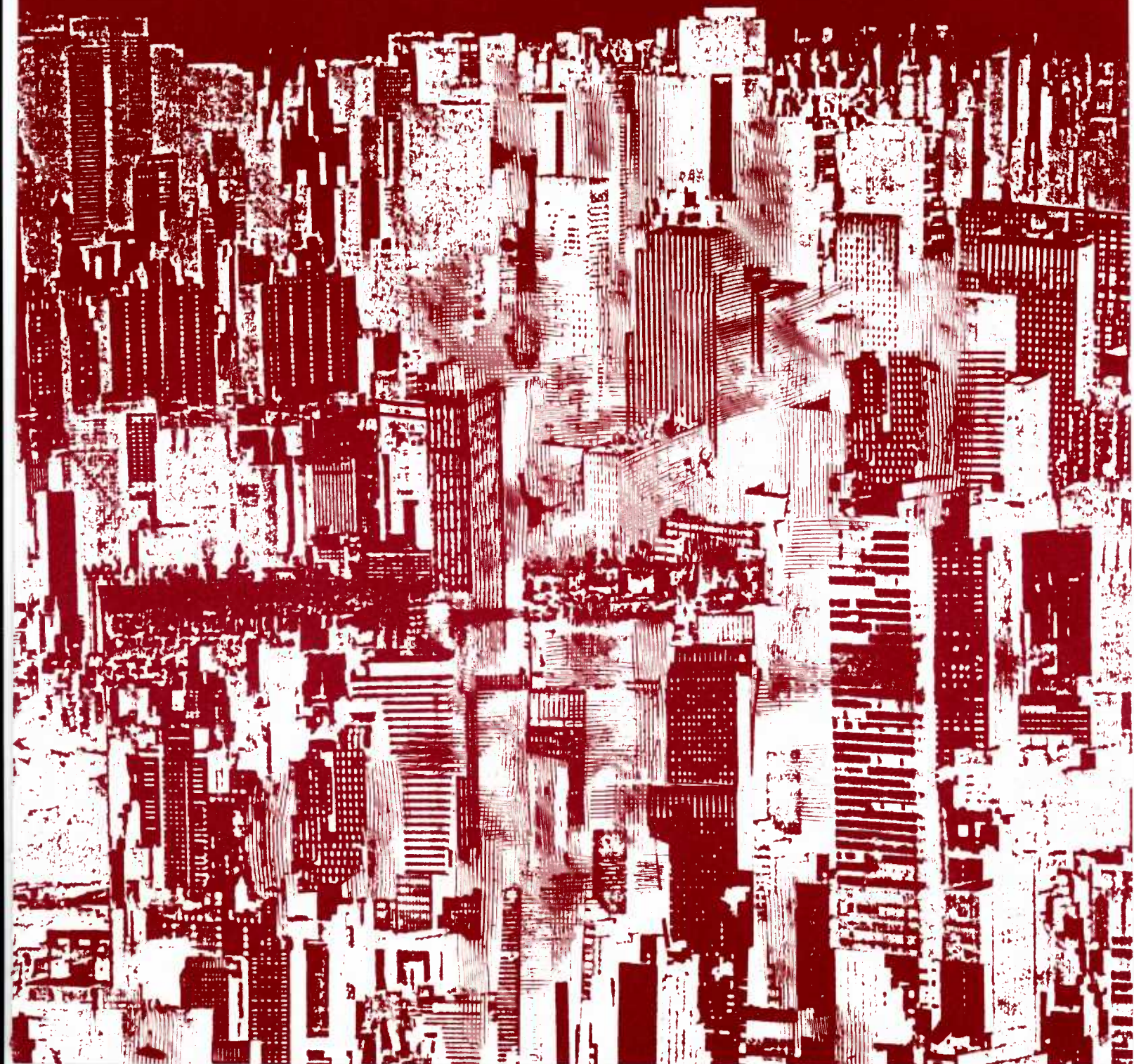




United Nations

Population Growth and Policies in Mega-Cities

JAKARTA



Department of International Economic and Social Affairs

POPULATION POLICY PAPER NO. 18

Population Growth and Policies in Mega-Cities

JAKARTA



United Nations
New York, 1989

Note

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The terms "country" and "area" as used in the text of this report also refer, as appropriate, to territories, cities or areas.

Papers have been edited and consolidated in accordance with United Nations practice and requirements.

ST/ESA/SER.R/86

Copyright © United Nations 1989
All rights reserved
Manufactured in the United States of America

PREFACE

This publication is one in a series of studies being prepared by the Population Division of the Department of International Economic and Social Affairs of the United Nations Secretariat which focus on the population policies and plans of some mega-cities in developing countries, cities that are expected to have populations of at least 8 million inhabitants by the year 2000.

The object of the series is to examine the formulation, implementation and evaluation of the population policies of mega-cities from a broad perspective, emphasizing the reciprocal links between population and development in the spirit of the World Population Plan of Action. ^{1/} The development of population policies to improve the standard of living and the quality of life of the inhabitants of the world's largest cities is a highly complex and multifaceted activity. It involves, for example, not only the analysis of migration trends, the preparation of population projections, and the formulation of population distribution strategies but also the provision of cost-effective urban infrastructure (e.g., housing, water, sewerage, transportation, and health and educational facilities), the monitoring and creation of employment, the assembly of urban land for development projects, the improvement of municipal revenue-raising mechanisms and the establishment of effective institutional arrangements for planning and managing urban growth.

Each of the technical papers in this series follows a common format consisting of five major sections. Section I provides basic information on demographic trends and reviews the use of demographic data in planning for rapidly growing urban populations. Section II presents background information on the city's economic base, the spatial structure of the metropolitan region and the sectoral and spatial distribution of jobs, all of which are crucial to a proper understanding

^{1/} See Report of the United Nations World Population Conference, 1974, Bucharest, 19-30 August 1974 (United Nations publication, Sales No. E.75.XIII.3), chap. I, and Report of the International Conference on Population, 1984, Mexico City, 6-14 August 1984 (United Nations publication, Sales No. E.84.XIII.8 and Corr. 1 and 3), chap. I, sect. B.

of how population distribution strategies operate. Section III reviews early decentralization strategies and how they were evaluated and revised by local planners and then examines current population distribution strategies for the metropolitan region. Section IV deals with a number of key issues and sectors - the labour market, urban land, housing, water supply and so on - from the perspective of planning for rapidly growing urban populations and managing urban growth. Wherever possible, attention is given in that section to the extent to which various sectoral policies may have served as implicit spatial policies that reinforced or perhaps counteracted explicit spatial goals. Finally, section V examines the sectoral distribution of public investment and how that investment has influenced the achievement of spatial goals, how individual cities have generated revenue for municipal projects, and what types of institutional arrangements have been established to plan for and manage urban growth.

To date, reports issued in the Population Growth and Policies in Mega-Cities series are:

CALCUTTA	(ST/ESA/SER.R/61)
SEOUL	(ST/ESA/SER.R/64)
METRO MANILA	(ST/ESA/SER.R/65)
BOMBAY	(ST/ESA/SER.R/67)
DELHI	(ST/ESA/SER.R/68)
DHAKA	(ST/ESA/SER.R/69)
BANGKOK	(ST/ESA/SER.R/72)
MADRAS	(ST/ESA/SER.R/75)
KARACHI	(ST/ESA/SER.R/77)

CONTENTS

	<u>Page</u>
Preface	iii
Explanatory notes/Abbreviations	vii
Introduction	1
 <u>Chapter</u>	
I. DEMOGRAPHIC CHARACTERISTICS	3
A. Population growth	3
B. Migration	4
C. Population projections	6
II. THE ECONOMY	7
A. Historical background and development of the city's economic base	7
B. Recent performance of the economy	8
C. Spatial structure of the metropolitan region	9
D. Sectoral and spatial distribution of jobs	11
E. The city in the region	13
III. DECENTRALIZATION AND LOCATION	17
A. The evolution of spatial strategies	17
B. Current spatial strategies	19
IV. ISSUES AND SECTORS	23
A. The labour market	23
B. Urban land	24
C. Housing	27
D. Water supply and environmental problems	30
E. Power	32
F. Health and education	32
G. Transport	34
V. RESOURCES AND MANAGEMENT	37
A. Public investment	37
B. Resource generation	37
C. The institutional context	38
CONCLUSION	40
REFERENCES AND SELECTED SOURCES	44

List of tables

	<u>Page</u>
1. Projected population, average annual rate of growth and density of DKI Jakarta, 1985-2005	6
2. Total number employed, by sector, in 1971 and 1981 and average intercensal growth rate	12
3. Number of urban areas in Indonesia by size class, 1980 ..	15

List of figures

	<u>Page</u>
I. Jakarta Urban Area, 1985	10
II. Outline Structure Plan for Metropolitan Jakarta, 1993 ...	14

EXPLANATORY NOTES/ABBREVIATIONS

Reference to "dollars" (\$) indicates United States dollars, unless otherwise stated.

The term "billion" signifies a thousand million.

Annual rates of growth or change refer to annual compound rates, unless otherwise stated.

A hyphen between years (e.g., 1984-1985) indicates the full period involved, including the beginning and end years; a slash (e.g., 1984/85) indicates a financial year, school year or crop year.

A point (.) is used to indicate decimals.

The following symbols have been used in the tables:

Two dots (..) indicate that data are not available or are not separately reported.

A dash (--) indicates that the amount is nil or negligible.

A hyphen (-) indicates that the item is not applicable.

A minus sign (-) before a number indicates a deficit or decrease, except as indicated.

Details and percentages in tables do not necessarily add to totals because of rounding.

The following abbreviations have been used:

RAPPEDA	-	Regional Development Planning Board
BKKBN	-	National Family Planning Co-ordination Board
BOTABEK	-	the administrations of BOgor, TAngerang and BEKasi
DKI	-	Special Capital Area
GLD	-	Guided Land Development
GRDP	-	Gross Regional Domestic Product
JABOTABEK	-	the administrations of JAKarta plus BOTABEK - the Jakarta metropolitan area
NUDS	-	National Urban Development Strategy
KIP	-	Kampung Improvement Programme
PERUMNAS	-	National Housing Authority
REPELITA	-	Five Year Development Plan
SILD	-	Staged Industrial Land Development

INTRODUCTION

A port town built up by the Dutch in the seventeenth century and planned to accommodate 600,000 inhabitants, Jakarta is the world's seventeenth largest city, with a population of about 7.5 million inhabitants in 1985. By the end of the century, it is expected to reach more than 13 million, becoming the world's eleventh largest city (United Nations, 1987).

Jakarta has grown very rapidly over the past several decades and is currently growing by about 4 per cent per annum. Although the city has sprawled over a wide geographical area, its population has nevertheless doubled in density every 20 years. Moreover, circular and seasonal migration from surrounding areas have become increasingly important, making conventional measurement of the urbanization process somewhat irrelevant. Indeed, although there has been no serious attempt to measure these new types of population mobility, it is widely acknowledged that Jakarta's population is larger and its growth rate faster than official population figures indicate.

In spite of considerable efforts by the Government to improve urban services in DKI (Special Capital Area) Jakarta, deficits remain large. Because of widespread speculation in the urban land market, there is an acute shortage of affordable land. Public housing has been unaffordable by the bottom half of Jakarta's population, and the great majority of Jakarta households continue to house themselves.

Although considerable progress has been made in providing water to Indonesia's urban areas, less than one quarter of Jakarta's population currently has access to clean piped water. A large proportion of the population in the city's poorer areas purchase water from vendors at inflated costs. Moreover, the water supply situation is likely to become critical in the future because of sea water intrusion, which has created a zone of salinated groundwater reaching the central city (Douglass, 1989). In addition, the city lacks a water-borne sewerage system, and uncollected waste has traditionally been dumped into the canals and drains, which serve as the principal sewers. Over the past decade, the number of private motor vehicles in Jakarta has increased by 15 per cent per annum, and traffic congestion is now a major problem.

On the positive side, whereas Indonesia traditionally had somewhat lower health standards than countries at a similar level of development, health care services in Jakarta have been receiving increasing emphasis. Family planning programmes have been also given high priority and have exceeded target coverage, contributing to a significant decline in fertility. Moreover, investment in education has been impressive over the past decade, and opportunities for primary education are now virtually universal.

In regard to other policy responses, the Government has attempted to wrestle with the extreme shortage of reasonably priced land by guiding development to the fringe areas on the east and west of the city. Its programme of Guided Land Development (GLD) is essentially a strategy to regulate and accelerate the efforts of the people to house themselves by providing serviced urban land affordable by low- and middle-income households. Similarly, the Kampung Improvement Programme (KIP) has been an innovative and widely replicated approach to upgrading living and environmental conditions in the city's poorer areas.

In regard to spatial planning, as the fifth most populous country in the world - with a land area distributed over 13,600 islands - spatial equity in economic and social development has been incorporated as one of the key objectives in the country's development plans. One of the major spatial policy concerns has been whether the pattern of urbanization has been unbalanced in favour of the growth of large cities, and particularly Jakarta. Towards this end, the Government has formulated a succession of regional plans designed to distribute growth over the wider Jabotabek region and to promote regional equity.

I. DEMOGRAPHIC CHARACTERISTICS

A. Population growth

From a population of about 530,000 inhabitants in 1930, Jakarta increased to 2,900,000 in 1961 (PT Hasfarm Dian Konsultan, 1985). Jakarta's population rose to 4,540,000 in 1971 and to 6,530,000 in 1980. The Office of Population Affairs reported that the population of DKI (Special Capital Area) Jakarta was 7,482,000 as of 31 December 1985 (Jakarta Post, 30 September 1986). That figure did not include an estimated 905,000 seasonal residents nor some 250,000 commuters from the surrounding BOTABEK region (The acronym stands for BOgor, TAngerang, and BEKasi, which are the three surrounding districts; JABOTABEK, the acronym for the broader metropolitan region, stands for JAKarta plus BOTABEK). Over the past two decades, Jakarta's average annual rate of population growth declined from 4.5 per cent during 1961-1971 to 4.0 per cent during 1971-1980. However, the recorded rate of population growth significantly underestimates the growth of Jakarta's functional population - a topic discussed in the following section.

There are significant differentials in the rate of growth among various parts of DKI Jakarta. Whereas Central Jakarta experienced negative growth of -0.1 per cent per annum during 1971-1980, North, West and South Jakarta each grew by average annual rates of around 5 per cent, whereas East Jakarta grew by nearly 7 per cent (Pemerintah Daerah Khusus Ibukota Jakarta, 1984).

Although fertility in Jakarta has been declining, it remains moderately high. The crude birth rate declined from 40.5 per thousand during 1966-1970 to about 35 per thousand during 1975-1980. The total fertility rate decreased from 5.2 births per woman in the late 1960s (1967-1970) to 4.1 births per woman in the late 1970s (1976-1979) - a 20 per cent decline - and continued to decline during the 1980s. Among the factors contributing to the decline, which was greatest among women between the ages of 15 and 19 and among those over 44, are delays in age at marriage, rising levels of education, and the success of Indonesia's family planning programme (PT Hasfarm Dian Konsultan, 1985).

Average life expectancy in Jakarta was estimated to be about 58 years in the early 1980s, compared to less than 50 years in the rest of Indonesia (PT Hasfarm Dian Konsultan, 1985). During 1971-1980, Jakarta's infant mortality rate declined from 124 to around 80 per thousand live births.

The proportion of the population under 15 years of age declined from 43 to 39 per cent between 1971 and 1980, whereas the dependency ratio declined from 80 to 68 per cent. Although average household size

has remained nearly constant - at 5.3 persons per household in 1971 and at 5.2 in 1980, household size is projected to decrease to 4.3 by the end of the century (Pemerintah Daerah Khusus Ibukota Jakarta, 1984).

Reducing the rate of Jakarta's population growth is currently a major national priority. The Government has announced the optimistic target of reducing Jakarta's population growth from the current average annual rate of around 4 per cent (2.3 per cent of which is attributable to natural increase and 1.7 per cent to net migration) to 1.8 per cent in order to ensure that Jakarta's population does not exceed 12,000,000 by the year 2000 (Sembiring, ed., 1984). The Government's strategy, outlined in the 1985-2005 Jakarta Broad Spatial Plan, involves placing greater emphasis on family planning programmes, dispersing part of Jakarta's current population throughout the larger Jabotabek region, and promoting transmigration.

B. Migration

Jakarta has long served as a powerful magnet to migrants. A 1956 UNESCO-sponsored study estimated that the annual rate of migration into DKI Jakarta during 1948-1953 was of the order of 116,000 (University of Indonesia, 1956). According to a subsequent ILO study, the annual increase in population during the 1960s resulting from migration was 86,000 (Sethuraman, 1976). From a computation based on length of stay in Jakarta and domicile five years before the census, it was estimated that average annual migration into Jakarta during 1971-1980 was 73,000 (PT Hasfarm Dian Konsultan, 1985). The Office of Population Affairs reported that the city received around 90,800 migrants in 1985 - equivalent to about 250 migrants per day (Jakarta Post, 30 September 1986).

With respect to the origins and characteristics of migrants to Jakarta, West Java and Central Java have been the major sending areas. During 1971-1980 about 65 per cent of migrants were between the ages of 15 and 39, with the peak ages being 20-24 (PT Hasfarm Dian Konsultan, 1985). Although there was a higher proportion of females aged 15-24, there was a smaller overall proportion of female migrants, mainly because of the tendency for older female migrants to return to their villages. Sixty per cent of migrants in DKI Jakarta had six years of education or less (13 per cent had had no education, 22 per cent were primary school dropouts, and 25 per cent had completed primary school); 13 per cent had attended junior high school; and the remainder had had some higher education, including vocational training. It is interesting to note that there was a positive relationship between educational levels and distance travelled (i.e., the higher their level of

education, the further the migrants' place of origin). In fact, there was evidence of a "brain drain" from other regions of the country to DKI Jakarta (PT Hasfarm Dian Konsultan, 1985).

As discussed above, there has been a decline over the past several decades in the number of permanent migrants arriving annually in DKI Jakarta. However, there is a substantial and growing body of field evidence that indicates that census lifetime migration represents only the visible tip of the iceberg in Indonesia (Hugo, 1978). Indeed, there are larger, more complex patterns of movement between village and city (e.g., commuting, circular and seasonal migration) that have generally gone unrecorded in censuses and surveys. One of the pioneering studies was a survey of 14 West Java villages conducted by Hugo in 1973 (Hugo, 1982). After examining all permanent and non-permanent moves associated with work and formal education, Hugo found that only one third of all such moves met census migration time criteria. ^{1/} One of the major types of non-permanent mobility that was identified was commuting up to 50 kilometres (regularly, although not necessarily every day) to work or attend school. Another was circular migration, whereby the movers did not change their usual place of residence in the village but were absent in the city for up to six months, typically engaging in non-permanent employment and usually maintaining some type of village-based employment. The study found that much, although not all, circular migration took place during the so-called empty season, the seasonal slack between planting and harvesting (Hugo, 1982).

Hugo's 1973 study also found that there were established precedents for circular migration dating back to colonial times. However, the larger scale and shorter periodicity of circular migration was a more recent phenomenon, explained largely by the rapid growth of cheap, efficient public transportation (chiefly buses, but including hitching rides on the back of trucks) (Hugo, 1978). The survey also determined that most circular migrants entered jobs in the labour intensive, predominantly small-scale informal sector, largely because of the freedom to select the days and hours they would work.

Much of the circular migration and commuting observed in the West Java survey villages occurred along well-defined contact networks. Moreover, there was a substantial degree of occupational clustering, with more than half of the temporary migrants from many of the villages working in one or two occupations (Hugo, 1982). Group adjustment to urban conditions was also observed in housing arrangements made by the circular migrants. This was confirmed by a number of community-based studies. Jellinek's study of petty traders, for example, described the pondok system, whereby circular migrants from the same area clustered together in small rooming houses (pondoks), whose owners provided them with credit and equipment to go into business as mobile traders (Jellinek, 1979).

C. Population projections

The 1965-1985 Master Plan projected the population of DKI Jakarta to reach 6,500,000 in 1985, and plans for infrastructure and services were based upon that figure. However, the population of DKI Jakarta, which was actually recorded in 1985 as 7,482,000, exceeded the Master Plan projection by nearly 1 million inhabitants. The Jabotabek Metropolitan Development Plan issued in 1981 projected the population of Greater Jakarta (defined as DKI Jakarta and its immediate outgrowths) to be 9,932,000 in 1993 and 12,045,000 in 2003. The total population of Metropolitan Jakarta (made up of Greater Jakarta and Bekasi and Tangerang urban centres to the east and west) was projected to reach 10,567,000 in 1993 and 13,600,000 in 2003. The revised Master Plan DKI 2005 issued in 1984 contained the projections presented in table 1.

There are some differences in the projections prepared by other institutions. In a publication issued in the same year as the updated Master Plan of 1984, the Statistical Office projected the population of DKI Jakarta to increase from 6,520,000 in 1980 to 7,890,400 in 1985, 9,381,200 in 1990, 11,016,900 in 1995, and to 12,795,400 in the year 2000 (Biro Pusat Statistik, 1984). A number of public officials have also issued statements concerning Jakarta's future population growth. In 1986, for example, the Governor of DKI Jakarta reported that, if the family programme failed to achieve its objectives, Jakarta's population could reach 17.5 million in 2005, assuming a continuing population growth rate of 4 per cent per annum (Jakarta Post, 18 March 1986).

Table 1. Projected population, average annual rate of growth and density of DKI Jakarta, 1985-2005

Year	Population (millions)	Average annual growth (per cent)	Density (persons per hectare)
1980	6.5	-	101.8
1985	7.6	3.3	118.4
1990	8.9	3.1	137.6
1995	9.9	2.3	154.4
2000	11.0	2.0	170.7
2005	12.0	1.8	186.2

Source: Pemerintah Daerah Khusus Ibukota Jakarta, 1984.

II. THE ECONOMY

A. Historical background and development of the city's economic base

In the early part of the fourteenth century much of the area around present-day Jakarta was controlled by the Pajajaran kingdom, whose northern boundary was an ancient seaport and market town named Sunda Kelapa. In the early sixteenth century Portuguese merchants attempted to expand their commercial influence in the area. Enlisted by the local ruler to confront the expansion of Muslim kingdoms in central and eastern Java, the Portuguese set up defence fortifications. Nevertheless, the Pajajaran kingdom was defeated by Muslim forces in 1527 - the year that marks the founding of Jakarta.

The Dutch East India Company arrived in Java in the late sixteenth century and constructed a walled city, Batavia, near Jakarta Bay which became the centre of Dutch trading activities for the next three centuries. Among their major legacies, the Dutch altered Jakarta's cultural and ethnic fabric by bringing in non-Javanese slaves from the outer Indonesian islands and workers from Ceylon, Burma, and Japan, who were followed by migrants from Europe, Arabia, India and China. Following their European tradition, the Dutch built a series of canals which drained the land and protected the traders from enemy attacks. Subsequently, an extensive system of urban railways was developed, linking Jakarta with Tangerang in the west, Serpong and the Sunda straits in the southwest, Bogor and Bandung in the south, and Bekasi and Cirebon in the east. By 1930 Jakarta was a city of 530,000 inhabitants, with a Chinatown and a modern European quarter surrounded by rural villages (kampungs).

Jakarta was occupied by Japanese forces in 1942. In 1945, following Independence, Jakarta was chosen as the capital city of the newly independent Indonesian nation. By a presidential decision of 1961, the status of Jakarta was raised to that of "special territory."

In regard to Jakarta's economic base, agriculture has never been an important sector and the city currently imports about 94 per cent of its food supply (PT Hasfarm Dian Konsultan, 1985). Indeed, since the colonial period, when the Dutch brought in migrants primarily to support their trading activities, most Jakarta inhabitants have been engaged in non-agrarian activities. Agriculture's share of gross regional domestic product (GRDP) decreased from 6.5 to 1.5 per cent during 1969-1983. Manufacturing, which increased its share of GRDP from 9.8 to 17 per cent during 1969-83, has been slow to develop, and is still much less important in Jakarta than in other Asian cities at a comparable level of development. The major manufactured goods produced in Jakarta include textiles, processed foodstuffs, published materials, chemicals and

electronic devices. Problems encountered in developing the manufacturing sector include the shortage of land for industrial estates, pressures on industries to reduce pollution levels and the low skill level of Jakarta's labour force (PT Hasfarm Dian Konsultan, 1985). Trade, which encouraged the disorganized growth of supporting activities such as warehousing and transportation, has been traditionally very important in Jakarta. However, its share of GRDP declined from 49 to 24 per cent during 1969-1983, partly as a result of the development of port facilities elsewhere in Indonesia.

Jakarta's share of GDP represents 9 per cent of the national total. However, its share of GDP has varied among sectors: 14 per cent of transportation and communication, 15 per cent of manufacturing, 25 per cent of trade and services and 65 per cent of banking and financial services (PT Hasfarm Dian Konsultan, 1985).

B. Recent performance of the economy

Economic growth in Jakarta during Repelita I (April 1969-March 1974) averaged 10.5 per cent per annum, fell to 9.8 per cent during Repelita II (April 1974-March 1979), and then rose again under Repelita III (April 1979-March 1984) to 10.3 per cent per annum (PT Hasfarm Dian Konsultan, 1985). Per capita income in Jakarta more than doubled during Repelita III, whereas an increasing percentage of family income - around 53 per cent - is now being spent on non-foodstuffs.

Whereas the first three Repelitas emphasized stability, growth and equity, Repelita IV (which began in April 1984) was aptly subtitled "Policies and prospects for sustained development under challenging conditions". Under the changed circumstances prevailing in the mid-1980s, with the crucially important market for oil having weakened dramatically, substantial adjustments to the Government's economic policy generally and its industrialization policy in particular have become necessary. Under pressure to promote its non-oil domestic revenues and export earnings, the Government introduced a number of important economic reforms in the mid-1980s, including an overhaul of the tax system, partial liberalization of the banking sector, the gradual lifting of subsidies from many parts of the economy, and the introduction of measures to attract increased foreign investment and promote non-oil imports (The Economist Intelligence Unit, 1986). Moreover, pressures have been mounting within Indonesia for a shift in its industrialization policy towards a less protected, more competitive and export-oriented industrial sector. Past and present reforms notwithstanding, the Indonesian economy in recent years has been mired in a deepening recession as its prime income generating sectors have suffered from weak overseas markets and a decline in domestic demand.

The impact of the recession has been felt by Jakarta. However, Jakarta's economy, which is based mainly on trade and financial services, and manufacturing, is better capable of enduring and adjusting to cyclical and external changes than those regions of Indonesia whose economies are resource-based.

C. The spatial structure of the metropolitan region

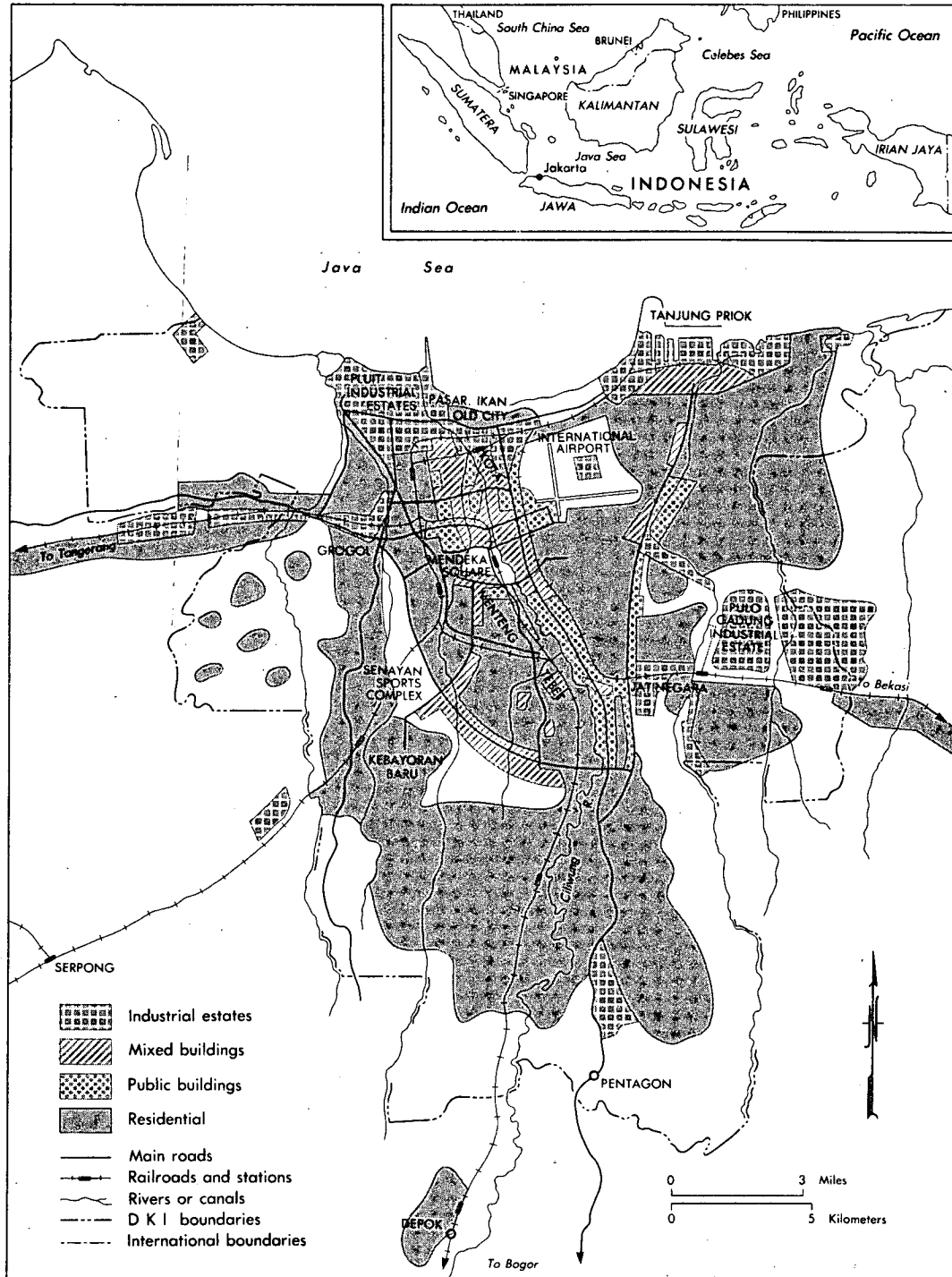
Jakarta lies on a low, flat alluvial plain on the northwestern coast of Java. Most ground from the coast to the Banjir Kanal in the south is between 0-10 metres above sea level. Because no physical obstacles prevented Jakarta's expansion, development spread steadily inland from the earliest settlements near the Java Sea to the higher, cooler land in the south. During the eighteenth and early nineteenth century, the old centre experienced frequent flooding because of silting-up of the harbour. The colonial Government located government buildings on higher land in an area that is now the centre of the city, Merdeka Square (Sivaramakrishnan and Green, 1983) (figure I). The subsequent pattern of development in a north-south direction was in part related to the topography of the Jakarta area, which is divided by five rivers flowing northward to the sea. Following Independence this pattern continued, with the construction of Kebayoran, a large, high-income suburb in the south, which was connected to the centre by six-lane highways that served as additional north-south axes (Sivaramakrishnan and Green, 1983). Later, a four-lane ring road, which provides the only rapid east-west link across the city, was constructed around existing development.

Whereas the area of Jakarta was 26 square kilometres in 1900, by 1985 it was around 600 square kilometres. The central, densely urbanized core covers some 180 square kilometres within an eleven kilometre radius of Merdeka Square and accounts for two thirds of the city's population (Sivaramakrishnan and Green, 1983). Despite the steady expansion of the geographical area of the city, average density nearly doubled every 20 years - increasing from 1,700 inhabitants per square kilometre in 1920 to nearly 11,000 per square kilometre in 1980 (Pt Hasfarm Dian Konsultan, 1985).

DKI Jakarta is divided into five administrative regions: West, North, Central, East and South Jakarta. Recently, the city was divided into nine development regions, based mainly on topographical factors. The northwest region - which contains a number of industrial estates and borders the new international airport - is a flood-sensitive area with poor environmental sanitation and groundwater polluted by saline intrusion. Similar to the northwest, the northeast is a sparsely populated region of swamps and rice fields. The most densely populated

Figure 1

Jakarta Urban Area, 1985



3451.1x

Source: K. C. Sivaramakrishnan and Leslie Green
Metropolitan Management: The Asian Experience
(Oxford, Oxford University Press, 1986).

development region is in the north. A maritime and warehousing area as well as a low-income residential area, the north has highly congested roads and poor environmental sanitation. The adjacent Tanjung Priok area, which is the supporting territory of Tanjung Priok harbour, is a flood-sensitive low- and medium-income residential area which has poor environmental conditions and saline groundwater. Because of the still limited road network in the east and west, both the east and west development regions remain largely undeveloped and are considered to be strategic areas for future urban development. The central region is the centre of government, financial institutions and most of Jakarta's embassies and hotels. Although a residential area for mainly medium- and high-income households, it has a scattered population of low-income households. The south development region, which consists mainly of residential areas and open space, is situated on higher ground and is considered well-suited for development. Studies have indicated, however, that this area has potential as an aquifer recharge area, hence its development should be strictly controlled in order to maintain the future water system of Jakarta. The final development region, Pulau Seribu, is a national sea park.

As of 1980, nearly half of the total land area of DKI Jakarta was in residential use. The next largest categories of land use were rice cultivation (17 per cent), uncultivated land (11 per cent), public buildings (10 per cent), fish-ponds (4 per cent), industry (3 per cent), meadows (2 per cent) and marshes (0.4 per cent) (PT Hasfarm Dian Konsultan, 1985). Open spaces (e.g., rice-fields, swamps and fish-ponds) have been continuously encroached upon by the urban area. Although the Government has discussed the possibility of developing an efficient agricultural area on the periphery of the city (as in Japan), in order to alleviate the need to import some 94 per cent of Jakarta's food supply, large numbers of farmers continue to sell off their land to real estate developers.

D. The sectoral and spatial distribution of jobs

According to the 1980 census, the largest proportion of workers in DKI Jakarta (38 per cent) was employed in services, including Government employment. Wholesale and retail trade, restaurants and hotels accounted for nearly a quarter of the labour force. Some 15 per cent of the labour force was employed in manufacturing - a share that is surprisingly small when compared with other large cities in Southeast Asia. Moreover, a large share of manufacturing employment is in cottage industries and self-employment (e.g., food processing), which is very low productivity and a quasi-service. Agriculture, which even in colonial times was not important, accounted for less than 2 per cent of employment (table 2). Overall, Jakarta has been an area of high employment growth. The most rapid employment growth during 1971-1980

Table 2. Total number employed, by sector, in 1971 and 1981 and average intercensal growth rate

Employment sector	Census				Average intercensal growth rate (per cent)
	1971		1980		
	number	per cent	number	per cent	
1. Agriculture	42,035	3.6	31,057	1.6	-3.3
2. Mining	4,087	0.4	16,291	0.8	16.3
3. Industry	110,214	9.4	290,184	15.0	16.4
4. Electricity, gas and drinking water	7,470	0.6	13,483	0.7	6.7
5. Building	85,217	7.2	128,514	6.7	4.7
6. Wholesale, retail restaurant and hotel	300,258	25.5	468,234	24.3	5.1
7. Transport, storage and communications	130,687	11.1	158,006	8.2	2.1
8. Finance, insurance, building/land lease and service	34,252	2.9	63,372	3.3	7.1
9. Public and private services	430,000	36.5	740,761	38.4	6.2
10. Others	34,795	3.0	355	0.0	-5.3
11. No response	-	-	20,902	1.0	-
Total	1,179,015	100.0	1,931,114	100.0	5.6

Source: Pemerintah Daerah Khusus Ibukota Jakarta, 1984.

occurred in manufacturing, followed by mining (mainly due to growth in the oil industry) and financial services. Whereas the sectoral distribution of employment changed very little during 1971-1980, manufacturing grew by 11.4 per cent per annum, increasing its share of total employment from 9 to 15 per cent.

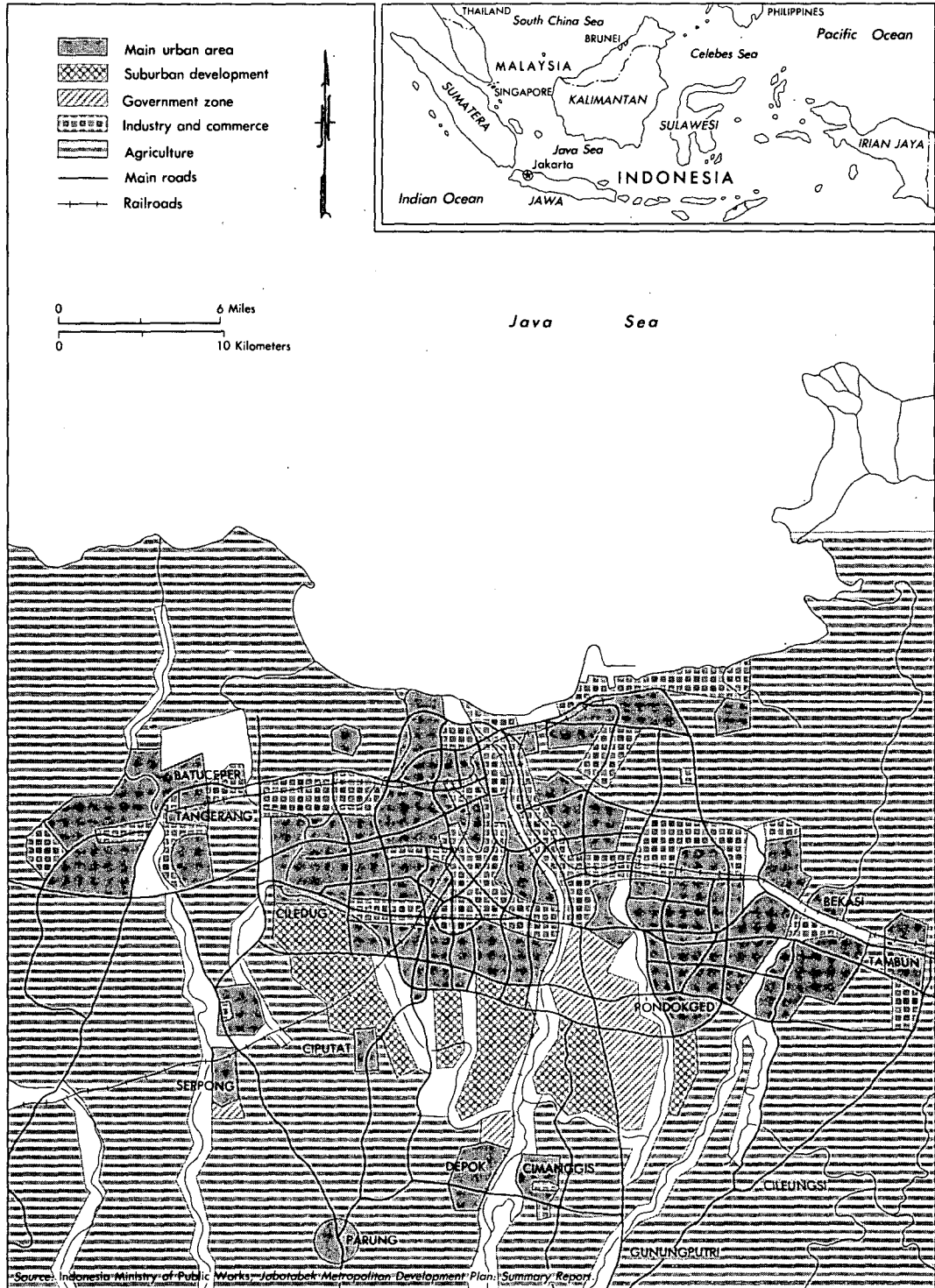
The distribution of employment was quite different in Botabek, where between half to one third of workers were employed in agriculture. The growth of employment in manufacturing was as high as 100 per cent in some Botabek sub-districts, however - particularly in those lying in a band surrounding and stretching south from DKI Jakarta. The service sector share also rose quite generally throughout the Botabek region.

E. The city in the region and in the national urban context

There are long-standing linkages between Jakarta and its hinterland. Growing numbers of people have been moving into the areas surrounding Jakarta in order to commute to the city. Moreover, there is a widening circulation radius, with people working in Jakarta for varying periods and then returning, bringing modern ideas back to their villages. Jakarta is currently the only urban agglomeration in Indonesia that stretches across provincial boundaries. In reality, the Jakarta agglomeration should include the Tangerang, Bekasi and Depok urban areas as well as DKI Jakarta (figure II). The urbanized area of Jakarta also spreads along the highway to Bogor district. Virtually all urban areas within commuting distance of Jakarta grew very rapidly during the 1970s (Depok by 12 per cent per annum, Bekasi by 10 per cent) - considerably more rapidly than the central city. For planning purposes, Bogor, Tangerang and Bekasi kabupaten (districts) are considered to form a single planning region, which has been called Botabek. The total population of the Jabotabek region (which consists of DKI Jakarta plus Botabek) was 11,500,000 in 1980 and is projected to be about 23,500,000 in 2005. As of 1980, DKI Jakarta contained about 90 per cent of Jabotabek's total population - a proportion that the Government hopes to reduce to 63 per cent by 1993.

Beyond the Botabek region, much of the rest of Java consists of densely populated rural areas. With a population of some 99 million inhabitants in 1985 - projected to reach 120 million by the year 2000 - Java is one of the world's most densely populated islands. It contains three of Indonesia's four metropolitan areas (DKI Jakarta, Bandung, and Surabaya) and a majority of cities in all other size classes (table 3). The dominance of Java in Indonesia's urban pattern was maintained during the early 1980s. Java's urban population grew slightly faster than the national average, accounting for nearly 73 per cent of the average net addition to Indonesia's urban areas over the period 1980-1985 (Hugo, 1987).

Figure II Outline Structure Plan for Metropolitan Jakarta, 1993



Source: Indonesia Ministry of Public Works, *Jabotabek Metropolitan Development Plan: Summary Report*

3451.2x

Source: K. C. Sivaramakrishnan and Leslie Green *Metropolitan Management: The Asian Experience* (Oxford, Oxford University Press, 1986).

Table 3. Number of urban areas in Indonesia by size class, 1980

	Total Indonesia	Sumatra	Java	Bali/ Nusa Tenggara	Kalimantan	Sulawesi	Maluku/ Irian Jaya
1M and above	4	1	3	-	-	-	-
500K-1M	5	1	3	-	-	1	-
200-500K	13	2	6	1	3	1	-
100-200K	20	3	14	1	1	-	1
50-100K	43	10	26	2	2	2	1
20-50K	127	23	81	5	3	11	4
10-20K	172	32	106	11	8	13	2
Total	384	72	239	20	17	28	8
Number of cities per million total population:							
	2.61	2.57	2.62	2.52	2.53	2.69	3.09

Source: National Urban Development Strategy Data Base

Note: M = million; K = thousand

At the national level, Indonesia was only 26 per cent urban as of 1985, partly because of the important role of circular migration. A total of 32.8 million people lived in Indonesia's functional urban areas in 1980 - one third in metropolitan areas (cities of over 1 million inhabitants), 10 per cent in large cities (of 500,000 to 1 million) and 21 per cent in medium-sized cities (of 100,000 to 500,000) (National Urban Development Strategy Project, 1985).

Although Jakarta has long been the commercial and administrative hub of Indonesia, with a nationwide sphere of influence, primacy is not as pronounced in Indonesia as in many developing countries. Jakarta currently accounts for just under 20 per cent of the total national urban population, which is well below the average of 29 per cent for middle-income Asian countries and far below the comparable shares for countries with serious primacy problems (e.g., 69 per cent in Thailand and 41 per cent in the Republic of Korea (National Urban Development Strategy Project, 1985). Moreover, although Jakarta's growth rate is currently the fastest among metropolitan areas in Indonesia, the gap is not substantial.

There are significant variations in urban structure trends by Indonesia's major islands. In Java, concentration in metropolitan areas was more pronounced and increasing somewhat more rapidly; the share in the intermediate size range changed very little during 1971-1980, whereas the share in cities below 20,000 declined significantly. Sumatra's urban structure presents a strong contrast. Its only metropolitan area, Medan, declined in share; growth was most rapid during 1971-1980 in the 200,000-500,000 size class, whereas small, and even very small cities had fairly high growth rates. In Bali/Nusa Tenggara the largest city declined in share, the second gained the most and the share in cities below 20,000 declined significantly. In Kalimantan, cities of all sizes were growing rapidly. Among all regions, Sulawesi's urban structure is most dominated by the largest size classes. Urban systems in Maluku and Irian Jaya are the least well developed, with a total of only eight cities of 10,000 or more.

However, size-class analysis can be somewhat misleading. In recent years, the shift towards development of natural resources (e.g., oil, timber) has led to the emergence of a network of inter-island coastal cities stretching along a crescent. Virtually all of the major cities of the archipelago which grew more rapidly than the national average were located along this crescent. In contrast, inland cities (in all size classes on Java and in all but the 50,000-100,000 size class in the outer islands) grew at significantly lower rates, leading to the conclusion that proximity to the northern coast is a key feature of Indonesia's contemporary urbanization process (Douglass, 1988).

III. DECENTRALIZATION AND LOCATION

A. The evolution of spatial strategies

Jakarta's initial response to problems of rapid urban growth was through land use controls and physical planning. In 1967, the Government issued a Master Plan for the period 1965-1985 to deal with problems within a 15-kilometre radius of the city centre. By the early 1970s, it was apparent that Jakarta's population would be much greater than the Master Plan's target population of 6.5 million inhabitants, and there was some attempt to update the Master Plan. A variety of sectoral plans were formulated during the early 1970s, including the Jakarta Metropolitan Area Transport Study, the Water Supply Master Plan, the Sewerage Master Plan, the Railways Master Plan and Tollroad Studies. There was little co-ordination, however, among the respective government departments involved in preparation of the various plans and, with the exception of arterial road construction, there was limited implementation (Clarke, 1985).

In regard to measures designed to influence population distribution, there has been greater use made in Jakarta of measures aimed at individuals and households and at their very small-scale enterprises. In 1970, for example, the Governor of Jakarta declared the city "closed". Under the closed city policy, which is nominally still in effect, migrants are required to show a certificate either from an employer (to indicate they have a job) or from a school (to show that they have been properly enrolled). They must report the specific dwelling in which they will be staying and leave money for a return ticket with a community official (Sivaramakrishnan and Green, 1983). If they do not have a job after six months, they will be returned to their villages.

Part of the city closure package was a paragraph ruling that any student wishing to enrol at an educational institution had to have a certificate stating that there was no similar course available closer to his place of origin. Moreover, since 1975 all primary and secondary schools have been closed to students whose parents were not registered citizens of Jakarta.

In its attempt to stem the flow of migrants, the Provincial Government also cleared squatter areas, declared sections of the city to be off-limits to betjaks (bicycle rickshaws) and prohibited sidewalk vendors and hawkers -- jobs that typically attracted large numbers of new migrants -- from working in particular areas. In addition, checks of identity papers were periodically conducted by soldiers of the Control Team, and persons found to be in Jakarta illegally were deposited on the outskirts of the city.

In addition to discouraging migrants from coming to Jakarta and finding work, the Government sought to deal with Java's population surplus through transmigration. A programme which traces its origins to early in this century, when the former Dutch colonial administration moved people out of Java to work on plantations in the outer islands, transmigration became an official policy following independence and picked up momentum in subsequent years. Although transmigration probably did not have a measurable impact on migration to Jakarta, evidence suggests that it was in part responsible for the growth of cities and rural towns on the outer islands (Douglass, 1988).

In the mid-1970s, the concept of physical and economic development planning was introduced for the Jabotabek region. In 1976, a team of planners was charged with revising the development planning strategy for the Jabotabek region. The structure plan for the area, which was completed in 1981, aimed at halting the sprawling north-south development of DKI Jakarta and channeling new residents, industries and office complexes towards the east and west, where the environment was more conducive to growth. It also aimed at: restricting urban growth and industrial development along the entire coastal plain; controlling suburban and industrial development throughout the southern zone of the aquifer recharge area; consolidating urban expansion into secondary growth centres; developing small towns and secondary urban centres; and providing better accessibility to employment and services for the Botabek population.

With respect to the role of the Government in implementation, it was expected that the Government would assist in implementing the plan in some sectors by direct investment in infrastructure, land, buildings and equipment and in other sectors by indirect support mechanisms such as the simplification of procedures. Specifically, in order to use the large and medium-scale manufacturing sector as the leading edge to encourage accelerated growth of Botabek centres (and to maximize linkages with small-scale manufacturing) the Government planned to finance and implement a new programme of Staged Industrial Land Development (SILD). It also planned to restrict new industries in DKI Jakarta and strengthen incentives to locate in Botabek and other regions.

Small-scale manufacturing was to be encouraged not only in Botabek - where it would supplement agricultural employment - but also in Jakarta, where it would provide additional jobs as large and medium-size industry was deconcentrated to Botabek. With respect to trade and services, the strategy planned to encourage larger formal sector businesses to relocate in Botabek and thereby indirectly accelerate the growth of small-scale businesses in those areas. The strategy also planned to decentralize central government agencies outside DKI Jakarta (e.g., at Serpong, Depok and Pondok Gede); and to investigate the feasibility of office "campus" areas at key Botabek growth centres.

B. Current spatial strategies

Several planning documents were produced for Jakarta during the early 1980s: the DKI Strategic Development Plan (1983/84), which included the DKI Structure Plan 1985-2005, a financial development plan, and a management plan. As in the earlier plan for the Jabotabek region, priority in the strategic plan was given to the development of west and east Jakarta. Development of the northwest and northeast - a flood plan where construction would entail higher investment costs - was to be deferred at least until the year 2000. Expansion was also to be restricted in south Jakarta, where the bulk of the population lived off groundwater. Development of heavy and medium industry, the office sector, trade, and other services was to be limited in north and central Jakarta. New economic activity was to be encouraged in east and west Jakarta but would be restricted in south Jakarta. As a parallel activity, an Economic and Socio-Cultural Development Strategy was also formulated. Basically, its goal was to improve the general welfare by reconciling the conditions and demands of city life with the philosophy of Pancasila 2/. As for the Jabotabek plan and the related kabupaten plans, e.g., the plans for Tangerang and Bekasi, none was ever formally approved by the central Government, hence they had no higher status than a series of recommendations.

With regard to specific measures designed to influence spatial distribution, in 1982/83 the Investment Co-ordinating Board placed restrictions on investment in selected geographical areas. Specifically, the Government identified 122 manufacturing items which were prohibited from being manufactured in certain provinces. Among these, 17 items were prohibited from being manufactured in Jakarta, whereas 16 categories - including various types of electrical appliances, metal products and metal building materials - were prohibited from Jabotabek. Seventy-four items were prohibited from locating in Java. The reasons for such a system were not purely spatial; other arguments were sometimes put forth such as the need to limit overcapacity or to ensure economies of scale.

During the early 1980s, government agencies concerned with urban development also recognized explicitly that Indonesia was likely to face accelerated urban growth during the remaining years of the century. Because of resource constraints resulting from the decline in oil prices, all cities and towns could not be developed at the same pace, hence priorities would have to be established. An outgrowth of this concern was the National Urban Development Strategy (NUDS), which was funded by a \$US 3.4 million grant from the United Nations Development Programme (UNDP) and a Rp. 476.6 million contribution from the Government of Indonesia.

NUDS had three specific objectives: to develop improved policies to address the key issues of national spatial development (this involved analysing the forces that were determining Indonesia's emerging urban

and regional patterns and working with government officials to identify practical policy options); to formulate an integrated urban development strategy; and to establish an institutional framework for continually updating and implementing that Strategy. The major principles behind the NUDS approach were that the Strategy should be action-oriented - in contrast to the typical static master plan - and that it should be feasible in the light of real financial and administrative constraints.

Regarding the role of Jabotabek, NUDS concluded that moderating the growth of Jabotabek was significantly less important than improving its internal structure. Although Jabotabek would have to absorb very large population increments by the end of the century, and would likely reach 18.3 million inhabitants, its size would not be unmanageable by international standards. NUDS emphasized that policies to temper the growth of Jabotabek and other large urban areas should exclude regulations prohibiting in-migration - because such measures were rarely enforceable (in Indonesia and elsewhere) and nearly always had damaging side effects for low-income groups. Similarly, NUDS stressed that it would be a serious error to forego improvements in strategic infrastructure needed to help Indonesia's large urban centres fulfill their vital roles in the national space-economy. A number of alternative approaches that were considered worth employing were: intensive urban-based family planning programmes; cutting back or eliminating subsidies that reduced the cost of living in these areas relative to other locations; and stimulating the development of competitive centres (National Urban Development Strategy Project, 1985).

The major recommendations in NUDS for DKI Jakarta related to the need to improve its internal structure. Noting that growth in Jakarta presently entailed scattered residential expansion around the fringes of the built-up area, with most new employment still being created in the central city, NUDS recommended more orderly and compact expansion on the fringes of the main urban area, along with the accelerated growth of sub-centres at reasonable distances from the centre. For the most part, these sub-centres would be built around existing towns that had already exhibited a capacity for employment generation. The new residential areas should be compact and emphasize an incremental, low cost approach based on the principles of Guided Land Development (see chapter IV, section B), with early application of Kampung Improvement Programme techniques to structure residential growth (see chapter IV, section C). Because much of the growth occurring around Jakarta was taking the form of high density settlement along the major roads radiating out from the centre, rationalizing the development of these urban corridors should be an important aim of local policy. Where possible, development should be focused in higher density nodes (National Urban Development Strategy Project, 1985).

NUDS noted that implementing the above recommendations would require the co-ordinated use of a number of policy instruments, including: a package of controls to discourage business expansion in the central city and on valuable agricultural land; measures to facilitate land assembly; mechanisms to promote cost recovery with cross-subsidization (using profits from land development for business and higher-income residents to support residential development for low-income groups; expansion of credit for housing and efforts to enhance the role of the private sector in the development process (National Urban Development Strategy Project, 1985).

In addition to the National Urban Development Strategy, in 1985 the report of the West Java Urban Development Project (WJUDP), which dealt with the Botabek portion of the Jabotabek region, was also issued. As in the earlier plan for the Jabotabek region, the WJUDP report outlined a strategy to reduce growth pressures on Jakarta by guiding development towards five urban centres - Tangerang, Bekasi, Karawang, Cikampek and Cikarang - in surrounding kabupaten. In contrast to the Jabotabek plan, however, growth was to be promoted along a single east-west corridor. The cities of Bogor and Depok were no longer planned as growth centres and the north-south corridor to Bogor was no longer considered to be a zone for re-directing urban-industrial expansion. Also, two of the five growth centres - Karawang and Cikampek - were located in kabupaten which were outside the original Jabotabek boundaries (Douglass, 1989).

As Douglass notes, the WJUDP report also reflected a fundamental shift in planning ideology that was being heavily promoted by donor agencies. Rather than having the Government provide the major impetus for development, reliance was now to be placed on the private sector and the market to allocate activities over space (Douglass, 1989). However, a major problem was the fact that, whereas the Government was able to influence locational decisions by the private sector by providing public subsidies in selected growth centres (through the mechanism of its Integrated Urban Infrastructure Development Programme/IUIDP), it had no power to prevent land development by the private sector outside of the designated areas. For example, private contractors continued to construct sub-divisions of expensive second homes in the southern uplands - an area where development was meant to be restricted. In addition, although it was not designated as a growth centre in either the Jabotabek plan or the WJUDP report, private developers have undertaken a major initiative to develop the small town of Serpong (pop. 10,000 in 1985) into a city of 600,000 by 2005. As Douglass notes, "the proposal was nothing short of a sweeping challenge to all of the Jabotabek plans" (Douglass, 1989). Although the Government was able to assert that its intentions regarding where it desired to promote and where it desired to restrict development had been made well known through the Jabotabek plan and the WJUDP report, because these plans were never given official approval, they had no legal force.

The Government's most recent initiative is a development plan for 1985-2004 for Puncak, an upland area of Jakarta metropolitan region located along the rapidly developing corridor towards Bandung. The plan for Puncak is noteworthy in that it was issued in the form of a Presidential Decree, which gave it an implied legal status not awarded the other regional plans. Subsequently, the presidential decrees resulted in the formulation of a spatial development plan, "Mechanism for the Special Treatment of Puncak Area (Jabopunjur)", which was given Cabinet approval in 1986 (Douglass, 1989).

IV. ISSUES AND SECTORS

A. The labour market

Since the first national development plan, Repelita I, which began in 1969, manpower policies have been an integral part of overall development policies in DKI Jakarta. Programmes carried out by the Provincial Government have included several labour-intensive public works programmes, the teaching of specialized skills in government-sponsored training institutes, development of communication and information networks regarding changing conditions in the labour market (to date, these have been targeted mainly at students and registered job seekers, although they are planned to be expanded), and special manpower training programmes designed to promote small-scale manufacturing and handicraft production in poorer areas of the city.

The Government has maintained an ambivalent attitude towards informal sector activities, which are estimated to account for half to one third of total employment. For a variety of reasons - to discourage the continuing arrival of unskilled migrants, to improve the city's physical image, to promote public order and to ease traffic congestion - the Government has periodically introduced policies designed to either regulate or progressively abolish petty trading and betjak (bicycle rickshaw) driving. There were 136,000 registered betjaks in Jakarta in the late 1960s, and at least that many illegal ones, providing employment to an estimated 400,000 persons. In 1973, the Government voted to make the city "betjak-free" within five years. In terms of implementation, the Government decreed that betjaks would be confined to the slums and suburbs and would be allowed into the downtown area only late at night. In cases of irregularities, betjaks were seized and dumped into the sea, and the drivers were either sent back to their villages or transmigrated. Moreover, betjaks could no longer be manufactured or repaired. Although the betjak-free policy was revived in 1983 and again in 1985, there are still an estimated 25,000 betjaks, and perhaps 50,000 drivers. Over the years, the Government periodically rounded up unlicensed sidewalk vendors, pushcart (kaki lima) operators, scavengers and beggars and deposited them outside the city limits.

In recent years the Government appears to have softened its position. For one thing, it considered legalizing some 7,000 betjaks to operate in slum areas. The Government also formulated a number of policies aimed at assisting small business and transient traders such as sidewalk vendors. For example, small traders are currently allowed to operate at 46 central government markets, and more than 400 kiosks at/or outside markets have been earmarked for some of the city's 100,000 sidewalk vendors. The Government also set up centres for handicrafts and other small-scale industries at 37 sites, established 100 small

industrial units and more than 100 units of standard factory buildings in the industrial estate of Pulo Gadung (PT Hasfarm Dian Konsultan, 1985).

Business assistance, usually in the form of small credits, is also available from the Provincial Government for the development of small-scale industries, handicrafts and small-scale trading. In addition, the Provincial Government has provided special buses for small retailers in order to enable them to carry their goods at a relatively low fare. Another innovative programme is the so-called "godfather system" of development promotion, whereby part of the manufacturing or marketing process in certain industries (e.g., furniture-making, machine components, car body building) is sub-contracted to so-called "weak industries". Finally, there are job creation components in all of the Government's major strategies, including the Kampung Improvement Programme (KIP), an improvement scheme for low-income settlements, Guided Land Development (GLD) and the plan for the Jabotabek region, which proposed to exploit natural resources efficiently so as to create 750,000 new agricultural jobs.

B. Urban land

As in a majority of large cities in the developing world, large areas of uncontrolled development have been springing up throughout Jakarta, e.g., along canals and railway lines and on open land. There has also been heavy speculation in the urban land market, reflecting the lack of affordable land remaining in DKI Jakarta, except on the fringes of the city to the east and west. Indeed, between 1980 and 1984, it was estimated that 7,000 hectares out of a total available area of 9,000 hectares were developed as sites for high-quality, low-density housing, or were bought up by speculators and were lying vacant (Provincial Government of DKI Jakarta, 1984). Because of limited financial resources and cumbersome acquisition procedures, the Provincial Government has found it increasingly difficult to obtain land for public infrastructure (e.g., for power plants, roads, schools and other public facilities). Moreover, the Government acknowledges that it has been unable to enforce current land use standards, which are too high and unaffordable for the poor (Provincial Government of DKI Jakarta, 1984). Indeed, whereas in 1980 the cost of one square metre of land in a poor residential area in central Jakarta was roughly equivalent to one month's income, the minimum legal area for a plot of land was 40 square metres (Jellinek, n.d.).

In response to these problems, the Government has adopted two innovative programmes: Guided Land Development and Urban Betterment. Guided Land Development (GLD), which is essentially a simplified form of

land readjustment, is not a new concept, in that it does not seek to change the system whereby households obtain a small plot of land and then build a small house with their own resources. Rather, it seeks to regulate and accelerate the efforts of people to house themselves by providing serviced urban land affordable by low and middle income households (at least 60 per cent of the land in GLD areas is earmarked for these groups) in areas with adequate groundwater.

The programme works as follows. Areas are selected on the basis of available land, potentially easy provision of main entry roads, adequate drainage conditions and water catchment and an existing housing stock that is not too dense. Having met these criteria, the locations then also have to conform with the Structure Plan, district plans and the national five-year plan (Repelita). (To date, the areas selected have been mainly in the east and west and on the urban fringes.) Development plans and actual layout plans for the areas are prepared with the participation of area residents and landholders. Decisions are made at the outset about public rights of way, and key parcels of land for essential community facilities (e.g., schools, clinics, markets) are purchased at public expense.

Guided Land Development also seeks to regularize land tenure in GLD areas. The land tenure system in Jakarta is very complicated. Large areas of the city, mostly located around the city boundary, but also in the kampung settlements and even under some permanent modern buildings, are under adat land rights. Adat law is not written law, but rather a custom and tradition that is recognized and respected by a given community or ethnic group. It differs from Indonesia's prevailing system of land tenure derived from western law, in that ownership is based on recognition of previous relations between land and a given individual or family (PT Hasfarm Dian Konsultan, 1985). Following Independence in 1960, the National Government issued a new land law - the Basic Agrarian Law. It required that all land had to be registered and that all previous land rights, including adat rights, be converted to the new system, which consisted of five types of primary and four types of secondary rights, with distinctions made between rights of ownership, rights of use, rights of exploitation, leasing and several others. However, because land registration was complicated and expensive, large numbers of Jakarta residents did not convert their adat land rights. Some attempts at compulsory registration were made in the late 1970s but were not entirely successful. A crash programme was initiated in 1981 to simplify land registration for low-income households. However, registration still remains irregular. A major problem is that although adat rights cannot be challenged in regard to ownership, they also cannot be used to obtain building permits or credit (PT Hasfarm Dian Konsultan, 1985).

In addition to regularizing tenure, GLD also aims at lowering land use planning standards (e.g., permitting a minimum plot size of 20 square metres) in order to make construction affordable for lower-income households. Additional programme components include extending the network of arterial roads (to channel employment into designated zones), promoting local employment growth in small-scale industries and establishing an administrative, planning and financial structure that will ensure the effective management of future growth. Clearly, the programme goes beyond a land policy, but the key element is for the Government to provide land with minimum services ahead of demand.

To keep prices from rising sharply, GLD aims at providing enough land or more land than demand requires. Improvements to minimum acceptable levels are staged incrementally so that land values do not escalate beyond the level of affordability of the majority of households. For example, only footpath access is provided initially in many areas, because land without road access remains cheaper. Projects are implemented in phases, with cross-subsidies to keep capital outlays as low as possible. A land gains tax is levied to ensure that the Government can afford to carry out further GLD projects by re-using the initial capital invested in the project (it is collected either when the land is sold by the owner or immediately after implementation in order to encourage land sales).

In addition to the scarcity of land, another serious problem in DKI Jakarta is disorderly and environmentally unsafe land use, particularly in the north. If Jakarta's current land use planning standards were rigorously enforced, the Provincial Government acknowledges that much of the housing stock in the North Jakarta and Tangjung Priok areas (two old-established, densely populated areas that have few open spaces, congested roads, unhygienic water and poor environmental sanitation) would have to be demolished and replaced with multi-storey units. Because that would be financially infeasible, the Government has adopted a new approach entitled Urban Betterment. Essentially, the Urban Betterment Programme is an extension of the Kampung Improvement Programme (KIP), which has been in operation since Repelita I. Urban Betterment differs from KIP, however, in that it is a zonal rather than a kampung-specific programme. It basically seeks to improve inter-kampung infrastructure (e.g., by clearing and flushing main drains, providing public water hydrants, constructing small polders for low-lying flood-prone areas). Presently, the Provincial Government considers Urban Betterment to be an intermediate stage of improvement between KIP and a higher standard of environmental servicing that might be achieved by the end of the century (Clarke, 1985).

C. Housing

Housing is considered to be one of Jakarta's most serious problems. More than 20 per cent of the housing stock is temporary, which means that it is generally expected to last less than five years (PT Hasfarm Dian Konsultan, 1985). Nearly 40 per cent is semi-permanent and will probably last less than 15 years. Because of rapid population growth and the need to replace about 10 per cent of the total housing stock annually, demand in Jakarta runs at about 200,000 units per year (PT Hasfarm Dian Konsultan, 1985).

PERUMNAS, the National Urban Development Corporation established in 1974, has built about 24,000 units annually in urban areas of Indonesia (Asian Development Bank, 1984). In Jakarta, units were built mainly in peripheral areas and were reserved for public servants and the military. Although some units were offered for sale to the general public, they generally were too costly and had limited appeal, because there were limited opportunities for work in the areas in which they were located (Jellinek, n.d.). Although PERUMNAS's product mix has changed in recent years, and there is now greater emphasis on smaller plots with more affordable small core houses, it has not reached the lower 50 per cent of Jakarta households. PERUMNAS has also constructed four- and eight-storey blocks of flats in Jakarta as part of an urban renewal programme in which kampungs that were too deteriorated to be improved were demolished and replaced. Although PERUMNAS acknowledges that living vertically is still an alien way of life for most Jakarta residents, it reported that its first project - Kebong Kacang I, which was completed in 1984 - had been more successful than anticipated. Twenty per cent of area residents chose to stay in the cleared area and were housed in temporary shelters until construction of the high-rise flats was completed; another 30 per cent agreed to move to other public low-cost housing. The remaining units were advertised and then sold to the general public to obtain cross-subsidies. Of the 50 per cent who did not remain in the area or accept other low-cost housing, many were self-employed households whom PERUMNAS would have prohibited from selling food or operating cottage industries in the new high-rise units. Others were those who lacked proper identification papers, and therefore were not entitled to be compensated. In conducting an evaluation of the project, Jellinek (n.d.) estimated that nearly 50 per cent of compensation payments were used for purposes other than re-housing, i.e., they were used to pay off old debts, to honour family obligations or to buy consumer goods.

The private housing sector has been quite active in DKI Jakarta. During Repelita III, Jakarta REI (Indonesian Real Estate Developers Association), an association of some 150 Jakarta real estate developers, built 142,000 houses - with a breakdown of 94,000 low-cost houses,

39,000 medium-cost houses and 9,000 luxury homes. This exceeded the 6:3:1 ratio, i.e., six low-income houses for every three middle- and one upper-income house that developers were required to construct under Repelita III. However, as in the case of the housing units constructed by PERUMNAS, the lower-priced homes built by private developers in Jakarta have been much too costly for lower-income households. This is partly because the formal mortgage market remains small in Indonesia. Although mortgages are highly subsidized, the distribution of subsidies has been weighted towards non-PERUMNAS units, hence most of the subsidies have not been received by lower-income families (World Bank, 1984).

Conventional housing construction programmes in Jakarta coexist with the Kampung Improvement Programme (KIP), an innovative programme begun in Jakarta in 1969 and subsequently extended to 220 Indonesian cities. (The term kampung literally means a compound, but came to be applied to the semi-urban villages built on swamps or former rice fields that form a large part of most Indonesian cities.) Although informal, unplanned and, until recently, unserviced, the majority of kampungs have some form of legitimate tenure, hence they cannot be classified as squatter areas. By virtue of their great densities - averaging 21,500 inhabitants per square kilometre - the kampungs still account for 70 per cent of population growth and remain the principal location of new Jakarta households (Sivaramakrishnan and Green, 1983).

During the first five years of the programme, KIP was implemented by local committees and was funded from the city's own resources, with standards set low in order to stretch these resources as far as possible. In 1974 the World Bank extended a loan (Urban I) to expand the programme, and, as a condition of the loan, established a separate project unit. A second loan (Urban II) was approved in 1977 and a third (Urban III) in 1979. Spending on KIP has been significant; in the first 15 years of the programme, KIP's budget was Rps. 15 billion - an average of Rps. 22,000 for every person living in an improved kampung. Capital costs, with the exception of the installation of standpipes, have not been recouped from residents of improved kampungs. The only costs to the residents have been increased property taxes, which are comparatively low in Jakarta.

The basic principles of KIP are simple - to make improvements, even if marginal, in the living standards of as many residents as possible. KIP funds are used to improve public facilities, e.g., to upgrade roads, canals and water supplies, and to construct social welfare facilities, and communal bathing and washing facilities, rather than to be used for private accommodations. However, in 1985, KIP built 76 rental units (semi-permanent houses of 14-19 square metres that rented for Rp. 600-800 per day) for lower income households, mainly to serve as a demonstration project for the private sector.

Over the years, in an effort to give priority to the kampungs in greatest need, the criteria used to select which kampungs would be improved were the population growth rate, income level, population density, physical condition, and how the tract of land fitted into the Master Plan - qualified by a requirement that the kampungs selected should be more or less evenly distributed among the five mayoral districts. By the end of Repelita III, KIP had improved more than 500 kampungs, covering 11,000 hectares and had improved basic services for an estimated 3.8 million residents. During Repelita IV, KIP was continued, with an emphasis on well-planned land use, security of tenure and health and sanitation. A major focus was on environmentally unsound North Jakarta, where freshwater tanks and hydrants were installed, more community health centres established and rubbish collection sites located.

Because of KIP's longevity, it has been possible to conduct a number of longitudinal impact studies. In general, such studies found that KIP had wide community support. It triggered substantial private investment in home improvement and led to significant property value increases. Indeed, the National Urban Development Study (NUDS) found that home values increased 2.6 times more than money invested in home improvement. However, no evidence was found that KIP led to gentrification, i.e., to the forcing out of local residents because of increased property values. Among the negative aspects of the programme, evaluation studies found that maintenance was one of the most serious failures. There was too little emphasis on sanitation - an omission that the Government began attempting to correct during Repelita IV. 3/ Moreover, there was insufficient emphasis on creating employment within the improved kampungs - another area that the Government is now beginning to address. Evaluation studies found that the Government generally had adhered to the goal of improving the worst kampungs first; however, because kampungs were improved to a lower standard before 1974, when World Bank financing became available, some of the earlier kampungs had had to be re-upgraded.

Although a majority of kampung residents have not been displaced by improvement programmes, residents of never-to-be-improved kampungs - i.e., those in hazardous areas or on land zoned for other purposes - have generally been given the choice of moving to another place (for which they would receive compensation, provided they could show their identity cards), returning to their villages (with a paid, one-way ticket) or of being transmigrated to one of the outer islands. The Government maintains a similar policy towards the city's homeless. It conducts periodic round-up operations, once again sending the homeless back to their villages or into the transmigration programme. During Repelita III, the Provincial Government conducted 1,500 such round-up operations, as a result of which over 5,000 persons were returned to their villages and 3,000 were transmigrated (Sembiring, ed., 1984).

D. Water supply and environmental problems

Unlike most of Indonesia, the island of Java does not have an ample supply of water. Jakarta's main source of drinking water is the hilly regions to the south outside DKI territory. The piped network was originally designed by the Dutch for a city of half a million inhabitants. Although expanded, it does not cover the entire area of DKI Jakarta. Nearly 80 per cent of Jakarta residents use underground water, which has become steadily depleted. Indeed, in southern areas of the city, artesian wells have now to be sunk much deeper to produce potable water. In low-lying North Jakarta, groundwater depletion has caused serious land subsidence, worsened susceptibility of the area to flooding and allowed sea water from the Java Sea to seep into the coastal aquifers. Indeed, from a point of approximately 5 kilometres from the sea in 1970, sea water has now intruded some 15 kilometres inland, polluting wells in the central city and threatening the construction of some high-rise buildings (Douglass, 1989).

Progress has been made in recent years in increasing Jakarta's water supply. During Repelita III the State Drinking Water Company (PAM) completed a 1,000 litre per second plant at Pulo Gadung and constructed four mini-plants. The capacity of the drinking water plants in Jakarta is now about 6.5 cubic metres per second, equivalent to about 85 litres per person per day (PT Hasfarm Dian Konsultan, 1985). However, because of rapid population growth, PAM cannot provide sufficient service. Moreover, with the growth of new industries and large-scale development by real estate firms, there will be increasing demands on Jakarta's water supply. For that reason, one of the major components of the Government's overall spatial strategy is to guide development to areas in the east and west that have adequate groundwater, and to restrict development in the south, which is a vital aquifer recharge area.

In regard to distribution, Jakarta's piped network is old and leakage is high. As of the mid 1980s, less than one quarter of the population of DKI Jakarta had piped tap water, with the proportion ranging from 42 per cent in Central Jakarta to only 14 per cent in North Jakarta (PT Hasfarm Dian Konsultan, 1985). These were generally the more affluent households that could afford the Rp. 120,000 connection charge (which is about three times the monthly wage of households at the poverty level). More than half of the population obtained water from wells and 22 per cent from water vendors, with rivers and canals providing many residents with water for cooking, washing and waste. The proportion of residents obtaining water from wells was highest in South and East Jakarta (84 and 77 per cent, respectively), whereas the proportion purchasing water from vendors was highest in North Jakarta (74 per cent) (PT Hasfarm Dian Konsultan, 1985).

The Government's goal is to deliver clean water to 75 per cent of the urban population by the end of Repelita IV. In the first year of the plan, steps were taken to raise the capacity of the Pulo Gadung dam, to repair damaged pipes, to extend the distribution network, to install more hydrants in heavily populated areas and to distribute water through mobile tanks in areas not serviced by PAM. Despite its efforts, the Government faces serious obstacles. For example, the poor quality of water is a continuing problem. Indeed, untreated water flowing into treatment works in Jakarta is often so polluted that it is considered worse than the water running through sewage treatment facilities in many developing countries (Devas, 1981). Furthermore, although there is an awareness of the need for a basic needs approach to water delivery, PAM is an independent corporation that must earn a profit. In the past, this has meant that standpipes have received less attention than household connections. Also, despite the improvement of the water supply in many kampung areas, which, in theory should have reduced the cost of water, officials have not been able to control the resale price of water from the standpipes. Indeed, it is estimated that the poorest urban households spend as much as 7 per cent of their income on water, purchasing water from vendors at about 13 times the cost of piped water. The major obstacles, however, are the long lead time for constructing additional drinking water facilities and the large capital requirements. The Jabotabek Advisory Implementation Team estimated in 1980 that, to ensure an adequate water supply for Jakarta, the Government would have to invest on the order of Rp. 240 billion during Repelita IV - a sum equal to 60 per cent of total national investment in water supply during Repelita III.

Jakarta's environment has been deteriorating rapidly. The city does not have a waterborne sewerage system. To cope with the 700,000 cubic metres of sewage that is generated daily, it relies mainly on septic tanks and on the numerous dykes, rivers and other waterways. Whereas a piped sewerage network would be the preferred solution, the Jabotabek Advisory Team estimated that a sewerage system servicing an area of 230 square kilometres would cost Rp. 525 billion and take at least 20 years to complete. Nevertheless, a World Bank-assisted pilot piped sewerage project is being conducted in one area of Jakarta. As an interim solution, existing drains have been re-directed to speed the passage of sewage to the sea. In regard to the disposal of liquid waste, human waste is collected by the City Cleansing Dinas and discharged into certain rivers. Recently, a unit to process nightsoil by means of an oxidation pond was built in Pulo Gadung. Factories are now required to treat their waste before releasing it into the public drains. Moreover, real estate developers are encouraged to construct alternatives to septic tanks when opening up new sub-divisions.

The City Cleansing Dinas of DKI Jakarta collects only about 35 per cent of the total daily amount of solid waste and transports it to open dump sites, where it is scavenged and sorted by some of the city's

10,000 scavengers (PT Hasfarm Dian Konsultan, 1985). Whereas Jakarta's main roads (e.g., the protocol roads) are kept clean by constant vigilance, sanitation is particularly poor in the kampungs and in the public markets. During Repelita IV, the Government planned to provide more garbage trucks, to build incinerators and to open new sanitary landfills. In an attempt to raise the level of community awareness, the Hygiene Service launched a public awareness campaign - e.g, using a song based on a traditional Indonesian melody to exhort residents to put out their garbage on the designated day. Radio forums, instruction by teams of artists and entertainers and campaigns by women's organizations have also aimed at raising public awareness of environmental issues.

Flooding has been a perennial problem in DKI Jakarta, particularly in kampungs constructed in swampy areas. The common practice of dumping solid waste into the micro and macro drains has caused the system to overflow during the rainy season and hinders the water flow during the dry season. During Repelita II the Government enacted a number of flood control measures, constructing dykes and removing unlawfully erected shacks which lined the flood canals. During Repelita III it completed the 8-kilometre Cenkareng main flood drain, constructed networks of micro and macro drains and repaired existing drains. During the early years of Repelita IV the Government constructed drains that had been scheduled but not completed under Repelita III. Once again, the Government has encouraged community participation in such activities as unclogging drains.

E. Power

Jakarta's electricity supply is generally sufficient for Jakarta consumers. Because of the city's rapid population growth and steady expansion towards the urban fringes, the state-owned electric company had to increase its supply capacity by more than 20 per cent per annum during 1971-1980 (PT Hasfarm Dian Konsultan, 1985). As of 1980 more than 60 per cent of the electricity supply was consumed by households and the remainder by industry and commerce. A major problem has been the widespread theft of electrical power from main cable transmissions.

F. Health and education

The population of Jakarta suffers from a number of chronic health problems. The leading causes of death are pneumonia, child malnutrition, bronchitis, tuberculosis, rheumatic fever and cholera. About 80 per cent of the population is estimated to be chronically infected with waterborne parasites (Sivaramakrishnan and Green, 1983). The most common types of morbidity recorded in DKI Jakarta in recent years were respiratory tract infections (nearly one third of the total),

followed by skin diseases, gastro-enteritis, diarrhoea, tuberculosis, eye diseases, malnutrition and dysentery (PT Hasfarm Dian Konsultan, 1985).

Jakarta has two parallel health care systems: a modern medical system and a traditional system. The latter is practised by healers and sorcerers and is based on traditional cures (e.g., herbal medicines) and/or supernatural practices (PT Hasfarm Dian Konsultan, 1985). The Government has given its support to traditional health practitioners, who are widely viewed as performing an important function, and who generally complement rather than compete with the modern health care system.

Because of rapid population growth, health services in DKI Jakarta have been declining in terms of ratios of hospital beds, general practitioners and dispensaries, although not in terms of ratios of community health centres. Jakarta's modern health care system is currently based on a network of 290 community health centres (puskesmas) and 330 maternal child health centres, which are more or less evenly distributed throughout the region. At the upper end of the health care hierarchy, Jakarta has 46 hospital facilities, with more than 9,000 beds - a ratio of one bed per 730 inhabitants (PT Hasfarm Dian Konsultan, 1985). Although health care services in DKI Jakarta are superior to those in the rest of Indonesia, there are several factors which have limited their coverage. These include high fees (a general practitioner charges Rp 3,000-6,000 and a specialist charges Rp 8,000-15,000, which is roughly 2 to 10 times the minimum daily wage of an unskilled worker), the high cost of medication and the uneven distribution of upper-level health facilities, which are mainly located in Central and South Jakarta (PT Hasfarm Kian Konsultan, 1985). During Repelita IV the Government undertook efforts to extend health care facilities throughout Jakarta and to improve the community health care system, giving highest priority to areas with low socio-economic levels, unsafe water and endemic dysentery.

Indonesia's family planning programme, which was launched in 1969, aims at reducing the national crude birth rate from 35.5 to 21 per thousand between 1980 and 1990 (and the growth rate to below 2 per cent per annum). That is likely to be a challenge, given the fact that the percentage of married women practising contraception was 29 per cent in 1980. The level of acceptance has been rising, however, in recent years. During Repelita III a total of 960,000 new acceptors were registered in DKI Jakarta, exceeding the target of 500,000. In addition, there has been growing use of more effective methods of contraception, with the most popular methods currently being the pill (52 per cent) and the IUD (24 per cent). The Government has also advocated the use of condoms, as well as implants and permanent sterilization.

The National Family Planning Co-ordination Board (BKKBN) in DKI Jakarta has attempted to make the public more aware of its programme by expanding coverage at places of work, improving mobile family planning services, promoting neighbourhood involvement and mobilizing religious figures, youth organizations and women's groups (e.g., Operation Laju Bahtera). The theme "A Small Family is Happy Family" is widely publicized through radio, television and newspaper advertisements. In addition, small financial incentives are offered to acceptors through the Family Planning Acceptor Financial Assistance Programme, which extends loans and provides vocational training. Recently, a popular Jakarta amusement park announced that it was granting discounts to permanent participants of the family planning programme, as well as to their two children (The Jakarta Post, 28 January 1987).

Illiteracy continues to be a problem in DKI Jakarta, particularly because it impedes the Government's efforts to establish an ongoing dialogue with the public regarding development issues and goals. In 1980 the illiteracy level of persons over 10 years of age in DKI Jakarta was about 10 per cent in the inner city and 25 per cent on the fringes, with little difference between males and females. The eradication of illiteracy has proceeded slowly, e.g., by less than 1 per cent per annum during 1971-1980 (PT Hasfarm Dian Konsultan, 1985).

During Repelita III education progressed relatively rapidly in DKI Jakarta. In primary school, pupils accepted during the five-year period increased by one third. The number of students enrolled in junior high school increased by 28 per cent and those in senior high school by 51 per cent. In 1980 there was a total of nearly 1 million primary school pupils, who constituted 94 per cent of children of primary school age. There are currently enough facilities in DKI Jakarta for the Government to embark on a system of compulsory education. In the short-term, however, as many as one third of primary students will have to attend classes under a two-shift system. The pupil-teacher ratio remains high (60:1) and the Government desires to reduce it to 40:1.

The higher levels of education in DKI Jakarta have a restricted capacity to absorb students from lower levels. Indeed, there were about one quarter as many junior high as primary students and about one third as many senior as junior high school students (PT Hasfarm Dian Konsultan). Moreover, the insufficient number of places in secondary and higher educational institutions has not been matched by an increase in vocational education.

G. Transport

Private transport has increased faster than any other transport mode in DKI Jakarta and has created considerable demand for the expansion of roads and parking facilities, which require large

investments of capital and land. Indeed, privately owned motor vehicles increased at an average annual rate of nearly 15 per cent during the 1970s - more than three and a half times the rate of population growth - and now account for 85 per cent of total vehicles (Pemerintah Daerah Khusus Ibukota Jakarta, 1984). As a result, 45 per cent of road arteries have average rush-hour speeds below 25 kilometres per hour. In an effort to slow the growth of private automobiles, an administrative regulation from the Central Government encouraged the production of commercial vehicles (e.g., mini-buses and pick-up trucks) instead of private cars. However, because the trade vehicles were relatively cheap, they were purchased for use as private passenger vehicles. The Master Plan estimated that the number of private motorized vehicles (automobiles and motorcycles) would increase from 846,100 in 1982 to 2,160,000 by 2005 - an increase of 255 per cent.

Whereas demand by higher income households is met by private transport, demand by the majority (60 per cent) of Jakarta households is met by public transport. Bus transportation remains the major public transportation mode. As of 1982 Jakarta's bus fleet consisted of 90 double decker buses, 1,280 regular buses, 1,870 minibuses and 1,760 microlets. A major problem is the fact that the fleet is old, with approximately 40 per cent of buses off the road at any given time. Fares are kept low because of a fuel subsidy from the Central Government. The private sector has been withdrawing from the system in recent years because of lack of profitability. (Some buses operate under a system whereby the bus operator in effect rents the bus on a daily basis, getting to keep the receipts above a certain level.) The number of person trips at peak hours was projected to rise from 1,130,000 in 1982 to 2,522,000 in 2005. However, the proportion of trips made by public carriers was projected to decline from 52 to 30 per cent over the same period (Pemerintah Daerah Khusus Ibukota Jakarta, 1984).

Whereas the 1965-1985 Master Plan predicted that trains would become the major public transportation mode, trains were responding to only 1-2 per cent of public transport needs as of 1985. Moreover, tracks on all lines except Jakarta-Bogor are too old to permit high-speed trains. By the 1990s, the Government expects that railways will capture 20-30 per cent of ridership in the Jabotabek region. A train system that will run east and west is planned to be constructed with financial assistance from the Government of Japan. In its Indonesia's Urban Services Sector Report (1984), the World Bank suggested that extensive rail investments might not be the most cost-effective means of dealing with Jakarta's transport problems. It suggested making only a small investment to improve service on the principal line into Jakarta, and then monitoring changes in ridership before committing more substantial investments.

In regard to policy measures designed to improve public transport, the Government has created segregated bus lanes. In addition, over the years, the Jakarta authorities have sought to eliminate non-motorized traffic and have banned betjaks (three-wheeled bicycle rickshaws) from major portions of Jakarta. Bajajas, three-wheel motorcycle rickshaws are scheduled to gradually take over betjak activities. Whereas there were several hundred thousand betjaks in the late 1960s, there were only about 25,000 in 1984. Although the Government's policy to eliminate betjaks eased traffic congestion somewhat, it created transport shortages in densely settled, poorer areas that were not served by other forms of public transport. Indeed, according to one survey, the average betjak provided inexpensive transport for up to 60 persons daily; recently, the Government has been considering legalizing some 7,000 betjaks for use in the kampungs.

In regard to development of Jakarta's road network, road development in the past was usually the result of urban expansion. There was a massive road building programme over the past decade, however, and Jakarta is now generally well served. The current road network is north-south oriented, with a scarcity of main connector roads. The DKI Provincial Government has been reviewing the entire road system in order to plan for efficient and optimal use and to reduce traffic congestion. In the first years of Repelita IV the Government's policy was to extend the road network to the east and west (where development had been retarded by poor road access), to improve the quality of existing roads, to construct flyovers and railway bridges and to install a computerized traffic control system. Not building roads has also been a policy instrument in DKI Jakarta. Indeed, one of the chief means of implementing the Jabotabek plan was to avoid constructing both new arterial roads throughout the coastal plain and provincial or urban arterial roads in the south.

V. RESOURCES AND MANAGEMENT

A. Public investment

Among recurrent development expenditures in DKI Jakarta, the highest were for the salaries of civil servants (45-55 per cent of the total), followed by goods and maintenance expenses. Among development expenditures, social development received 50-65 per cent of the total during 1976/77-1981/82, followed by expenditure on economic development, general administration and loan repayments (PT Hasfarm Dian Konsultan, 1985). Jakarta has run a generally large development budget surplus, with the surplus under both routine and development budgets averaging 22 per cent annually during 1976/77-1981/82, a phenomenon that has been attributed to difficulties in obtaining land for development projects.

B. Resource generation

Development revenues in DKI Jakarta come from savings from routine revenues, from the World Bank, from the Central Government - both in the form of grants and subsidies allocated for specific projects. Revenues generated in the region are relatively small when compared with taxes, e.g., income taxes, levied by the Central Government. The largest regional tax in DKI Jakarta is the tax on the transfer of ownership of motorized vehicles (which constituted 37 per cent of total regional revenue in 1981/82), followed by the tax on registration of vehicles (17 per cent between 1976/77 and 1981/82), the development tax on hotels and restaurants (4-6 per cent) and the show/amusement tax, e.g., on cinemas and massage parlours (5 per cent). The tax on gambling, which had been a major source of revenue, was abolished in 1980.

Although the property tax is the most important source of revenue in many developing country mega-cities, in Jakarta it has not been an important local source of revenue and has accounted for only about 4 per cent of the total. Inadequate cadastral surveys, poor assessments, low tax rates (a 1 per cent assessment of land is commonly considered normal; Indonesia's rate is only 0.1 per cent) have contributed to the shortfall (Sivaramakrishnan and Green, 1983). Moreover, the property tax is not related to the value, but rather to the physical dimensions of properties, making it an inelastic source of revenue. Other miscellaneous taxes that contribute less than 1 per cent are the tax on foreigners, the tax on advertisements, and the additional tax on property (which is expected to become an important source of revenue in the future as a result of changes in the national tax law enacted in 1984 (PT Hasfarm Dian Konsultan, 1985).

With few exceptions, there is virtually no direct cost recovery for capital investment in urban services in Indonesia. The general policy has been that, as far as possible, recurrent expenditures are recovered

through user charges but that the initial capital investments are provided to users as a grant (World Bank, 1984). With regard to specific public services, bus transportation is subsidized directly through operating and capital grants to the two government-owned bus companies. The doubling of fares in January 1983 was an important step in reducing subsidies. Power tariffs were increased by 38 per cent in 1983, although much of the benefit of the increase was eroded by devaluation (World Bank, 1984). In regard to water tariffs, guidelines were revised to reduce the monthly minimum consumption base (to 60 litres per capita per day) and to increase the progressivity of charges for consumption above the base. Still, the World Bank estimated that continuation of the present policy would finance less than 20 per cent of annual investments by 1991.

Jakarta is the only city in Indonesia with a special tax on land development. The pajak khusus (special tax) is being extended by the Provincial Government and provides a potentially important means of financing urban infrastructure. The tax consists of two parts. Part one is in the form of a fixed charge whereby 60 per cent of the cost of improvement is divided between the beneficiaries according to the length of road frontage. According to the World Bank, it has been fairly successful in recovering costs in the small number of areas of Jakarta where it has been approved (World Bank, 1984). Part two, which has apparently never been implemented, is an explicit tax on "excessive" increase in land prices as a result of betterment.

C. The institutional context

Jakarta's present administrative system is a direct descendant of the Dutch colonial system of administration, which had a powerful vertical structure that reached down to the neighbourhood level. Following Independence there was a reorganization of the governmental apparatus in Indonesia, and Jakarta was given a special provincial status. The Provincial Government, which is headed by a Governor appointed by the President, has an administrative staff, a planning staff (under the responsibility of BAPPEDA, the Regional Development Planning Board) and a Provincial Inspectorate, which implements programmes of the Department of Home Affairs within the region. Public services are delivered by 27 line agencies (Dinas), e.g., Public Works, City Planning, Building Planning and Restoration, Mapping and Land Measurement, Health, Taxation, Cleaning, Housing, Manufacturing, Population, which operate directly under the Provincial Government. Whereas the Provincial Government is responsible for sectoral implementation of the national development plans (Repelita) in the region, several Central Government ministries deliver urban services. The most important of these in Jakarta is the Directorate General of

Housing, Building, Planning and Urban Development (CIPTA Karya) in the Ministry of Public Works, whose range of functions includes water supply and sanitation.

At the next administrative level Jakarta is divided into five mayoral districts (kotamadya), each with an average population of 1,250,000 inhabitants, a mayor appointed by the President, an assembly and a local planning agency. The next level consists of 30 kecamatans, each of which has an average population of 220,000, is headed by a camat appointed by the Governor and is responsible for local security, public health, building control and transportation (Sivaramakrishnan and Green, 1983). The lowest administrative units are the 239 kelurahan. With an average population of about 30,000, the kelurahan are headed by a lurah, an appointed civil servant who is responsible for tax collection, land transactions, and the registration of residents and visitors. The kelurahan supervise refuse collection and community health services and oversee the two informal levels of government, community groups RW and RT, the first of which consists of 150 and the second of about 30 households (Sivaramakrishnan and Green, 1983). These community groups organize co-operative community efforts in local road building, refuse disposal, security and the dissemination of government information. The lurahs and RW and RT heads also form kampung committees to assess local development priorities, organize self-help labour and collect funds for special kampung programmes.

The planning process in DKI Jakarta involves bottom-up planning, starting from kelurahan, sub-Dinases at the mayoral district level, then Dinases and other executive units which plan the draft of overall programmes and projects. These are then analysed by bureaus in the Regional Secretariat, approved by the Governor, evaluated and modified by the People's Assembly, and only then are they implemented.

There is no metropolitan development authority either for Jakarta itself or for the broader Jabotabek (DKI Jakarta, Bogor, Tangerang and Bekasi) region. Instead, Jakarta maintains its institutional relationship with the Botabek region through co-operation between Provincial Government level I of DKI Jakarta and Provincial Government level II of the districts of Bogor, Tangerang and Bekasi. This is an unequal relationship, and the districts find it difficult to stand up to Jakarta in situations of potential conflict. However, the subnational government structure in Indonesia contains several hierarchical levels, and this facilitates a degree of bottom-up planning from the neighbourhood (kelurahan) level upwards.

CONCLUSION

In terms of population size and growth, Jakarta has been a relative latecomer to the ranks of the world's largest cities. With a population of a little more than half a million inhabitants in 1930, Jakarta currently has a population of around 7.5 million and is expected to reach 11-13 million by the year 2000. Although Jakarta's population has experienced a significant decline in fertility and natural increase, it is unlikely that the Government will be able to reach its target of increasing the rate of population growth to under 2 per cent by the year 2000. Moreover, as previously noted, because of large-scale commuting and circular migration, it is clear that Jakarta's functional population is considerably larger than the population enumerated in the most recent census.

In regard to migration, Jakarta's experience with a "closed" city policy in the early 1970s suggests that regulations prohibiting new migrants from settling in major cities are likely to be ineffective and even counterproductive, probably leading to an increasing proportion of illegal residents. The attitude of the Jakarta authorities towards temporary migration has softened somewhat in recent years. Although many of the restrictive regulations remain in force, the Government has gone so far as to initiate a study of the location of temporary migrants within the city -- with a view towards providing inexpensive barracks-type accommodations (Hugo, 1985). Still, there is lingering concern that such policies could lead to an escalation in temporary migration.

Over the past decade, the Jakarta authorities have achieved many notable successes in expanding the coverage of urban services. In line with the Government's basic human needs approach adopted beginning in the 1970s, important progress has been made in the expansion of health and family planning services, as well as primary education. Unlike many developing country mega-cities, where efforts were devoted mainly to costly public housing schemes, Jakarta's Kampung Improvement Programme (KIP) was one of the earliest approaches to low-income housing that adopted appropriate standards, with a view towards improving the lot of the largest number of households. Indeed, under KIP, all of Jakarta's worst kampungs - housing more than three million inhabitants - have been improved. Guided Land Development (GLD), although still in its infancy, represents an interesting approach to land development, albeit perhaps too little, too late, in that it was adopted after much of the land in the metropolitan area was purchased by speculators.

Despite this progress, Jakarta has faced a new set of problems in recent years. With the dramatic drop in oil revenues, there are fewer resources for urban development programmes. Hence, an important current policy issue is whether the Government will be willing to take strong

steps to recover a significant proportion of investment costs or whether it will supply fewer services at a highly subsidized cost. In addition, a variety of severe environmental problems - e.g., sea water intrusion as far as the central city, severe water pollution both from urban and agricultural users, and degradation of prime agricultural land through urban expansion, have gone beyond the categories of simple negative externalities and now threaten the very sustainability of development (Douglass, 1989).

Part of the explanation for this environmental deterioration has been the Government's inability to control development. Essentially, the Government has maintained a soft approach to development over the years, adopting strategies and plans designed to guide development to particular locations. Unfortunately, because none of these plans ever became law, they have served mainly as blueprints.

Although the Jabotabek study was the first to acknowledge the existence of a metropolitan area larger than the official boundaries of DKI Jakarta, the absence of either a regional authority operating above the provinces or of a central co-ordinating body to plan for the metropolitan region meant that subsequent work was pursued by sectoral planning authorities through their district and provincial offices (Douglass, 1989). Moreover, because the main thrust of the Jabotabek plan was to guide urban industrial expansion towards sub-regional growth poles, emphasis was placed on cities in the three kabupaten on the periphery of the metropolitan area, leaving the elaboration of the plan within DKI Jakarta to the Jakarta government.

A more fundamental explanation is the fact that the development process in Jakarta has been influenced mainly by market forces. Indeed, as Douglass notes, the dilemma is that the major parameters to be guided have not been either contained within Jakarta or subject to substantial manipulation by the spatial allocation of infrastructure in the capital city region (Douglass, 1989). Of far greater importance than explicit spatial policies have been such factors as import substitution and, more recently, export-oriented manufacturing policies, which have worked to polarize manufacturing employment in Jabotabek; highly subsidized public services, which have created a bias in favour of the larger urban centres; the importance of physical proximity to central government officials for obtaining licenses and permits, and so forth.

As for the future, experts are divided in their opinion as to whether governmental policies will succeed in controlling Jakarta's growth and promoting a less concentrated pattern of urbanization, or whether Jakarta will continue to experience rapid growth. The National Urban Development Strategy (NUDS) was fairly optimistic in its assessment, noting that a number of new policies adopted under Repelita IV were likely to reduce Jakarta's predominance. These

included the diversification of agriculture, which was likely to favour job creation outside of Java; the removal of commodity subsidies, which would lessen incentives that favoured city locations; de-regulation of the financial sector, which would lessen locational biases favouring Jakarta (because businesses would not consider day-to-day access to customs and tax officials as important as in the past); reforms in investment licensing, which were likely to lessen dependence on locating in or near Jakarta; and policies that promoted the strengthening of provincial and local governments, which would further reduce investors' preferences for locating in Jakarta (National Urban Development Strategy Project, 1985).

On the other hand, Douglass has argued that there are a number of factors that point to the likelihood of an increasing concentration of population and economic activity around Jakarta. For one thing, there has been an increase in Japanese investment in manufacturing activities in and around Jakarta in recent years. On the negative side, because of the steep fall in the price of oil and other commodities from the outer islands, there is already an apparent contraction in the growth of the national urban system that had been expanding along the inter-island arc of port cities (Douglass, 1988). Also, with the decline in oil prices, there has been a sharp drop in construction and construction-related employment - which has been a major source of non-farm employment in rural areas.

Whereas Indonesia's transmigration programme was a decisive factor in the 1970s and early 1980s in keeping net migration rates between Java and the outer islands in favour of the latter, following the de facto ending of the transmigration programme, the balance appears to have reversed. Indeed, recent data indicate an increasing volume of migration to Java, and particularly to the Jakarta area (Douglass, 1988). As for push factors operating in Java, the island is expected to experience rapid growth, resulting in the addition of 1.5 to 2 million new agricultural households - in an island that has an average farm size of half a hectare. In addition, the widespread shedding of labour from rice production is contributing to the growth in landless rural households, whereas the rising level of education among the rural population is likely to lead to decreased satisfaction with rural life. Finally, after a number of years of commuting or circular migration to the urban area, many migrants are likely to develop more permanent urban roots, visiting their home villages less frequently and for shorter periods. Whereas some of the new arrivals will settle in established urban kampungs and can be provided with services under expanded existing programmes, millions will have to settle on the periphery in areas that are not yet planned.

Notes

1/ In the census definition, a person must live in a place for six months to classify as resident; hence migrants moving to urban areas for less than six months are classified as rural.

2/ Laws require all organizations in Indonesia, whether religious or secular, to adhere to the state creed of Pancasila as their sole ideology. A compromise reached by Islamic and secular leaders at the time of Independence, Pancasila, or five principles, calls for belief in one God, humanitarian and civilized society, national unity, representative democracy, and social justice.

3/ During 1979-1983 roads and bridges accounted for 46 per cent of total KIP expenditure in Jakarta; water facilities accounted for 14 per cent, footpaths and schools each accounted for 13 per cent, and main drainage for 11 per cent. In contrast, health services accounted for 2 per cent of total expenditure, sanitation for 1 per cent, and solid waste for only 0.2 per cent (World Bank, 1984).

REFERENCES AND SELECTED SOURCES

Government documents

Biro Pusat Statistik (1984). Proyeksi Penduduk Indonesia per Propins, 1980-2000.

Jabotabek Advisory Team Services (n.d.). Recommendations for improvements to planning and development process for urban betterment. Technical Report No. 1.

Jakarta City Government, Regional Development Planning Board (1984). Jakarta 1984.

Jakarta Statistical Office (1983). Statistical Year Book of Jakarta. Ministry of Public Works, Directorate of Urban and Regional Planning(1981). Jabotabek Metropolitan Development Plan: Executive Summary.

Pemerintah Daerah Khusus Ibukota Jakarta (1984). Perda No. 5.

Perum Perumnas (1984). Lingkungan Rumah Susun. Kebun Kacang - Jakarta.

Sembiring, R. Mantas, ed. (1984). A Thousand Faces of Jakarta.

Other sources

Asian Development Bank (1984). Indonesia Urban Sector Profile.

Clarke, Giles T.R. (1985). Jakarta, Indonesia: Planning to solve urban conflicts. In John P. Lea and John M. Courtney, eds., Studies in the Planning and Management of Asian Cities. Washington, D.C.: World Bank.

Devas, Nick (1981). Indonesia's Kampung Improvement Program: an evaluative case study, Ekistics, 286, (Jan./Feb.), pp. 19-36.

Douglass, Mike (1988). Land use and the environmental sustainability of the extended metropolis: Jabotabek and the Jabopunjur Corridor. Paper prepared for the Conference on the Extended Metropolis in Asia, East-West Center Environment and Policy Institute, Honolulu, Hawaii.

____ (1989). The environmental sustainability of development: coordination, incentives and political will in land use planning for the Jakarta Metropolitan Region. Department of Urban and Regional Planning, University of Hawaii.

- Hamer, Andrew M, Andrew D. Steer and David G. Williams (1986). Indonesia: The Challenge of Urbanization. World Bank Staff Working Paper No. 787.
- Hugo, Graeme (1978). New conceptual approaches to migration in the context of urbanization: a discussion based on the Indonesian experience. Paper prepared for a Seminar on New Conceptual Approaches to Migration in the Context of Urbanization, Bellagio, Italy.
- _____. (1982). Circular migration in Indonesia. Population and Development Review, vol. 8, No. 1 (March), pp. 59-84.
- _____. (1985). Some policy aspects of the relationships between internal migration and regional development in less developed countries with particular reference to Indonesia. Discussion Paper No. 9. Centre for Development Studies, The Flinders University of South Australia.
- _____. (1988). Population movement in Indonesia since 1971, Tijdschrift voor Economische en Sociale Geografie, vol. 88, No. 4.
- Hugo, Graeme and Sri Pamoedjo Raharjo. Migration, urbanisation and population redistribution in Indonesia - what the results of the 1985 intercensal survey (SUPAS) show. mimeo.
- Jellinek, L. (1979). The pondok system and circular migration. In The Life of the Poor in Indonesian Cities. Center of Southeast Asian Studies, Monash University.
- _____. (n.d.). The rehousing of Kebun Kacang. mimeo.
- Jones, Gavin W. (1984). Links between urbanization and sectoral shifts in employment in Java, Bulletin of Indonesian Economic Studies, vol. XX, No. 3 (December), pp. 120-157.
- National Urban Development Strategy Project (1985). NUDS Final Report.
- PT Hasfarm Dian Konsultan (1985). Formulation of economic and socio-cultural development strategy, DKI Jakarta, 1985-2005, vol. I. Data Compilation.
- Sethuraman, S.V. (1976). Jakarta: Urban Development and Employment. Geneva, International Labour Office.
- Simmons, Alan B. (1979). Slowing metropolitan city growth in Asia: policies, programmes and results, Population and Development Review, vol. 5, No. 1 (March), pp. 87-104.

Sivaramakrishnan, K.C. and Leslie Green (1986). Metropolitan Management: The Asian Experience. Oxford University Press.

The Economist Intelligence Unit (1986). Country Profile: Indonesia, 1986-1987. London.

University of Indonesia (1956). Djakarta: a study of urbanization. In The Social Implications of Industrialization and Urbanization. Calcutta.

United Nations (1987). The Prospects of World Urbanization Revised as of 1984-85. Population Studies No. 101. Sales No. E.87.XIII.3.

World Bank (1984). Indonesia: Urban Services Sector Report. Washington.