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Indonesia: Urban Services Sector Report

(In Two Volumes) Volume I Main Report

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CURRENCY EQUIVALENTS

Currency Unit	=	Rupiah (Rp)
US $1.00	=	Rp 970 (Since March 1983)
US $1.00	=	Rp 625 (Nov. 1978 - March 1983)
US $1.00	=	Rp 450 (Before November 1978)

FISCAL YEAR

April 1 to March 31

FOREWORD

This report was prepared by a team consisting of Andrew Steer (team leader) and David Williams, with Jaime Biderman (housing), Brian Binder (consultant, urban finance), John Taylor (consultant, administration and manpower development), Wim Stolte (consultant, infrastructure), Beatrijs Muller (public transport), Fitz Ford (housing), and Kreszentia Duer (manpower development). Lenny Siagian assisted in the preparation of the report in Jakarta and was supported by Grace Medrano and Elizabeth Hellman in Washington.

The team was greatly assisted by Indonesian officials in the Departments of Public Works, Home Affairs and Finance, in BAPPENAS, and in the National Housing Authority (PERUMNAS) and the National Housing Bank (BTN). In particular, the mission would like to extend its thanks to Ir Sunarjono Danudjo (Director General, Cipta Karya), Hendropranoto Suselo (Director of Programming, Cipta Karya), Sugiarso Padmopranoto (Director, Binakota), and Dr. J. B. Kristiadi (Director, National Wealth, Department of Finance), and to their staff. In addition, mission members were greatly helped by local government officials in DKI Jakarta, Surabaya (East Java), Malang (East Java), Cirebon (West Java), Bekasi (West Java), Bogor (West Java), Pekanbaru (Riau), Bukittinggi (West Sumatera), Padang (West Sumatera), and Ambon (Maluku).

A draft version of the report was discussed with the Indonesian Government in March 1984 by a mission consisting of Messrs. Steer, Williams and Biderman. Messrs. Jeurling, Ford, Khalilzadeh-Shirazi, and Kilby of the Bank's Resident Mission in Indonesia also participated in these discussions.

ABSTRACT

Urbanization in Indonesia has accelerated over the last decade and, for a number of economic and social reasons, is not expected to slow down before the end of the century. Despite good progress in the provision of urban services over the last decade, there remain huge service deficiencies even for the existing population, let alone for the 40 million new urban dwellers who will arrive in the 1980s and 1990s. However, at a time when investment needs are greatest, financial resources available to the Government are much less then earlier anticipated and are certain to grow less rapidly than the investment requirements. This Report describes and endorses the Government's overall strategy towards the provision of urban services in the coming Five-Year Plan period (1984/85-1989/90) and suggests ways in which the program might be implemented and financed. Chapter 1 presents a profile of Indonesia's urban areas, describing recent trends in urbanization and economic activity, poverty alleviation and access to services in urban and rural areas, and discussing their implications for an urban strategy. Chapter 2 reviews recent progress in the provision of urban services and, in the light of the discussion in Chapter 1, assesses the size and composition of an appropriate investment program for the coming five-year development plan for the major urban services (water supply, sanitation, Kampung improvement, urban roads, public transport and housing). Chapter 3 discusses questions of administration and manpower for each of the major services and suggests how the process of implementation may have to evolve in the coming years. Finally, Chapters 4 and 5 explore how the expanded program might be financed in view of the slow growth of central government resources; Chapter 4 assesses the scope for increased local government taxation and borrowing, and Chapter 5 discusses the potential and affordability of increased cost recovery.

INDONESIA
URBAN SERVICES SECTOR REPORT

TABLE OF CONTENTS

VOLUME I - MAIN REPORT

List of Text Tables

ABBREVIATIONS, ACRONYMS AND INDONESIAN WORDS

ABT	-	(Anggaran Biaya Tambahan) = the supplementary budget
ADB	-	Asian Development Bank
Dt. Bangdes	-	(Bangunan Desa) = Directorate of Village Development
BAPPEDA	-	(Badan Perancanaan Pembangunan Daerah) Regional Development Planning Board
BAPPENAS	-	(Badan Perancanaan Pembangunan Nasional) National Planning Authority
BBN	-	Vehicle transfer fee
Bina Marga	-	Directorate General of Roads
BNA	-	Basic Needs Approach
BPAM	-	Interim water supply authorities
BPS	-	(Biro Pusat Statistik) = Central Statistics Office
BTN	-	(Bank Tabungan Negera) = National Housing Bank
Cibotabek Study	-	The cities of Cirebon, Bogor, Tangerang and Bekasi
Dati I, II	-	(Daerah Tingkat I, II) = Local Government Administration at Provincial and Local Level
Departemen	-	Department (or Ministry)
-"- Dalam Negeri	-	Department of Home Affairs
-"- Keuangan	-	Department of Finance
-"- Perhubungan	-	Department of Communications
-"- P.U.	-	Department of Public Works
Desa	-	Village, the smallest unit of administration
Dinas Kebersihan	-	City Cleansing Unit (Solid Waste Management)
Dinas Kebakaran	-	Fire Service Section
Dinas Kesehatan	-	Health Service Section
DIP	-	(Daftar Islan Proyek) = Authorization for Development Expenditure
D.J.	-	Director or Directorate General
D.J. Agraria	-	Directorate General of Agrarian Affairs
D.J. Cipta Karya	-	Directorate General of Housing, Building and Planning
D.J. Pajak	-	Directorate General for Taxation
D.J. Pengairan	-	Directorate General for Irrigation
D.J. PUOD	-	(Pemerintah Umum Otonomi Daerah) Directorate General for Administration of Autonomous Regions
D.J. Bangda	-	Directorate General for Regional Development
DKI	-	(Daerah Khusus Ibukota) = Special District of Jakarta
DSE	-	Directorate of Sanitary Engineering
Dt. Bina Kota	-	Directorate for Guidance on Urban Development

Dt. Cadaster	-	Directorate of Land Registration
Dt. PERUMAHAN	-	Directorate of Housing
Dt. Tata Kota Dan Daerah	-	Directorate for City and Regional Planning
GOI	-	Government of Indonesia
Gotong-Royong	-	Community Work
ha	-	hectare
IKK	-	(Ibukota Kecamatan) = Water supply projects for small settlements
INPRES	-	(Instruksi Presiden) = Presidential Instruction In text usually refers to title of public works program (Bantuan INPRES)
Inpres Desa	-	Village development program
Inpres Pasar	-	Market Development Program
IPEDA	-	Real estate tax (levied on the user)
Jabotabek	-	The administrations of Jakarta, Bogor, Tangerang and Bekasi - the Jakarta metropolitan area
Kabupaten	-	Administrative level 2 of local government, Regency headed by the Bupati
Kampung	-	Village, also urban neighborhood
KANWIL	-	(Kantor Wilyah) = provincial-level offices of central ministries
Kecamatan	-	Administrative level 3, District headed by the Camat
Keluarga	-	Family
Kelurahan	-	Administrative level 4, Sub-District headed by the Lurah
KEPRES 10	-	'crash program' grants
KIP	-	Kampung Improvement Program
Kotamadya	-	City or Municipality, also administrative level 2 of local government, headed by the Mayor (Walikota)
LKMD	-	(Lembaga Kemajuan Masyarakat Desa) = village participation associations
Lingkungan	-	Neighborhood
lps	-	Liters per second
m	-	Meter
m^3/sec	-	Cubic meters per second
MCK	-	(Mandi, Cuci, Kakus) = public facility for washing and toilet
MCKK	-	MCK Keluaga = MCK for 5-7 families
PAB	-	(Proyek Air Bersih) = water supply project offices under Cipta Karya, located in the provinces
Pajak khusus	-	Special tax; in Jakarta used as land betterment tax
PDAM	-	(Perusahaan Daerah Air Minum) = local water supply company
Perintis	-	"Stimulus" or "Pioneering" Program
PERUMNAS	-	(Perumahan Nasional) = National Housing Authority
PJKA	-	National Railway Company
PLN	-	National Electricity Company
PMP	-	Equity contributions to public utilities
Pondok	-	Boarding house
PPBS	-	Planning, Programming, Budgeting System
Propinsi	-	Province. Administrative level 1 of local government
PPD	-	Government-owned bus company operating in Jakarta

P.N. Damri	-	Government-owned bus company operating in cities outside Jakarta
PUSDIKLAT	-	Central Educational and Training Agencies in Government Departments
P_2LPK	-	The provincial-level offices of Cipta Karya's Kampung Improvement Program
RDI	-	Government (domestic) loan
REPELITA	-	Five Year Development Plan (Recana Pembangunan Lima Tahun). REPELITA III: April 1979-March 1984. REPELITA IV: April 1984-March 1989
RT	-	(Rukan Tetangga) = Community head or neighborhood group of about 150 families
RW	-	(Rukan Warga) = Head of neighborhood group of about 3-5 RT
SDO	-	(Subsidi Daerah Otonom) = Central Government subsidy for local government administrative costs
SUSENAS	-	National household income and expenditure survey
Swadaya	-	Self-help
SWP3D	-	Motorized vehicle tax
Tingkat I and II	-	Levels 1 and 2. Refers to central government administration at provincial and local levels
UNEP	-	United Nations Environmental Programme
UNICEF	-	United Nations Children's Fund
W.R. Supratman	-	A kampung improvement program in Surabaya

INTRODUCTION

This study was initiated because of three broad concerns. First, recent evidence suggests that the rate of urbanization in Indonesia has accelerated--contrary to early expectations--with important implications for the investment program in urban services for the coming five-year plan period (REPELITA IV; 1984/5-1988/9). Second, recent developments in the international oil market imply that financial resources available to the central government--which finances about three quarters of all investment in urban services--are lower than anticipated and are likely to grow much slower than the requirements for new investment in urban services. Finally, severe shortages of skilled manpower and an administrative structure that was originally designed for a much smaller centralized program are serious constraints on the continued expansion of urban services and must be addressed urgently. These are also very much the concerns of the Government of Indonesia, and this report was prepared in close cooperation with government officials from several departments.

This report does not attempt to suggest an overall urban strategy for Indonesia; an exercise to formulate such a strategy is currently being undertaken by the government. Some of these broader issues of regional and urban development are raised in the World Bank's 1984 Economic Report on Indonesia: "Policies and Prospects for Economic Growth and Transformation (Report No. 5066-IND, April 26, 1984)." The present report is more narrowly focussed on the prospects for urban growth, the consequent needs for urban services, and suggested administrative and financial mechanisms to provide these services.

The report contains two volumes. Volume one is organized as follows. Chapter 1 presents a profile of Indonesia's urban areas, describing recent trends in urbanization and economic activity, poverty alleviation and access to services in urban and rural areas, and discussing their implications for an urban strategy. Chapter 2 reviews recent progress in the provision of urban services and, in the light of the discussion in Chapter 1, assesses the size and composition of an appropriate investment program for the coming five-year development plan for the major urban services (water supply, sanitation, Kampung improvement, urban roads, public transport and housing). Chapter 3 discusses questions of administration and manpower for each of the major services and suggests how the process of implementation may have to evolve in the coming years. Finally, Chapters 4 and 5 explore how the expanded program might be financed in view of the slow growth of central government resources; Chapter 4 assesses the scope for increased local government taxation and borrowing, and Chapter 5 discusses the potential and affordability of increased cost recovery. Volume Two contains four statistical and technical annexes corresponding to the four areas covered in volume one.

EXECUTIVE SUMMARY

1. Urbanization in Indonesia has accelerated over the last decade, contrary to earlier projections. A substantial rise in the rate of migration from rural to urban areas has more than offset declining rates of natural increase in urban areas. For a number of economic and social reasons, urban areas are expected to continue growing at least as fast as at present. While the urban population rose by almost 10 million in the 1970s, it is likely to grow by 16 million in the 1980s and another 23 million in the 1990s. Urban population growth is therefore expected to account for half of the total (rural plus urban) population growth in the present decade and two thirds of the total population increase in the 1990s. Large cities are, on the whole, growing faster than middle-sized cities, and the coming years will see a dramatic increase in the population of "metropolitan" areas. In particular the population of Greater Jakarta will more than double before the year 2000, when it will probably stand at about 20 million.

2. These trends have serious implications for the required investment in basic urban services--water supply, sanitation, roads, public transport and housing--for the coming five-year plan, REPELITA IV (1984-1989). In addition to the needs of the existing urban population (many of whom still have little or no access even to basic services) and the service needs of the 40 million new urban residents arriving in this decade and the next, major investments will be required to combat a new generation of environmental problems associated with rapid growth and crowding in metropolitan areas. It is estimated that total investment in urban services in the next five years must be more than double the level in REPELITA III. While this report justifiably highlights the substantial improvements in urban services during REPELITA III, attention is also given to the deficiencies that still exist and to the urgent actions needed to address them. Failure to adequately deal with the impending problems arising from the rapid and largely inevitable urban growth could have very serious consequences for the social and economic welfare of the country as a whole.

3. Progress in the provision of urban services has been impressive during REPELITA III. The emphasis on "basic needs" and standardized replicable projects mainly financed by grants from the central government and implemented by central agencies has been broadly appropriate in the light of relatively plentiful financial resources at the central government level and the relatively small size of the overall program. However, the size and spread of the required program for the coming years argues strongly in favor of a shift in the pattern of finance away from a central grant system towards increased local financial responsibility and cost recovery, and continued devolution of responsibilities for coordination to the city level. This is recognised by the government, which is committed to raising the level of financial and administrative responsibility at the local level. As Indonesia embarks upon REPELITA IV, the government plans to accelerate this process.

I. A PROFILE OF URBAN AREAS

4. Urbanization - Recent Trends. About a quarter of Indonesia's population is now defined as urban, still a fairly modest proportion in comparison with the average for middle income countries (45%) but well above the average for low income countries (17%). Java accounts for a higher proportion of the urban population (70%) than would be expected from the total population distribution (62%). A number of statistical problems, including a new offical census definition of urban areas and dramatic boundary changes for some of Indonesia's municipalities (kotamadya), make it difficult to assess accurately the growth of Indonesia's urban population but it appears to have been at least 4% per year in the 1970s; this represents an acceleration of urbanization over the 3.6% average annual growth of the 1960s. The growth of urban population was particularly rapid in Kalimantan (6.4%), Sumatra (5.1%) and Sulawesi (5.1%) and apparently modest in Java (3.0%), although the unusual nature of the urbanization process on Java (para. 6) means that this figure substantially underestimates the true growth. As in many developing countries, the rate of population growth is positively correlated with the size of city. Metropolitan areas have grown particularly rapidly, although much of their growth is on the periphery, outside the formal city boundaries.

5. It is estimated that migration to urban areas rose from 2.2 million in the period 1961-1971 to 5 million between the 1971 and 1980 censuses. Migration accounted for just over half of the total urban increase in the 1970s compared with less than a third in the 1960s. Migration to urban areas within the same province appears to be more important than migration across province boundaries for all major cities except for Jakarta. Half of all migrants who move to cities in other provinces move to the capital city; the importance of Jakarta as a destination for migrants has apparently not diminished despite the introduction in 1970 of an identity card scheme designed to reduce in-migration.

6. Migration to urban areas, particularly in Java, is probably effectively much higher than suggested by official census data. Circular and seasonal migration to urban areas has almost certainly increased substantially over the last decade and now accounts for an important, if unmeasured, aspect of urbanization on Java, making conventional analysis of the urbanization process increasingly irrelevant. Although no serious attempt at measurement has been made, a number of village-level studies have highlighted the importance of temporary migration; all of them conclude that this pattern of mobility has increased dramatically in the 1970s and early 1980s. It is likely that about one sixth of the average urban workforce now consists of temporary migrants not included in official employment figures. It is probable that the effective urban population growth on Java was almost 4% per year over the last decade (rather than 3% derived from census data) and that the effective urban population for the country as a whole has been increasing at 4.5% a year.

7. Urbanization and Employment. The urban labor force grew at 4.7% per year in the 1970s. This was higher than the rate of growth of the urban population as a whole, due to an increasing participation rate in general and to the character of in-migrants in particular. A high proportion of migrants tend to be of working age and most are unaccompanied by dependents. By far the most important motivation for migration is the search for employment, as productive employment generated in rural areas is quite insufficient to absorb the increased labor force.

8. Agriculture declined dramatically as an employer of new entrants to the labor force in the 1970s. Although the sector employed 76% of the rural workforce in 1971, it accounted for only 8.5% of the total increase in rural employment during the decade. In Java agricultural employment hardly rose at all. Thus, while about 6 million children of agricultural households entered the labor force, only about one in nine found a regular job in agriculture. It is these young entrants to the labor force that form the crux of the employment problem in Indonesia today and the key to the urbanization process. It appears that almost half of those who failed to find work in agriculture moved to the cities. Of this number, only one in six found employment in the urban industrial sector, while the remainder had generally no choice but to work in the low productivity, low wage urban service sector, which has now replaced agriculture as the residual "employer of last resort".

9. Income, Poverty and Access to Services. An analysis of income, expenditure and wealth surveys suggests two important developments over the last decade. First, average incomes have risen in real terms substantially, even among lower income groups, and the number of poor people has been reduced both as a percentage of the population and in absolute terms. Second, the reduction of poverty has been much more impressive in urban than in rural areas. By the beginning of the 1980s, urban dwellers were, in material terms, unambiguously better off than those in rural areas 1/. The proportion of the population in poverty in rural areas is estimated to be twice that in urban areas. For Java, the gap between urban and rural is even more marked. Urban dwellers can afford to spend a higher proportion of their incomes on non-necessary consumer durables while enjoying roughly the same nutritional levels as those in rural areas. Poverty incidence in cities in Sumatra, Kalimantan and in Jakarta is less than in cities in other parts of Java and in the Eastern Islands.

10. Real wages are on average higher in urban than in rural areas for three reasons. First, migrants appear to require a wage premium in order to move to urban areas. Second, while rural and urban labor markets are well integrated with each other for similar activities, there appears to be segmentation of labor markets within urban and rural areas, and urban areas tend to have a higher proportion of relatively highly paid activities. Finally, urban real wages tend to be higher than in rural areas because on average urban dwellers are better educated and healthier.

1/ After allowing for different price levels in urban and rural areas.

11. As in most countries, educational opportunities are greater in urban than in rural areas. While primary education is now virtually universal, rural children tend to begin school later and have a higher drop-out rate. At higher levels of education the gap is more marked; 27% of urban inhabitants have received education beyond the primary level compared with less than 6% in rural areas. The level of education of migrants to urban areas is much higher than the average in rural areas and even higher than the average in urban areas. Health services are generally more accessible and of higher quality in urban than in rural areas; urban dwellers visit formal medical facilities about twice as often as rural dwellers. However, the overall incidence of sickness is about the same in urban and rural areas, with urban areas exibiting a higher proportion of diseases associated with social dislocation and crowding. The incidence of disease in urban kampungs has been found to be strongly related to levels of income and education and access to clean water and sanitary facilities. About half of urban households have electric power in their homes compared with only 5% of rural households.

12. Urbanization in the Coming Years. Despite an expected decline in the growth of Indonesia's population as a whole--from 2.33% per year in the 1970s to 1.78% in the 1990s--it is unlikely that the growth of the urban population will fall below the current 4% per year, and it may accelerate. There are three reasons for this outlook. First, further labor-saving advances in agriculture are expected in this decade and the next and, despite continued impressive government spending in the sector, agricultural employment in Java may actually decline in the coming years; this stands in sharp and serious contrast to the one million new entrants to the labor force in rural Java each year. Second, these new labor force entrants will be better educated than ever before--there are currently about 34 million students attending schools and colleges compared with 15 million in 1970--and experience suggests that educated young people are less likely to be satisfied with life in rural areas. Third, it is probable that many seasonal and circular migrants will settle in the cities on a permanent basis; many itinerant urban dwellers who until now have been fundamentally rural in outlook and loyalties are now developing more permanent urban roots.

13. Implications for an Urban Strategy. This report does not attempt to suggest an overall urban strategy for Indonesia; an exercise to formulate a National Urban Development Strategy (NUDS) is currently being undertaken by the government and supported by the UNDP. However, there are some general implications of the trends discussed above for government policy towards the provision of urban services. First, continued rapid growth in urban areas implies the need for a high level of investment in urban services both to cater for the backlog of unserviced areas and to provide services for the newcomers to urban areas in the 1980s and 1990s. Some of the new arrivals will settle in established urban kampungs and can be catered for under expanded existing programs. Millions of others, however, will settle on the periphery of towns, in areas that are not yet planned and are currently only semi-urban in character. The nature and organization of investments on the edges of cities--including guided land development and the creation of satellite towns for industry and residence--are different to those of

existing urban programs. The need for these investments is urgent since the unit costs of providing services in peripheral areas rises very rapidly over time. Major investments will also be required in metropolitan areas to address a new generation of problems associated with crowding and pollution; these include depletion and contamination of ground water, and dangerously unhygenic conditions caused by inadequate disposal of human and solid waste.

14. Second, the level and pattern of urban growth is not independent of government investment, pricing and regulatory policies. For example, on average, real incomes and the level of access to social and physical services are higher in urban than in rural areas, and many of these services are highly subsidized by the government, making life in the cities even more attractive. It is desirable that prices of publicly provided services should be set closer to their true economic costs (including costs of congestion and diseconomies of agglomeration). There is probably more scope for government policy in influencing the pattern of urbanization rather than its overall level. In this regard it is important that large cities are not made more attractive than the middle-sized and small cities which are growing relatively slowly.

II. URBAN SERVICES - PROGRESS AND PROSPECTS

15. Total investment by all levels of government in urban services (water supply, sanitation, urban roads, public transport, etc.) has averaged about Rp 285 billion a year (1982 prices) during REPELITA III, equivalent to 0.55% of GDP or Rp 7,700 ($11) per urban resident. It is of course very difficult to define an appropriate target for public sector involvement in, and expenditure on, urban services. But there is no doubt that even for the present urban population, let alone for the 1.6 million new urban residents expected each year during REPELITA IV, that total spending on these services must be increased.

Urban Water Supply

16. Remarkable progress has been made in the last few years in providing clean water to urban areas. Between 1980 and 1984, the proportion of urban dwellers with access to reasonably clean water (piped water or pump) will apparently have increased from about 35% to 47%. An additional 700,000 million families or 3.8 million individuals have been given access to clean water during this short period--an impressive achievement.

17. This achievement is the result of a major expansion in the government's water supply program at the beginning of REPELITA III. A "Basic Needs Approach" (BNA) was established for cities and towns above 20,000, whereby a target of 60% of the population would be served with an average of 60 liters per capita per day by 1984. Piped water has been introduced to 461 towns and cities according to this approach and total production capacity raised from 20,000 lps to 35,000 lps during the REPELITA III period. For smaller sub-district centers (IKKs) another program has been established emphasizing simple standards and modest services; by April 1984, projects had started in over 400 towns. In terms of production capacity, the REPELITA III target was met comfortably, while completion of piped distribution systems was sometimes delayed for a number of institutional and financial reasons.

18. Water Supply - Issues for REPELITA IV. There are three main issues to be addressed in formulating a sector strategy for REPELITA IV. First, it is important that a framework be established for allocating central funds among the many towns and cities receiving central government assistance. Per capita investment of central funds currently varies greatly among cities and is uncorrelated with the city size or the ability or willingness of the local authorities to finance part of the investment themselves; allocation is also apparently unrelated to relative water deficiencies. Until now this has not been a serious problem; almost all cities and towns have needed improved facilities and choosing among cities has been secondary to the urgency of getting on with the job. However, for the coming years, with a much expanded program and central funds more scarce, it is important to establish a more systematic framework for allocating funds. In this regard, a simple points system has now been established for the IKK program.

19. Second, attention should be paid to the development of public standpipes. Half of the beneficiaries from the BNA scheme are intended to receive water from standpipes, but there is no financial incentive for the local water companies (PDAMs) to construct standpipes, so relatively few have been constructed. There is a concern that the poor may not be benefitting from the BNA program as intended. It is suggested that central government funds in the future should be more specifically earmarked for reticulation and standpipe construction in poorer areas. A substantial expansion of public or semi-public standpipes in REPELITA IV is highly desirable, preferably in conjunction with a major expansion in the number of small semi-public washhouse/toilets (MCKs). Some further technical matters also need attention including a review of the cost-effectiveness of supplying only a proportion of the urban population to BNA levels, improved methods of water source selection to ensure that least cost sources are obtained, and higher priority placed on operation, leak detection and maintenance.

20. Third, as the domestic demand for water rises, competing (in parts of Java at least) with requirements for irrigation and power generation, it will be necessary to improve water resource planning and river-basin management. The water supply situation in some of the major cities, notably in Greater Jakarta, is likely to become critical due to increased crowding and industrial activity and the associated deterioration of environmental conditions. Intakes of raw water to treatment plants are becoming dangerously polluted; groundwater is being depleted, particularly in the capital city, leading to seepage of saline water into the coastal aquifers in the north; the quality of ground water is deteriorating; and large increases in water are required for flushing drains and canals. These problems are very expensive to solve; a recent study estimated that the total investment requirement in REPELITA IV to ensure adequate water supply for the capital city would amount to over Rp 240 billion (1982 prices), equivalent to almost three quarters of the entire investment in water supply in the first four years of REPELITA III.

21. Investment in Water in REPELITA IV. In the context of the U.N. Water Supply and Sanitation Decade, the government has established targets for 1990. The goal is to ensure access to safe water for 75% of the urban

population by the end of the decade and to extend the IKK program to an additional 2,000 small towns. To achieve these goals, the government has estimated that a total investment of Rp 1.1 trillion will be required. In real terms this would imply that average annual expenditure would be 168% higher than in the first four years of REPELITA III. (These figures refer to total investment costs, not merely those financed by the central government.)

Sanitation and Drainage

22. Health conditions in urban kampungs have been found to be closely related to sanitary conditions. Until now, however, budgetary allocations for sanitation have been small, as the primary effort has appropriately been concentrated on water supply. The government now plans to give a higher priority to environmental sanitation.

23. Drainage. Many of Indonesia's principal cities are located in flat, swampy coastal areas where they suffer from poor drainage, tidal inundation, flash floods and siltation, originating from an increasingly denuded hinterland. Drains are often used for liquid waste disposal, garbage disposal, as a place for washing, bathing and defecating, as a source of water, and for disposal of septic sludge and highly polluted wastes. Without corresponding improvements in human and solid waste management, expenditures on drainage facilities may be wasted. Engineering solutions to offer a high level of flood protection are extremely expensive and unlikely to be affordable on a major scale; therefore, a continuation of the current emphasis on relatively low cost alternatives is appropriate.

24. Human Waste Disposal. Between 75% and 95% of all water-borne pollution in Indonesia's cities is caused by the unsanitary disposal of human waste. Human wastes are disposed of in a variety of ways, most of which would be considered unhygenic in industrialized countries. The government is involved in the provision of communal facilities through the Kampung Improvement Program (KIP) and in pilot sewerage projects in four cities, but total government expenditures have been very small (about Rp 5 billion a year in the last four years). For the coming years there must be two strands to a government strategy in this sector. First, since many of the problems associated with current excreta disposal practices are attitudinal and social rather than technical, it is important that the authorities play a more aggressive role in raising the level of understanding of kampung residents and local contractors concerning the benefits of sanitary disposal of human waste (possibly through television, video and other media). Second, by selective investments, the provision of technical advice, and a careful pricing policy, the government can play a crucial role in stimulating investments in the sector. A key question here is the choice of technology. In a few center city locations, where commercial and hotel users can cross-subsidize poorer beneficiaries, conventional or small-bore piped sewerage systems are appropriate; however, in the vast majority of areas, much cheaper and simpler technologies are required. Large communal toilets are unpopular; either small one-seat units shared by 5-8 families (MCK keluarga), or individual pour-flush toilets connected to single, or preferably double, leaching pits appear to be most appropriate.

25. Solid Waste Disposal. Inappropriate disposal of garbage is a serious health hazard: garbage provides food for vermin and ideal breeding grounds for flies which spread disease, it pollutes waterways as it decomposes, and is a source of odour and visual pollution. In Indonesia, however, probably the most serious problem is caused by the dumping of garbage in drains and canals which serve as the principal sewers in most cities. An open sewer system has much to commend it as biological action takes place easily, but the dumping of garbage blocks the flow to the sea, causing flooding of raw sewerage and resulting in extraordinarily unhealthy conditions. Solid waste management, therefore, often has the highest benefit-to-cost ratio of any investment in environmental sanitation.

26. During REPELITA III, much greater attention has been given to the establishment of solid waste management systems but, starting from a situation of almost complete neglect, the extension of facilities has barely kept up with increases in the urban population. A number of recent pilot projects have identified how solid waste management might be improved, and as a result, the government is now embarking upon a major new initiative. A standard "modular" approach will be adopted. Cities will be divided into areas each containing 30,000 inhabitants, and handcarts, trucks, handling equipment and transfer stations will be provided according to established ratios. It is hoped that this approach will be replicable on a large scale.

27. Investment in Sanitation in REPELITA IV. Within the context of the Water Supply and Sanitation Decade the government plans that 60% of urban households should have access to sanitation facilities by 1990; this contrasts with a coverage estimated by the government at 29% in 1982. For the purposes of REPELITA IV, this target has been translated into more specific goals including raising the coverage of formal solid waste collection to 50% of household garbage (from about 25%) and to 100% of all non-household garbage; increasing access to MCKs to 50% of the urban population (from less than 10%), and pioneering sewerage systems to an additional 10%. These are ambitious and worthy goals requiring a major expansion in investment; average annual investment by all levels of government will have to be over 100% higher in real terms than in REPELITA III.

The Kampung Improvement Program (KIP)

28. The principles of KIP are to insert basic infrastructure into kampungs with minimum disturbance or removal of residents (removals typically average under 2% of all households). Construction standards are very simple and adjusted to fit the conditions in the kampungs. A kampung committee is consulted on priorities and on the layout of services. The KIP components vary according to the conditions in the kampung but can include local roads, footpaths, drainage, water supply, public sanitation facilities, solid waste collection and schools and clinics. Beginning as a local initiative in Jakarta in 1969, KIP has now become a national program extending to 220 cities during REPELITA III.

29. The allocation of funds among the various components of KIP varies greatly. In the early days of the Jakarta KIP, most emphasis was given to roads and associated drains. While roads are now less important, access (mainly in the form of footpaths) and associated drainage is still the cornerstone of the program, accounting for over 80% of KIP Perintis expenditures. Sanitation facilities are given a low priority, due to the inadequacy of the Rp 2.8 million per hectare allocation. Foreign-aided programs, which generally allocate much more than Rp 2.8 million per hectare, tend to give more emphasis to sanitation, but even so it usually accounts for a small proportion of total expenditure.

30. A number of recent longitudinal studies have been undertaken to assess the impact of KIP; in general the assessment is very favorable. Physical improvements have improved the quality of life in poor kampungs and there is generally strong community support for the program. The quality of construction has inevitably been mixed; common problems include poor falls and profiles on drains, resulting in back-up of water and clogging. The program has had a substantial "stimulus" effect on private home improvements, which have been found to be twice as high as in non-improved areas. It has been estimated that every Rp 1 million invested in KIP encourages an additional Rp 1.9 million in private improvements. Land values and rents have risen markedly in KIP areas in comparison with unimproved areas. However there has apparently been surprisingly little out-migration resulting from rent increases.

31. Early proponents of KIP often emphasized its catalytic role on kampung-level economic development; this role of KIP was probably overstated. Some studies have found that the rate of employment in improved kampungs is higher and that average household expenditures have risen more rapidly than in unimproved areas, but other studies would not support this finding. Health conditions have been found to improve where sanitation and water supply components are given priority.

32. In order for KIP to achieve an adequate impact on conditions of sanitation and access in the kampungs, an investment level of Rp 8 million to Rp 12 million per hectare (1982 prices) appears necessary, together with more flexible use of funds according to local conditions, more systematic analysis of site conditions, site planning and improvements in construction quality. There has tended to be a lack of involvement from the local government in the KIP programs which are administered centrally, and frequently a lack of involvement by the community in the selection and planning of KIP components, both resulting in neglect of the kampung infrastructure and in poor maintenance. In view of these concerns the government intends to change its approach to KIP in REPELITA IV; it will increasingly become a partnership program with the local authorities. The government recognizes that in addition to an improved educational campaign for kampung residents, there is a need for the KIP administrators to become more closely involved with the local LKMD in "planning with" the people instead of "planning for" them. Greater involvement of the local government and better coordination and supervision would result if central government subsidies were passed as a consolidated grant to the local government with a requirement for the local government (and, perhaps, the communities) to match the funds from local sources or to take up loans. The central government's role would move increasingly towards guidance of local governments and review and monitoring of performance.

33. As the program moves into medium and smaller size towns, some reorientation of the approach may be appropriate. The concept of KIP was introduced for large crowded cities with reasonable city-wide drainage and sanitation systems which bypassed clearly defined depressed kampung areas. In most other towns, kampung densities are lower and micro-environmental conditions are better. The whole urban area, except for the central market and commercial area, tends to consist of a few, rather similar kampungs. City-wide infrastructure is usually totally inadequate and the most effective way to improve conditions in these kampungs may often be to upgrade the town-wide networks rather than concentrating on micro kampung-specific improvements. For example, kampung level drainage systems may not function due to an inadequate main drainage system. Therefore it is desirable that KIP funds be used flexibly, to include low-level town-wide improvements.

34. KIP Investments in REPELITA IV. At a time of scarce foreign exchange resources and modest domestic economic growth, the Kampung Improvement Program provides an excellent vehicle for government investment, achieving the dual benefits of service provision and employment generation. In addition to continuing the present KIP Perintis program at about its present level (3,000 hectares per year), the government is proposing a special program to improve the environmental conditions in and around markets and to provide additional funds to supplement investments in already improved areas. It is intended that local government funds should supplement central government spending, which will be inadequate to finance the program expansion and to raise the per hectare allocation to the desired level. Total spending on the program (including local government contributions) in REPELITA IV should in real terms be almost double that in REPELITA III.

Urban Transport

35. Urban Roads and Traffic Management. Over the last decade, the number of motor vehicles in Indonesia has increased at an average annual rate of almost 15%. In and around major cities and other densely populated urban areas, the effect of this increase has been particularly acute, and traffic operating conditions are deteriorating. A recent survey of 64 cities and towns by Bina Marga concluded that about three quarters of the main urban network is unstable; about 35% was found to be structurally unstable (i.e., liable to fail in the next five years even with routine maintenance), and 50% geometrically inadequate (i.e., unable to carry the projected REPELITA IV traffic without extensive repeated congestion). This survey did not include Greater Jakarta, where in terms of geometric inadequacy the situation is much worse. Already 40% of routes are operating unsatisfactorily. It is estimated that condititons will deteriorate markedly in the coming years.

36. Urban roads are expensive and could easily absorb all the available funds for all urban services. The government has prepared a preliminary REPELITA IV program that is based upon rough estimates of available funds. It is therefore far from optimal; about 30% of urban roads would still receive inadequate treatment. Even so the annual cost of the proposed five-year

program of about Rp 200 billion (current prices) for direct central government spending and about Rp 340 billion for grants to lower levels of government is roughly 26% higher in real terms than central government expenditure during REPELITA III. These figures exclude expenditures on toll roads.

37. In terms of investment costs, budgetary expenditures on urban roads are overshadowed by investment in urban toll roads, which are the responsibility of Jasa Marga, a state-owned enterprise. It is intended that costs should be fully recovered. Even so, these investments use up scarce foreign exchange and borrowing capacity and should be subject to the same strict appraisal as investments financed directly from government resources. In urban areas where trip lengths are shorter and space more difficult and costly to obtain, toll roads may not accommodate a sufficient number of shorter trips, may be underutilized due to the imposition of tolls, and in general be less efficient than substantial improvement to the normal primary road network. Given that the less costly elements of the urban roads program are constrained by lack of funds, it will be necessary to consistently ensure that the allocation of resources among the various components of the overall program is optimal. It is proposed that an urban transport committee be established comprising BAPPENAS and the Ministries of Public Works, Communications and Home Affairs to review the balance and financing of the transport sector programs. This committee would also be part of the main committee reviewing the overall investment program in metropolitan areas.

38. Public Transport. Urban public transport is mainly provided by the private sector; probably over 95% of all passenger trips are provided by private operators. However, the role of the government is increasing rapidly. This is most evident in Jakarta; while five years ago the state-owned bus company, PPD, operated about 30% of all large buses, by the end of 1983, over 97% of large buses in the capital city were operated directly or indirectly by the state. A state-owned bus company, P.N. Damri, also provides services in five other cities, and services are currently being expanded to an additional three towns. While private companies in the major cities have been unable to remain viable in the face of government controlled low bus fares, the government-owned companies are provided with capital grants and operating subsidies. Central government spending in the sector, principally in the form of capital grants to PPD for Jakarta, has been high in the first four years of REPELITA III, amounting to Rp 160 billion or 15% of total spending on urban services by all levels of government.

39. Investment needs in public transport are great; it will be necessary over the next five years to substantially increase capacity and to raise the quality of service. The sector could easily continue to absorb a rising proportion of government funds allocated to urban services. Where should government involvement stop? Already, several other cities have needs as urgent as those in Jakarta and in a few years this number will multiply. There are also questions of equity involved here; commuters in Jakarta who currently receive subsidized bus transport are generally better off than those in other cities. Given financial constraints, it is essential that a new strategy be devised for REPELITA IV. Rather than provide grant finance exclusively to government-owned transport companies, it is desirable that credit facilities and technical and managerial advice be available to all companies, whether public or private. If fares were allowed to rise to an economic level, much of the capital needed to replace bus fleets could be

obtained on the private market or through suppliers' credits. Government investment could be reduced and concentrated more on improved depot and maintenance facilities and on regulating service with a primary focus on public safety and service efficiency.

40. An individual travelling alone by car uses 17 times as much road space as an individual travelling by bus in Jakarta. Persuading individuals to switch to public transport is the single most important contribution that could be made to Indonesia's urban transport problems. To even maintain the present proportion of commuters using public transport it will be necessary both to make travelling by private car more expensive and inconvenient and to make bus transport more attractive. Currently, however, buses are not perceived to provide a viable alternative for car riders; buses are dirty, in poor repair, dangerous and un-airconditioned. Even though priority should be given to providing transportation for the lower income groups, it is also important that high quality "white collar" bus services provided by the private sector not be discouraged or prohibited by regulations and controlled bus fares as at present. Additional elements of a strategy for improving the quality and efficiency of service may include the provision of special bus lanes, the provision of depot and maintenance facilities, and maintenance training courses.

41. Currently, over 99% of all intra-urban trips on public transport are by road. However, seeing rail as a long-term viable alternative to road transport in the capital region, the government is planning a major overhaul of the Jabotabek rail system. The cost of this program system has not been finalized but is in the region of $1.2 billion (in constant 1982 prices) over the period 1983/84 to 1990/91. In terms of its size, therefore, it would swamp all other government spending on public transport in REPELITA IV. In real terms this amount is equivalent to 670% of total spending on all forms of public transport by all levels of government in the first four years of REPELITA III. Some reservations have been expressed concerning the viability of this investment. The rail system currently carries less than 1% of all intra-urban public transport trips. This is also the case for Jakarta. Under optimistic assumptions this is expected to rise to, at most, 20% of public transport trips in Jakarta in the 1990s, following the investments noted above. Currently the national railway company is incurring heavy subsidies to support its operating costs. In view of the fact that the urban road system is seriously deficient and that considerable improvements to road-based bus and para-transit service are urgently needed (not to mention other municipal infrastructure calls on limited fiscal resources), the appropriateness of extensive rail investments at this time should be questioned. In view of these concerns and the high foreign exchange component of the investment, it is important that each part of the project be subjected to careful appraisal. From the overall picture presented above, it would appear that the major capital investment program for urban rail transport should be deferred or cancelled in view of urgent financial claims of other important services in the urban sector. It would be more prudent to make only a small investment in rail to improve service on the principal line into Jakarta, then monitor the change in ridership, before committing more substantial investments.

Housing and Land Development

42. Housing investment in Indonesia is lower than would generally be considered desirable for a country at Indonesia's level of income. Experience from many countries suggests that expenditures of the order of 5% of GDP are appropriate on housing while in Indonesia only about 3% of GDP is invested in housing. This is partly due to lack of access to long-term credit for housing and to legal issues relating to land titles and collateral.

43. The great bulk of housing in Indonesia--probably over 90%--has been privately constructed (often by the owner-occupant) without access to the formal banking system. However, the public sector is playing an increasingly important role in both financing and constructing houses. In REPELITA IV the National Housing Bank (BTN) is expected to provide mortgage finance for about 300,000 new houses. About half of these houses would be constructed by PERUMNAS, the National Housing Authority. Most of these PERUMNAS houses will be produced at low cost and will be affordable to all except the poorest 20% of households. This represents good progress; the volume of construction and financing of housing and the efficiency of BTN and PERUMNAS have been greatly increased since they began operations in REPELITA II, and the low-cost emphasis of the PERUMNAS program is impressive.

44. Over the coming five-year plan period, there are five broad areas of concern to the government in its efforts to promote housing for urban dwellers. First, the program for REPELITA IV for both PERUMNAS and BTN is ambitious from an administrative and financial standpoint. In order to reach the targets, it will be necessary for PERUMNAS to reduce delays in completing projects and in obtaining land titles, announcing final selling prices, signing mortgages, and transferring completed projects to local governments for maintenance. Under the present pattern of finance, whereby the great bulk of mortgage funds derive from the Ministry of Finance and Bank Indonesia, the program probably will not be feasible. It will be necessary for BTN to mobilize more private financial resources; this will require BTN to gain the confidence of investors and savers by improving its institutional performance. In particular, BTN must move quickly to reduce arrears, refine its project appraisal practices, computerize its operations, and improve its financial management.

45. Second, housing requirements in the coming years will obviously be much greater than can be provided by the public sector. About 1.5 million new dwelling units will be required in urban areas during REPELITA IV just to take care of new urban residents, and many more will be required if the stock of poor existing housing is to be improved. About 8-10% of these units will be constructed by PERUMNAS, and about 18% financed by BTN and another 2% financed by long-term credit from other formal financial institutions. While it is probably not necessary for the proportion of government-built houses to be increased, it is highly desirable that the government increase its efforts to encourage the private sector. This will include a further expansion in the mortgage market, which will in turn require a reduction in the level of subsidies (para 74) and continued efforts to streamline land titling and registration procedures as well as regulations which discourage private production of low-cost housing.

46. Third, the availability of suitable land for the PERUMNAS program is a cause for concern. Due to the high land prices within metropolitan areas and inadequate finance, many PERUMNAS projects have had to be located in cities where demand is relatively weak or in distant and unattractive sites, with resulting difficulties in marketing the units. A financial plan for PERUMNAS must be established soon to ensure that adequate funds are available at an early stage for land purchases.

47. Fourth, it is desirable that, to the extent that interest rate subsidies are to be maintained, they should be increasingly directed towards the lower-income groups. While PERUMNAS' housing is generally well-directed towards middle- and low-income groups, BTN lending for privately constructed housing is mainly directed towards upper-income groups; more than 70% of mortgages for non-PERUMNAS units have been for houses costing more than Rp 5 million, which are affordable only to the most affluent 20% of the population. While it is not inappropriate to finance these houses, it is clearly not necessary nor desirable to provide loans at low (9% p.a.) interest rates, which are made possible by BTN access to the subsidized rediscount facility at Bank Indonesia.

48. Finally, since many of the new arrivals in urban areas in the coming years will have to settle on the periphery of cities, in areas that are not yet planned and are currently only semi-urban in character, it is desirable on grounds of costs and efficiency that early attention be given to the provision of basic infrastructure in these areas. This is the principle of Guided Land Development. The government is embarking upon a pilot project in Jakarta following the recommendations of the Jabotabek study, but a number of administrative and legal difficulties have delayed the start.

REPELITA IV - The Overall Program

49. A compilation of the sectoral investments proposed by implementing agencies indicates a total capital investment in urban services of over Rp 700 billion in each year of REPELITA IV (1982 prices), in comparison with about Rp 280 billion/year over REPELITA III. It now appears that for economic reasons cuts may have to be made in this large program. The report suggests an alternative program of about Rp 530 billion per year (1982 prices). This alternative program retains the emphasis on environmental health, social equity, cost-effective solutions, employment generation, broad regional distribution, cost recovery and city efficiency. The principal cuts suggested are in the urban tollway, bus and rail programs. Financing this reduced size of program would still require a major effort to increase local revenues and expand local borrowing by the whole range of urban centers but especially by the large cities.

III. IMPLEMENTING THE PROGRAM

50. As the provision of urban services has expanded over REPELITA II and III, the systems of administration and finance of the program have evolved to meet the changing needs. On the whole the implementation has been successful, as indicated by the impressive achievements. As the program continues to grow, the systems of implementation must continue to evolve.

51. Two important trends have broadly shaped the system of administration and finance in recent years. First, in order to improve the effectiveness and relevance of the programs, the central government has increasingly attempted to share authority and responsibility for planning and implementating investments with local levels of governments. Second, in an attempt to spread the services as widely and to as many cities as possible within the constraints of limited manpower, a standardized approach to the design and implementation of projects has become necessary; but a standardized approach has also tended to be a centralized approach. A by-product of these two countervailing pressures has been the development in many instances of a complex system of administration, with overlapping responsibilities, multiple channels of funds, and consequently, a lack of flexibility in adjusting investment programs to meet the needs of individual cities. The government is well aware of these issues and is taking a number of important steps to improve the capacities of both central and local implementing agencies.

52. Indonesian law (notably Law 5 of 1974) makes a distinction between those services which are provided directly by central government sectoral departments, which are termed "deconcentrated" services, and those which are (or should be) provided by the regional government, which are termed "decentralized" services. Most elements of urban infrastructure (water supply, local roads, sanitation, solid waste) fall into the latter category. The law also refers to provision of services by a third means, namely "coadministration" (tugas pembantuan or medebewind), defined as "the execution of services by the regional governments under the direction of central government". To a large extent this third approach is a fair description of the means of provision at present of nearly every significant service provided by the regional governments. Most of the urban services noted in the "decentralized" category, are in fact implemented in the style of coadministration.

53. The Question of Decentralization. Indonesia is a unitary state, but the pace and spread of development and the vast size and diversity of the country has meant that more initiative and responsibility for implementation of local services must be devolved to lower levels, but under central guidance on policy and resource allocations. This proposition is universally agreed; but a major area of discussion within the government is how rapidly this process of devolution can proceed. This question is particularly relevant in the case of urban services where the scope for devolution may be greater, since the managerial and technical capacity of the kotamadya, especially the larger ones, is often superior to that of the kabupaten. The discussion has become more urgent since it has become apparent that central government funds are likely to be relatively less important in the financing of urban services than in the past.

54. The view of some government officials is that the devolution to local administrations of the "decentralized" services already identified in the law should be implemented quickly and that the powers must be accompanied by the allocation of grant funds directly to the local level instead of being implemented through the budgets of sectoral Departments. These Departments would provide policy guidance on technical matters, and technical assistance

to local administrations. The view of some sectoral Departments is that, while in agreement with decentralization as a long-term goal, due to weaknesses in local capability to plan and manage, to staffing limitations, and to the danger of inefficient use of funds by local administrations, sectoral agencies should continue to fund and implement local programs until these matters can be resolved. These are all legitimate concerns, and an important task for the government is to explore the suitability of various services for local implementation, the rate at which selected services might be devolved, and what other measures including changes in administration, funding, staffing and training are required.

55. Manpower and Training. Questions of manpower are central to the success of the expanded urban services program in the coming years; the lack of sufficiently qualified staff is already a constraint to effective implementation. Three broad developments are shaping the manpower needs for the coming years. First, and most obviously, the expanded investment program itself will require a large number of additional staff at both the local and central levels. Second, as the programs expand to the smaller cities, the average size and complexity of projects will tend to fall. Coupled with the need for added attention to operation and maintenance of the investments already in place and planned, this implies an increasing role in the local agencies for lower-level engineering skills augmented by substantial in-service training programs and supported by access to guidance and supervision from provincial and central offices when needed. This would free up scarce engineering skills at the central level for addressing more complex projects and for upgrading the capacity of local agencies, particularly in those areas (e.g., off-Java) where skill levels are lowest. Third, as cities continue to grow and the number of projects rises, it is essential that greater emphasis be given to raising the ability, experience, and authority of the planning and coordinating bodies (the BAPPEDA) at the city level.

56. An analysis of the manpower situation in the sector reveals three general points. First, while the average level of formal education of technical and managerial staff at the central government level appears adequate, the number of staff is insufficient even for the present investment program, let alone for the expanded REPELITA IV program. With this small number of staff, the chief role of the central government agencies must increasingly be to advise and guide local implementers rather than to be directly involved in designing and approving contracts. Second, technical staffing at the kotamadya/kabupaten level is probably adequate in terms of numbers, but seriously deficient in terms of formal education. About 10,000-13,000 staff are involved in the provision of urban services at the second tier level of government, and it is these staff who must be the primary target for training and upgrading programs and who must take primary responsibility for the success of the REPELITA IV program. Third, the local planning and coordinating units, the BAPPEDAs, are now relatively well stocked with relatively well educated staff. This is encouraging for the key role they must play in coordinating the overall city plans. There are, of course, factors other than formal education which must be recognised when assessing the potential capability of local staff. A recent study noted that the managerial capacity of local government is severely underestimated, that due

to insufficient responsibility being placed at the local level much of the professional/managerial capacity, especially at tingkat II, is severely underutilised, and that much of what is classed as mismanagement is really due to aspects of the system beyond the control of local managers and which need reform at higher levels of government.

57. Recognising the shortage of skills in the implementation of its investments, the government has embarked upon a major expansion in training and manpower development. The Departments of Public Works and Home Affairs both have large programs, and the Departments of Finance, Communications and BAPPENAS also organize relevant courses. While there is still scope for making courses more relevant and less traditionally "classroom" in approach, these programs are now making a substantial contribution. Some sectors are much better organized than others. For example, in water supply, an impressive training and upgrading program is well underway in conjunction with detailed manpower planning exercises. In marked contrast, for the various sanitation programs there has been virtually no manpower planning or in-service training.

58. In view of the acute scarcity of well-qualified staff, it is obviously essential that the most efficient use be made of available skills. In particular, it is important that higher-skilled staff be protected from routine duties that could be delegated to lower levels. In this regard there is scope for considerable improvement in almost all of the urban services. For example, much skilled manpower at the Department of Public Works is spent in contract administration that could probably be undertaken effectively at the local and provincial levels. This leaves little time for central government staff to develop policy, train staff, and establish effective guidance and monitoring. Improvements in efficiency could also be make at lower levels. For example, the provincial KIP offices are involved in routine administration of the KIP Perintis schemes (such as reviewing and approving requests for reimbursements for contractors) which could in most cases be fairly easily undertaken by kabupaten/kotamadya staff, freeing up the provincial staff for supervision and quality control.

59. Managing the Expanded Urban Services Program. The government is giving priority to strengthening the ability of city governments to manage and coordinate the overall urban services program. There are three broad arguments for increased city-wide management. First, urban problems, and priorities for infrastructure and services, vary enormously from one place to another, depending on the size and density of population and topographical characteristics. Until now, fragmentation of responsibilities and rigidities in central finance (which presently funds the majority of urban services) means that kotamadya and kabupaten authorities have had little or no influence over the balance of priorities. Second, as the number of sectoral programs in a city grows, it is important that standards and the phasing of investment be coordinated. And third, increased responsibility and control is a prerequisite to a psychology of involvement at the local level.

60. For Jakarta and some of the larger kotamadya, the government is encouraging the development of a system of financial and physical planning that bring together spending plans from all central and local sectoral departments. In Jakarta and Surabaya, three-year rolling plans are being

introduced, the latter based upon established Program, Planning and Budgeting systems, modified for the Indonesian context. It is intended to develop a system of integrated city-wide planning and extend it to four more large cities over the next two years. For medium and smaller cities a simpler approach is needed. Simple spatial planning processes are available which could be undertaken by local staff under guidance and short training from central government planners. Such a process could be incorporated in, and be the principal focus for, physical services for the local REPELITA. But in addition, it is desirable that these plans be updated more regularly, ideally as three-year rolling plans, reviewed annually.

61. Improvements in planning and coordination at the lower level will not be successful unless they are complemented by improvements at higher levels. At the provincial level the KANWILs and BAPPEDAs should jointly review local governments' coordinated urban plans and programs, possibly through an urban services committee, provide technical guidance, quality control and improved supervision of municipal enterprises, including the PDAMs. At the central level, some consolidation of Directorate functions within D.J. Cipta Karya to provide guidance for the expanded programs in environmental sanitation appears desirable. A similar strengthening is needed in D.J. PUOD to improve guidance to and supervision of PDAMs, and measures are needed from PUOD and the Department of Finance to initiate some reforms in the budgetary, financial management and audit procedures in the local governments, and to provide greater scope and incentives for raising local taxes. A major improvement to local efficiency and capability would be gained if central government 'financial' and 'project' grant funds for local urban services could be consolidated into a single urban development fund chanelled to each local government, its disbursement dependent on an appropriate multi-year plan and program prepared by the Tingkat II authorities with assistance and review from higher levels as appropriate. Guidance from BAPPENAS on indicative multi-year fund allocations by province would greatly assist in the effective preparation of local rolling programs. An urban development loan fund would also be desirable to provide finance for the expanded scale of services noted above and to lend discipline and efficiency to the local tax effort which would service the loans. However for these measures to be effective, close collaboration would be needed between the Departments of Home Affairs, Public Works, Finance, and BAPPENAS. One way to achieve this would be the establishment of a Municipal Development Board comprising these key Departments, whose role would be to decide overall policies, funding allocations for the urban sector, to coordinate external financial assistance, and supervise technical assistance. The Board could also play a central role in the coordination of services across province boundaries, such as water systems. Many countries have some type of urban services board usually in conjunction with an urban development fund for making loans to municipalities.

IV. FINANCING THE PROGRAM

62. Given the difficult overall budgetary outlook, it will not be possible to finance the urban services investment program under the present pattern of finance, whereby about three quarters of all investment funds for urban services derive from the central government. This is recognized by the government. It is estimated that total capital investment in urban services

in REPELITA IV should on average be in the range of almost Rp 530 billion per year (1982 prices), in comparison with about Rp 280 billion in the first four years of REPELITA III. Recurrent investment for repair and maintenance would need to be an additional Rp 145 billion/year. Some increase in the proportion of the central budget is probably appropriate, but there is obviously a limit to which funds can be switched from other sectors. Given that central government development spending is not likely to grow in real terms by more than about 6% per year, it is estimated that the share of central government spending in the overall investment program must fall from 64% to less than 50%. 1/ In view of these concerns, the government plans to reorientate its approach to financing urban services away from a direct central government responsibility for the program, towards a "counterpart" approach, whereby central government funds for some of the urban services will be regarded as "seed capital", with the remaining responsibility on the local governments. This will be a difficult transition, and the mechanisms for encouraging more local participation and responsibility have not yet been established. However, it is clear that this trend has important implications for the need to raise local revenues. In broad terms there are three sources of funds that must increase in relative importance in the coming years: local taxation, borrowing by local authorities and cost recovery.

63. Local Taxes and Charges. An examination of provincial and local finances reveals two important points. First, urban areas are able to raise more revenue per head than rural areas, and second, the rate of growth of regional revenues has been low--below the rate of growth of the economy as a whole.

64. Taxes on land and property provide the greatest scope for increased revenue. Urban IPEDA collections vary greatly among cities but average about 0.1% of the market value of the property. This is very low by the standards of other countries, where an effective rate of 1% of market value is not uncommon. A tenfold increase in the effective tax rate for urban IPEDA would require a major sustained effort but would not be an unreasonable target for, say, the end of REPELITA V. By the early 1990s, receipts from urban IPEDA (Rp 21 billion in 1981/82) could finance about a third of all new investments in urban services and could almost singlehandedly compensate for any declining relative contribution from the central government. A number of options for increasing collection efficiency and the effective rate of IPEDA are currently being explored by the government.

65. Borrowing by Local Government. Borrowing by local authorities has been relatively unimportant, accounting on average for about 1% - 1.5% of local government spending in recent years. Loans to provincial governments are insignificant; loans to second tier governments account for about 2-3% of second tier spending, while loans to Jakarta have accounted for 4-7% of the capital city's total spending. Loans are made particularly to support

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1/ These figures represent central government direct spending. Under REPELITA III the central government actually financed about 75% of investment expenditure is urban services. The difference is made up by grants to local governments.

investments in water supply, KIP and markets. Local government borrowing varies greatly across cities but shows no discernable pattern, except that large cities tend to borrow more.

66. It is desirable that richer local authorities should be increasingly required to finance a higher proportion of their development from loans rather than from DIP or grant finance. Lending to local authorities has two important advantages over grant finance. First, it encourages increased cost recovery for services, and second, it tends, over time, to reduce the burden on the central government budget, as funds become available from loan repayments and from the banking system.

67. Many, if not most, countries have established independent institutions for allocating loans to local authorities and managing the subsequent revolving fund from debt repayments. These may be in the form of banks, credit corporations, funds or loan boards, but they mostly have been established to bridge the gap between local authorities and the banking system and to encourage a reduced dependence on central government funds. In Indonesia, the Regional Development Banks (RDBs) are authorized to lend to local authorities but, except for short-term liquidity loans to provincial governments, seldom do. Some consideration could be given either to increasing the role of the RDB's in lending to local authorities for specific investments or to establishing some form of Municipal Loan Board or urban fund at the national level for this purpose.

Cost Recovery for Urban Services

68. With a 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 is possible, recurrent expenditures should be recovered through user charges but that the initial capital investments should be provided to users as a grant. Sometimes subsidies have been justified on "basic needs" grounds (water supply, sanitation) and sometimes on the grounds that there are "external" benefits to others by individuals using a service (e.g., public transportation, which alleviates congestion). At a time of relative abundance of financial resources, these policies provided an efficient means of spreading the benefits of the oil boom and were therefore in most cases entirely appropriate. In the present environment, however, continued high subsidization of services is likely to constrain the further expansion of services. Policymakers face the choice between a low level of highly subsidized services and a higher level of low subsidy services.

69. Water Tariffs. The present policy of the Government with respect to cost recovery for water supply is that operating revenues should cover operations, maintenance and depreciation, but consideration is being given to increase cost recovery in light of the current budgetary difficulties and the major investment needs of the sector. Given present financial difficulties, the viability of the ambitious water supply program may depend upon increased cost recovery. If funds were lent to PDAMs at a low 4% p.a. rate of interest instead of being made available as grants or equity contributions, by the end of the decade debt repayments could be financing over a third of all new

investments. Of course, although the effects are not immediate in the short term, it is necessary to implement the changes now in order to reap these medium-term advantages. The short-term benefits of such an approach might be that it would open up new financing channels; for example, it would be possible to borrow funds from the banking system and thus to reduce the strain on the central government budget. Care must be taken that any tariff increases do not unduly burden the poor. Evidence from income and expenditure surveys suggests that there is still good scope for increased water tariffs, particularly for water quantities above basic need levels.

70. Charges for Public Transportation. Bus transportation is subsidized directly through operating and capital grants to the two government-owned bus companies, which accounts for the large share (16%) of public transport in the total spending on urban services. There are two main arguments in favor of subsidized public transport in cities. First, low fares can help discourage private transport, and congestion can consequently be alleviated. There is some merit for this argument where public transport is a comfortable and viable alternative to private means and where the decision between private and public transport is marginal. However in Indonesia where only the relatively affluent can afford automobiles, it is highly unlikely that many car drivers would use buses if the fare were Rp 50 rather than Rp 100. Second, low and subsidized bus fares can enable the poor to use public transportation, which they might otherwise not be able to afford. There is no doubt that large increases in bus fares can significantly reduce real incomes of the lower income groups. However the relevant question here is why should bus rides be subsidized rather than other goods and services which also account for a large proportion of lower and middle income groups' expenditure bundles? Urban transportation is only one of many "basic needs"; should they all be equally subsidized? More importantly, to the extent that capital grants are only given to nationalized companies and these companies only operate in the largest cities, urban dwellers are being subsidized at the expense of rural dwellers; almost all indicators suggest that urban dwellers are generally better off than their rural cousins, and it is surely not desirable to make urban areas even more attractive to potential migrants from the countryside.

71. Over the long run, it is desirable that subsidies be reduced further; this would require the further raising of bus fares for public companies and could be accompanied by some decontrol of private fares. The January 1983 doubling of fares was an important, if painful, contribution in this regard. It resulted in declining real incomes of 5%-10% for some poor people. It is therefore probably not desirable to have further significant real fare increases in the near term. However the recent increase was only necessary because fares had been falling in real terms for the previous five years; it is therefore essential that nominal fares are increased at least in line with inflation. Over the longer term, real fares could be raised to levels consistent with full cost recovery.

72. Betterment Taxes. In many parts of the world betterment or "valorization" taxes are able to recoup most or all of the costs of improvement. Jakarta's "pajak khusus" (special tax) is the only example of an active betterment levy in Indonesia. It is currently being extended by the

Jakarta city government and it provides a potentially significant way of financing new urban infrastructure. Pajak khusus has been fairly successful in recovering costs in the small number of areas of Jakarta where it has been approved. The tax is well designed in principle and it is highly desirable that it should be expanded both within Jakarta and to other cities. However there appear to be a number of practical problems which tend to reduce its effectiveness and may discourage other municipalities from adopting a similar approach. These problems include late notification of the tax department that an area will be improved and consequent late notification of landholders, difficulties in tracing landholders due to unregistered land transactions, and a lack of data on land values and a lack of staff to collect this data.

73. On both economic and social grounds it is desirable that betterment taxes be extended. It has been estimated that all costs of the Guided Land Development Program (with the exception of arterial roads) could be recovered through these levies. From an equity standpoint, betterment charges permit a redistribution of income and can prevent some of the regressive income-distribution effects of betterment. In addition, to the extent that charges are levied for betterment, land prices will stay lower, with consequent social and economic advantages.

74. Cost Recovery for Housing. By far the most important support that can be provided for potential home owners is access to long-term mortgage credit. However, the mortgage market remains small in Indonesia (para. 43), and further expansion is hampered by the costly provision of subsidized interest rates. Although intended to benefit the poor, experience in other countries and in Indonesia suggests that subsidies actually hurt many lower- and middle-income families by limiting their access to credit. In view of these considerations and the desire to expand the market, the government is currently exploring options for a revised interest rate structure for mortgages. Analysis of income distribution data suggests that interest rates of 12% per year for the lowest cost of housing rising to 18% for more expensive housing could ensure that all but the poorest 20% of families could have access to housing finance. These rates compare to the present lending rates of 5% to 9%.

Chapter 1: A PROFILE OF URBAN AREAS

1.01. Urbanization in Indonesia has accelerated over the last decade, contrary to earlier projections. Growth has been particularly rapid in the larger cities, especially in and around Jakarta and in Sumatra and Kalimantan. A substantial rise in the rate of migration from rural to urban areas has more than offset declining rates of natural increase in urban areas. The growth of urban areas in Java excluding Jakarta has apparently been relatively modest, but official census figures understate the scale of urbanization, which on Java is characterised by temporary or circular (and largely unrecorded) migration to the cities as much as by more permanent movement.

1.02. Migration to urban areas has accelerated due to both "push" and "pull" factors. Opportunities for agricultural employment have hardly increased over the last decade and may have declined on Java, while the size of land holdings has fallen, often to levels too small to sustain a family. In terms of material income and access to services, life in the city is much more attractive than in the rural village. However productive work is not plentiful in the cities, and over three quarters of arriving migrants can find work only in the service sector.

1.03. Even although overall population growth will continue to decline in the 1980s and 1990s, it is likely that the population in urban areas will continue to grow at least at the same rate, which is already over twice the rate of population growth as a whole. This chapter explores recent trends in urbanization within Indonesia and describes some of key features of urban areas and urban dwellers, and suggests how the process of urbanization might develop in the coming years.

Population and Urbanization - Recent Trends

1.04. Indonesia's population grew at an average annual rate of 2.3% in the 1970s, higher than the 2.1% rate of the 1960s and the 1.5% average rate between 1930 and 1960. The acceleration of population growth in the last decade was due mainly to a substantial reduction in mortality which has outpaced reductions in fertility. Life expectancy at birth rose from 47 years in 1969 to 53 in 1978; infant mortality fell from 140 to 105 per thousand during the same period and now probably stands below 100.

1.05. About a quarter of Indonesia's population is defined as urban, a proportion higher than the 17% average in low income countries, but well below the 45% average in middle-income countries (Table 1.1). Indonesia's urban population appears to have grown at about 4% a year during the 1970s, but this is probably an underestimation. This represents an acceleration of

Table 1.1: INDICATORS OF URBANIZATION - INTERNATIONAL COMPARISONS

	Urban Population as % of Total Population, 1981	Percent of Labor Force in Industry	Average Annual Growth Rate of Population 1970-81	
			Total	Urban
Indonesia	23	15	2.3	4.0 (4.5) a/
Middle Income Countries				
Total	45	21	2.4	4.1
Asia and Pacific	32	18	2.3	3.9
Low Income Countries	21	15	1.9	4.4
Comparator Countries				
Philippines	37	17	2.7	3.7
Malaysia	30	16	2.5	3.3
Thailand	15	9	2.5	3.4
India	24	13	2.1	3.7
Pakistan	29	20	3.0	4.3
Nigeria	21	19	2.5	4.8
Egypt	44	30	2.5	2.9

a/ Includes estimate of growth of unmeasured seasonal and circular migration; see para. 1.

Source: Annex 1, Table 1.1.

urbanization over the 3.6% average annual rate of the 1960s. The growth of urban areas is now about the same as the average in middle-income countries as a whole, although more rapid than that of middle-income countries in the East Asia and Pacific Region. The rate of urbanization--defined as the gap between the rate of growth in the urban population and that of the rural population--at 2.3% (4.0% urban growth minus 1.7% rural growth), is now one of the highest in the region, although it is not yet as high as the average for Africa or Latin America. 1/ It is likely to increase in the coming years.

1.06. Provincial data on the level of the urban population in 1980 and the rate of growth in the 1970s are given in Table 1.2. The proportion of the total population defined as urban is highest on Java. The capital city, Jakarta, alone accounts for about one fifth of the total urban population. The rates of growth of the urban population are highest in Kalimantan, Sumatra and Sulawesi, and relatively low on Java for reasons associated with fertility and mortality rates, the patterns of migration and the unusual nature of the urbanization process on Java. These features will be explored in some detail in this chapter. Before proceding, however, it is useful to draw attention to a number of statistical difficulties, which make any analysis of urbanization in Indonesia subject to debate and which help explain why perceptions of the rate of urbanization have changed so markedly over the last five years. 2/

1/ For a discussion of comparative rates of urbanization, see, for example: Bertrand Renaud,"National Urbanization Policy in Developing Countries", World Bank/Oxford University Press, 1981.

2/ Representative of the general view of trends in urbanization in Indonesia, the report "Urban Development and Poverty in Indonesia", World Bank (draft), November 1978, suggests that while there is a real threat that urbanization might accelerate in the coming years, the formal evidence suggested a slowing down in the rate of growth of the urban population in the early and mid-1970s.

Table 1.2: TOTAL AND URBAN POPULATION AND GROWTH RATES BY PROVINCE

	1980 Census			Average Annual Growth 1971 - 1980	
	Total Population	Urban Population	% Urban	Total Population	Urban Population (est) a/
Aceh	2,611	233	8.9	2.9	
North Sumatra	8,361	2,127	25.4	2.6	
West Sumatra	3,407	433	12.7	2.2	
Riau	2,169	588	27.1	3.1	
Jambi	1,446	183	12.0	4.1	
South Sumatra	4,630	1,267	27.4	3.3	
Bengkulu	768	72	9.4	4.4	
Lampung	4,625	577	12.5	5.8	
TOTAL SUMATRA	28,016	5,481	19.4	3.3	5.1
DKI Jakarta	6,503	6,072	93.4	3.9	3.9
West Java	27,455	5,771	21.0	2.7	
Central Java	25,373	4,756	18.7	1.6	
D.I. Yogyakarta	2,751	607	22.0	1.1	
East Java	29,189	5,720	19.6	1.5	
TOTAL JAVA	91,270	22,926	25.1	2.0	3.0
(JAVA EXCL. JAKARTA)	(84,767)	(16,854)	(19.9)	(1.9)	(2.6)
West Kalimantan	2,486	417	16.8	2.3	
Central Kalimatan	954	98	10.3	3.4	
South Kalimantan	1,218	485	39.8	2.2	
East Kalimantan	2,065	441	21.4	5.7	
TOTAL KALIMANTAN	6,723	1,441	21.4	3.0	6.4
North Sulawesi	2,115	355	16.8	2.3	
Central Sulawesi	1,290	115	9.0	3.9	
South Sulawesi	6,062	1,096	18.1	1.7	
South East Sulawesi	942	88	9.3	3.1	
TOTAL SULAWESI	10,410	1,654	15.9	2.2	5.1
Bali	2,470	363	14.7	1.7	
West Nusa Tenggara	2,725	383	14.0	2.4	
East Nusa Tenggara	2,737	205	7.5	2.0	
Maluku	1,411	153	10.8	2.9	
Irian Jaya	1,174	237	20.2	2.7	
TOTAL EASTERN ISLANDS	10,517	1,341	12.8	2.2	3.6
TOTAL INDONESIA	146,935	32,846	22.4	2.3	4.0

a/ These are estimates based on highly imperfect information. See Annex 1, Note A for discussion of changes in the definition of urban areas.

Source: 1980 and 1971 Censuses.

Defining Urban Areas in Indonesia

1.07. In assessing the level and growth of urban areas in general and specific cities in particular, three problems are encountered. First, apart from the 54 kotamadya (municipalities) and the "kota administratip" (towns designated to become kotamadya), cities and towns in Indonesia have no administrative identity or boundaries. 1/ 2/ Census data are available at the province, district (kabupaten/kotamadya), sub-district (kecamatan) and village (desa) levels, but not at the city level. The six hundred or so cities that are not kotamadya each consist of one or several desa; they may cut across kecamatan boundaries and sometimes even stradle two kabupaten. 3/ Second, the boundaries of some kotamdya have been expanded, seriously distorting the overall urbanization picture. Where boundary changes are made they are usually dramatic. For example the boundary of Medan, Indonesia's fourth largest city, was expanded from 51 km^2 to 365 km^2 in 1973, making its 9% apparent annual population growth rate in the 1970s meaningless. 4/ On the other hand the boundaries of some municipalities have remained unchanged for decades. Great care must therefore be taken in interpreting aggregate growth rates. Between the 1971 and 1980 censuses, about a fifth of all kotamadya had their boundaries expanded. For these, a comparison of 1980 and 1971 populations would give an overestimation of urbanization. For the others, a simple comparison of census figures would usually yield an underestimation of the rate of growth.

1.08. Finally, the definition of urban areas has recently be changed (in preparation for the 1980 census). Although the new definition is conceptually superior to the old definition, the change has seriously complicated any comparative analysis. The effects of this definitional change are described in detail in Annex 1, Note A, and are briefly reviewed here.

1.09. Defining Urban Desa: In Indonesia, the distinction between urban and rural is made at the village (desa) level; a desa is either urban or rural. In the 1961 census, urban areas were defined to include all kotamadya, all villages within the capital town of a kabupaten, and any village, having less then 20% of the work force engaged in agriculture. The definition was broadened in preparation for the 1971 census, so that in addition to those villages defined as urban in 1961, other villages having less than 50% working

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/1 Some non-kotamadya towns now have populations in excess of 150,000 (e.g., Cilacap, Purwokerto, Banyuwangi, Sorong), while some kotamadya have populations below 50,000.

/2 For a discussion of administrative units and the relationship between central and local governments, see Chapter 3.

/3 The Department of Home Affairs plans to study this boundary problem in 1984. It is intended that formal boundaries should be established for several kabupaten capitals (ibukota kabupaten) on trial basis.

/4 Even more dramatically, the area of kotamadya Ambon was increased from 4.2 km^2 to 37.7 km^2 in 1980 (after the census), resulting in an immediate doubling of the city's population. While the earlier boundary resulted in a serious understatement of the truly urban population, the new boundary grossly overstates the urban area.

in agriculture and three urban facilties (health clinic, school and electric power) were also included. A major survey effort was undertaken in preparation for the 1980 census to improve the urban definition further. Three broad criteria were employed, with the following cutoffs:

a) population density within a village; a density of more than 5000 per km^2,
b) percentage of households engaged primarily in agriculture; less than 25%,
c) the number of urban facilties 1/; more than eight.

A points system was devised so that a combination of these characteristics could also qualify a desa as urban.

1.10. The effect of the new definition on the distribution of the urban population is illustrated in Table 1.3. The proportion of villages defined as urban in the country as a whole is unchanged at 5.9%, but since population density is now explicity recognized as a criterion, the proportion of population defined as urban rises substantially from 17.2% to 22.4%. This would imply a rate of urban population growth of 5.4% per annum, which probably exaggerates the actual growth of the permanent urban population.

Table 1.3: COMPARISON OF 1971 AND 1980 CENSUSES

	Percent Urban				Percent Distribution of Population Among Regions			
	Villages		Population		Urban		Total	
	1971	1980	1971	1980	1971	1980	1971	1980
Java	7.2	9.9	18.0	25.1	66.9	69.8	63.9	62.1
Sumatera	5.2	4.0	17.1	19.6	17.4	16.8	17.5	19.1
Kalimantan	4.0	2.0	20.4	21.4	5.1	4.4	4.3	4.6
Sulawesi	6.3	5.3	16.1	15.9	6.7	4.4	7.2	7.1
Bali	6.8	8.1	9.8	14.7	1.0	1.2	1.8	1.7
Nusa Tenggara	4.0	4.4	6.9	10.8	1.5	1.8	3.8	3.7
Maluku	1.9	0.9	13.3	10.8	0.7	0.5	0.9	1.0
Irian Jaya	4.4	4.1	18.5	20.2	0.7	0.7	0.7	0.8
INDONESIA	5.9	5.9	17.2	22.4	100.0	100.0	100.0	100.0

Source: A Search for a Better Definition of an Urban Village", Biro Pusat Statistik; and "Definisi Desa Urban Dalam Sensus 1980", Biro Pusat Statistik, 1979; and 1980 Census.

1/ Out of a list including motorized public transportation, movie theatre, elementary, junior high or senior high school, health clinic, maternity clinic, public health center, post office, bank, indoor market, shopping place, boarding house, and renting equipment for parties.

More dramatic is the effect on the distribution of the urban population. Because Java has in general a higher urban population density, more plentiful services, and fewer kotamadya, the share of Java in the total urban population rises significantly under the new definition (70% of Indonesia's urban population compared with 62% of the total population) while the share of Sumatra, Kalimantan and Sulawesi falls.

1.11. Since the administrative status of a desa is no longer a criteria for defining it as urban or rural, the importance of the kotamadya in the total urban population has declined. About 64% of the urban population now live in kotamadya, compared with 73% under the old definition. Previously all kotamadya residents were classified as urban. Now in some kotamadya in Sumatra, a majority of residents are classified as rural. 1/ Even in the capital city, 17% of the desa and 7% of the population are defined as rural; in Surabaya 14% of the population are rural. 2/

1.12. Ideally in order to estimate accurately the growth of the urban population between the 1971 and 1980 censuses it would be necessary to have data on the 1971 urban population, using the 1980 definition. This is not available. 3/ However it is possible to obtain estimates of urban population from the 1976 inter-censal survey using both definitions. 4/ Assuming that the ratio of urban populations by province prevailing in 1976 were the same as in 1971, "adjusted" urban growth rates for the decade as a whole can be calculated. These are the rates of growth presented in Table 1.2. They are repeated in Table 1.4 and compared with the unadjusted rates of growth and the growth of the population of the 54 kotamadya.

1/ For historical reasons Sumatra has a disproportionate number of kotamadya (18 compared with 19 in Java). Many of these have a lower proportion of urban residents than kabupaten on Java. For example only 22% of the residents of Solok, and 40% of Padang Panjang (West Sumatra) are classified as urban. See Annex 1, Table 1.2.

2/ See Annex 2, Table 1.2, for detailed data on urban population by kabupaten/kotamadya, and Annex 1, Table 1.3, for numbers of urban and rural villages by province.

3/ The Central Statistical Office (BPS) intends to undertake a detailed study of the relationship between the two urban definitions over the next year. A report should be available by mid-1984.

4/ Overall, the results of the 1976 Inter-Censal survey are not considered reliable. In particular both the total population and the urban population was apparently underestimated. It is important to note that it is the ratio of the urban populations from the different definitions that is taken from the 1976 survey, not the population levels.

Table 1.4: COMPARISON OF ALTERNATIVE MEASURES OF URBAN POPULATION GROWTH BY ISLAND
(Average Annual Growth Rate 1971 - 1980)

	Unadjusted Rate a/	Adjusted Rate b/	Growth of Kotamadya c/
Java	5.9	3.0	3.2
Sumatera	5.2	5.1	5.7
Kalimantan	2.7	6.4	5.5
Sulawesi	2.2	5.1	4.3
Eastern Islands	5.5	3.6	11.2
INDONESIA	5.4	4.0	3.9

a/ Simple comparison of urban populations (as defined in respective censuses) of 1971 and 1980 censuses

b/ 1971 urban population adjusted using the ratio of the urban populations from the 1976 Inter-Censal survey using the 1980 and the 1971 definitions respectively.

c/ Comparison of 1980 and 1971 kotamadya populations; no adjustment made for boundary expansions.

The Size of Cities

1.13. The lack of formal boundaries for the great majority of Indonesia's medium and smaller cities and towns makes it difficult to estimate with confidence the distribution of the urban population by size of town and the rate of growth of different sizes of towns. Most of the larger cities have the status of kotamadya, so that as long as adjustments can be made for boundary expansions, a fair representation of growth can be obtained in many cases. The required adjustment is sometimes more necessary for those kotamadya which have not had boundary expansions than for those which have. Many cities have outgrown their kotamadya boundaries and in these cases most of the growth in the population is on the periphery, outside the formal boundaries. Jakarta is a prime case in this regard. The population of Central Jakarta actually declined during the 1970s (the only kotamadya 1/ in the country for which this was the case), while the surrounding towns of Bekasi and Tanggerang to the east and west and the smaller suburban towns towards the south were probably growing at rates of 5-7% per year. Kabupaten Bogor immediately to the south of Jakarta grew at 4.5% per year, a faster rate than any other kabupaten in the country.

1.14. An attempt has been made to overcome these statistical difficulties in two ways. First, for large cities which appear to have expanded outside their kotamadya boundaries, adjustments have been made based upon population density and growth in the surrounding kabupatens. Second, for the bulk of towns that have no formal status, census data have been supplemented with data from a 1978 Ministry of the Interior (Dalam Negeri) survey, in which sub-district heads (Camats) were asked to estimate populations (and other characteristics) of towns within their region. Effectively the Camats were invited to draw their own city boundaries. 2/ The resulting breakdown of the urban population by size of city is presented in Table 1.5.

1.15. The population of large cities has tended to grow faster than that in medium-sized cities. This feature is not unique to Indonesia; indeed it is common to many developing countries and is a cause for obvious concern. 3/ Table 1.6 presents the growth rates in the 1960s and the 1970s of kotamadya by size. 4/ A statistical analysis suggests a significant positive

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1/ Strictly speaking, the five districts of DKI Jakarta are not independent kotamadyas, since they do not have independent budgetary authority, but they do have mayors (Walikota).

2/ The results of this survey by province are compared with the 1980 census figures in Annex 1, Table 1.5.

3/ See for example, D. Rondinelli: "Intermediate Cities in Developing Countries", Third World Planning Review, November 1982, and "Secondary Cities in Developing Countries: Policies for Diffusing Urbanization". Beverley Hills, Sage, 1983 (forthcoming).

4/ For a discussion of the growth of large and small cities in the 1960s, see Soegiyoko and Soegiyanto, "Urban Areas in Indonesia", Prisma, No. 3, 1976.

Table 1.5: SIZE DISTRIBUTION OF INDONESIA'S CITIES AND TOWNS, 1980

Size of City (Population)	Total Inhabitants in cities of this size (million)	Number of cities
Less than 20,000	4.3	369
20,000 - 100,000	6.8	293
100,000 - 500,000	6.1	27
500,000 - 1 million	2.5	4
More than 1 million	13.1	5
Total	32.8	670

Source: (a) 1980 Census for population of Kotamadya (Annex 1, Table 1.4); roughly adjusted for the major cities of Jakarta, Bandung, Surabaya, and Surakarta to take account of growth of metropolitan areas outside kotamadya boundaries. (b) 1978 Dalam Negeri "Camat" survey (Annex 1, Tables 1.5 and 1.6) updated to 1980, assuming 8% growth of all cities between 1978 and 1980.

Table 1.6: GROWTH RATES OF KOTAMADYA BY SIZE

Size of City	Average Population Growth a/ (Percent per Year)	
	1961 - 1971	1971 - 1980
Large Cities (over 500,000)	3.5	4.1
Medium Cities (100,000-500,000)	2.4	3.8
Small Cities and Towns (below 100,000)	3.0	3.2
Total	3.2	3.9

a/ To the extent that kotamadya boundaries have in general not been expanded in line with peripheral urban growth, these growth figures probably underestimate the growth of the kotamadya. Instead of the 3.9% overall annual growth rate presented here, a figure of, say, 4.2% is probably closer to the truth, implying a rate of about 3.7% p.a. for non-kotamadya.

Source: Annex 1, Table 1.4.

relationship between the 1971 size of the kotamadya (excluding those with boundary expansions) and their rate of growth in the 1970s. 1/

1.16. The reasons for the relatively low growth of the medium-sized cities in particular are not clear. However studies in other countries suggest that there may be three broad explanations. 2/ First, intermediate cities neither have the advantages of having close links with the agricultural sector (which has performed very well in Indonesia over the last decade, boosting the growth of the smaller market centres) nor with the modern industrial sector (which in the early stages of industrialization tends to be concentrated in the metropolitan areas). Second, government expenditures per head tend to be lower in medium than in large cities. And third, the regulatory environment makes it essential for investors to maintain close communication with central and provincial government departments, which tends to concentrate manufacturing investment in the capital city, or, to a lesser extent, in provincial capitals. Over the last few years the government has successfully diversified some of its own investment away from the large cities (see Chapters 2 and 4). Additional aspects of a policy to divert new activity away from the metropolitan areas and towards the intermediate cities would include improved communications and financial services, the establishment of industrial estates, and a reduction in the amount of required face-to-face contact between investors and government. 3/ More recently the large infrastructure demands of large cities are beginning to appear again in Government investment programs (Chapter 2).

Components of Urban Population Growth

1.17. It is estimated that about half of the 9.6 million increase in the urban population between 1971 and 1980 was due to natural increase and half to migration to urban areas. Data availability limits the extent to which a detailed breakdown can be estimated, but four components of urban population growth can be identified:

(a) natural increase of the existing urban population;
(b) migration to urban areas from other provinces;
(c) migration to urban areas within provinces and the "urbanization" of rural areas;
(d) natural increase of migrants arriving within the period.

1/ Estimated correlation coefficients were: 0.3 for Java, 0.4 for other islands, and 0.3 for Indonesia as a whole. Regression analysis also showed a significant positive relationship between growth and size.

2/ See Rondinelli op.cit.

3/ This argument is not meant to imply that it is necessarily preferable for medium-sized cities to grow faster than large cities. (In fact, there may be very good economic reasons why large cities are more appropriate for industrial investment.) The argument is rather that it is desirable that any biases introduced by government policy actively encouraging the growth of the metropolitan areas should be removed.

Table 1.7 presents the estimated breakdown of urban growth in Indonesia according to these components.

Fertility and Mortality

1.18. During the 1960s the natural rates of increase in urban and rural areas were very similar. Although birth rates were lower in urban areas, this was almost exactly compensated by lower death rates. During the 1970s, however, death rates fell much more in rural than in urban areas, more than offsetting the slightly faster decline in birth rates in rural than in urban areas. By the late 1970s the urban population had a natural rate of growth of 1.88% compared with 2.12% in rural areas. Table 1.8 summarises recent trends in vital indicators over the last decade. (More details are given in Annex 1, Table 2.1).

Table 1.7: COMPONENTS OF URBAN GROWTH

	1971 - 1980		1961 - 1971	
	million	%	million	%
Increase in Urban Population	9.63	100	6.76	100
Natural Increase of Existing Urban Population a/	4.63	48	4.59	68
Migration and "Urbanization"	5.00	52	2.17	32
Migration from Other Provinces b/	1.66	17	n.a.	n.a.
Migration from Within the Province c/	2.92	30	n.a.	n.a.
Natural Increase of Migrants d/	0.42	5	n.a.	n.a.

a/ Based on estimated fertility and mortality in urban areas (Table 1.8).
b/ Derived from 1980 census data on gross movement to urban areas Table 1.10). Assumed that level of migration from urban areas is half level of in-migration.
c/ Derived as residual.
d/ Derived from age-specific fertility and mortality behaviour.

Table 1.8: BIRTH AND DEATH RATES IN URBAN AND RURAL AREAS

	Urban		Rural	
	1967-70	1978-79	1967-70	1978-79
Fertility Rate a/	5.16	3.92	5.75	4.48
Crude Birth Rate b/	39.83	30.35	40.01	35.20
Crude Death Rate c/	15.27	11.50	20.04	13.96
Rate of Natural Increase d/	24.56	18.85	24.97	21.24

a/ Number of children born to average woman between ages of 15 and 49.
b/ Annual number of births per thousand population.
c/ Annual number of deaths per thousand population.
d/ Annual rate of growth of population per thousand population in absence of migration.

1.19. Fertility. Three factors influence the birth rate: the age structure of the population, the age of marriage, and the fertility behavior within marriage. The age distribution in urban and rural areas is summarized in Table 1.9. The urban population is, in general, younger; less than 30% of

Table 1.9: AGE DISTRIBUTION OF URBAN AND RURAL POPULATION 1980
(Percent)

	URBAN	RURAL	TOTAL
Age Group			
0 - 14	38.6	41.6	40.9
15 - 29	31.7	25.6	27.0
(15 - 19)	(12.5)	(9.8)	(10.4)
(20 - 24)	(10.8)	(8.3)	(8.9)
(20 - 29)	(8.4)	(7.5)	(7.7)
30 - 64	27.1	29.4	28.8
65 +	2.6	3.4	3.2
	100.0	100.0	100.0

Source: 1980 Census: Calculated from "Penduduk Indonesia", Seri S, No. 2, February 1983.

urban residents are over 30 years old, compared with almost 33% in rural areas. As would be expected given migration patterns (see next section) there is a particularly high proportion of the urban population in the 15-29 year age group (32%) compared with the rural population (26%). This is itself would tend to support a higher, rather than lower, birth rate in urban than in rural areas. However, it is more than compensated by significantly different marriage patterns. Both woman and men get married much later in urban areas. For example less then 17% of urban women in the 15-19 age group are married, comparison with 31% in rural areas; for the 20-24 age group the proportions are 60% and 77% in urban and rural areas respectively and for the 25-30 age group, 80% and 88%. 1/

1/ Details are given in Annex 1, Table 2.2.

1.20. Once married, urban and rural women exhibit quite similar fertility patterns. The average urban married woman can be expected 1/ to have 3.79 children, only slightly lower than the 3.81 in rural areas. 2/ This implies, incidentally, that urban women are more fertile per married year; they "catch up" with rural women, having married later. This is consistent with the view that for much of the 1970s the family planning program on Java was more successful in rural than in urban areas for reasons associated with the strength of peer pressure and suppport within the community. Although it appears that by 1980 the family planning program in urban areas had achieved rough parity with rural areas (at least in terms of the number of acceptors), there were still difficulties in spreading the program within the largest metropolitan areas. For example in Jakarta in 1980, only 26% of married women used contraceptives regularly, compared with 39% in East Java, 33% in Central Java, and a national average of 27%.

1.21. Mortality. The crude death rate in urban areas in Indonesia, as in most countries, is lower than in rural areas both because of the lower proportion of older people and because of the higher standard of health care in urban areas (para 1.48). Over the last decade the gap between urban and rural death rates was narrowed through the introduction of improved health care facilities especially at the kecamatan level; between 1971 and 1980 crude death rates declined by 25% and 30% in urban and rural areas respectively. Even so mortality remains about 20% lower in urban areas.

1.22. In the major cities, especially Jakarta, a relatively high level of health care results in particularly low mortality rates. 3/ This, combined with relatively modest success in the family planning program, has resulted in high rates of natural increase. Thus, for example during the period 1971-80 the rate of natural increase in Jakarta is estimated at 2.78%, much higher than the average for urban areas and even higher than the national average of 2.33%. This has tended to reinforce migration patterns leading to the relatively high growth of metropolitan areas, as opposed to intermediate and smaller towns. In particular, a high rate of natural growth is a major factor explaining the much more rapid growth of greater Jakarta than of other urban areas in Java.

1/ Based on the assumption that fertility rates by age groups prevailing in 1980 would continue unchanged.

2/ See Annex 1, Table 2.3 for details of average children ever born per married women, by age group. Annex 1, Table 2.4 gives details of the average number of children still living by woman in urban and rural areas.

3/ Life expectancy in Jakarta, for example, is almost 58 years, about five years higher than the national average.

Migration to Urban Areas

1.23. The quality of data on migration to urban areas is poor. In particular, no information is available--except for a few village level studies--on migration within provinces, which appears to be a more important component of urbanization than migration from one province to another. Interprovincial migration can be derived from the 1971 and 1980 censuses; data on province of origin and province of destination are available, but a rural/urban breakdown is only available for the destination, not the origin. While information is therefore available on the total migrants to urban areas from other provinces, it is not possible to say whether the migration was from rural or urban areas; nor is it possible to ascertain the number of migrants out of urban areas. However, even with this limited information, some general trends can be identified. 1/

1.24. Interprovincial Migration. Permanent interprovincial migration has traditionally not been high in Indonesia. In 1980, 10 million people were living in provinces other than that in which they were born--less than 7% of the population. Of this number, slightly over half (5.1 million) migrated to urban areas. Ninety-six percent of those living in rural areas and 84% of those in urban areas were living in the province in which they were born. The average urban resident is therefore almost four times as likely to have made an interprovincial move than the average rural resident. Table 1.10 summarizes the available data on interprovincial migration into urban areas. Two important trends can be clearly seen. First the rate of migration appears to be accelerating. Of the 5.1 million having moved to urban areas, almost half (49%) arrived in the previous 10 years and 31% in the previous 5 years. Although it is not possible from this information to conclude unambiguously that migration has accelerated over the last decade there is a strong suggestion that it has. Data on the number of "return" migrants (those migrating back to rural areas) and on migrant death rates are necessary in order to establish precise trends in migration behaviour. The 1980 census indicated that about 12-15% of interprovincial migrants move back to their original province or on to a third province within five years of their original migration 2/. Even if the rate of return were much higher than this and even if migrant death rates were above their age-specific averages, the figures in Table 1.10 would still suggest that the rate of interprovincial migration to urban areas was higher in the 1970s than in earlier decades and that migration accelerated during the second half of the 1970s. This finding is consistent with micro-level urban and rural village studies (para 1.32) and with the findings of the 1976 inter-censal survey which suggested that the rate of urbanization was lower than now seems to be the case.

1/ For a recent study of migration up to and including the 1971 census, see Kartono Wirosuhardjo: "Pattern and Trends of Internal Migration and Urbanization in Indonesia", unpublished PhD thesis, University of Indonesia, July 1983.

2/ See "The Interprovincial Migration Study", World Bank; see Source to Table 1.10.

Table 1.10: INTERPROVINCIAL MIGRATION INTO URBAN AREAS BY DURATION OF RESIDENCE
(thousands)

Duration of Present Residence of Migrants	Present Urban Residence, 1980					
	JAVA			SUMATRA	OTHER ISLANDS	TOTAL
	Jakarta	Other	Total			
Less than 5 years	725	465	1190	234	184	1608
5 - 9 years	435	197	632	132	110	876
10 years and over	1308	602	1910	502	225	2637
Total Migrants	2468	1264	3732	871	518	5121

Note: Figures may not add due to rounding.

Source: 1980 and 1971 Censuses. See "The Inter Provincial Migration Study", Vol. IV of "Indonesia - Selected Issues in Spatial Development", World Bank, 1984 (forthcoming).

1.25. The second striking feature apparent from Table 1.10 is the importance of Jakarta, which accounts for 48% of the total migrants to urban areas, again underlining the importance of the capital city in the overall urbanization process. Even since 1970, when migration to Jakarta was made much more difficult by the introduction of the identity card scheme, the relative importance of Jakarta in total interprovincial migration to urban areas (47%) has not declined. However, since these figures only cover migration to urban areas across province boundaries, they tend to exaggregate the importance of Jakarta in the overall pattern of migration. For most urban areas the bulk of migration appears to take place from rural areas within the same province (Table 1.7). In the case of Jakarta of course, which is itself a province, almost all in-migration must originate in other provinces 1/.

1.26. In general, since most data is collected at the province level, much more can be known about Jakarta than about any other urban areas. For example Jakarta is the only city for which out-migration as well as in-migration data is available. In the second half of the 1970s, the level of out-migration (to other provinces, urban and rural) was just over half (51%) of the level of in-migration. Thus, while 725,000 moved to the capital city, about 370,000 left. In the absence of information about out-migration from other urban areas, the same ratio of inmigrants to outmigrants has been assumed for all urban areas in deriving the figures given in Table 1.7.

1.27. Intraprovincial Migration. Migration from rural to urban areas within a province appears to be more important than interprovincial migration for almost all urban areas except for Jakarta. Thus, for example the majority of migrants to Surabaya are from East Java, to Semarang from Central Java, and to the fast growing periphery of Jakarta--Tanggerang, Bekasi and Bogor--from West Java. This is probably even more true of the smaller towns, except for some of the recipient areas for transmigrants in Sumatra and Kalimantan.

1.28. While there are no direct data available on within-province migration, it is possible to make rough estimates; given estimated rates of urban growth, rates of natural increase and interprovincial migration, intraprovincial migration can be estimated as a residual. Based upon this crude technique, it is estimated that almost three million people moved from rural to urban areas within the same province during the 1971-80 period. This is equivalent to 2.6% of the 1980 rural population (in comparison with interprovincial migration to urban areas of 1.7 million, equivalent to 1.6% of the 1980 rural population). This represents a significant increase over the 1960s.

1/ Since 6.6% of Jakarta's population is still "rural" (Table 1.2), it is possible for a small amount of 'within province' urbanization to take place in Jakarta.

1.29. The lack of data on intraprovincial migration is a serious impediment to an understanding to the process of urbanization. Questions relating to inter-kabupaten migration were not included in the 1980 census to save costs. 1/ Given the apparent acceleration of migration, it is desirable that more detailed analysis be included in the 1985 inter-censal survey.

1.30. Non-Permanent and Non-Measured Migration. The migration figures given in the previous paragraphs significantly underestimate the true rural-urban mobility on Java. Circular and seasonal migration to urban areas has almost certainly increased substantially over the last decade and accounts for an important if unmeasured aspect of urbanization on Java, making conventional measurement of the urbanization process increasingly irrelevant. Push factors in the agricultural sector (para 1.35) coupled with pull factors in the form of higher pay and superior access to services in urban areas (paras 1.40 - 1.49) have encouraged large numbers of workers to spend part of the year in urban areas. The nature of this form of migration varies greatly, from those who spend just one or two months in the urban informal sector during the slack agricultural season to those who spend most of the year in fairly secure urban employment returning to their rural homes for only one or two months a year. Although greatly affecting the character and size of urban areas, these migrants are generally not included in census data on urban population. This omission is for three reasons; first in order to classify as "resident" in the census definition, a person must live in a place for six months, so that all migrants moving to urban areas for less than six months each year are classified as rural. Second, the 1970 regulation restricting migration into Jakarta has resulted in a large number of unregistered and illegal workers who are for official purposes registered (if at all) as "guests" of households or boarding houses (pondoks). These people usually are not recorded as residents of Jakarta in the census. Thirdly, many circular migrants, although spending most of the year in the city, still think of themselves as only temporary urban residents; out of a sense of loyalty and solidarity, many of these are apparently still registered in the census as residents of their home villages.

1.31. The existence of seasonal and circular migration has two important implications; first, the overall size of the urban population is, on average, larger than that suggested by the census data, and second, to the extent that this form of migration has increased during the last decade, the growth of the urban population of Java is greater than the 3% annual rate suggested by the official figures.

1/ Inter-kabupaten migration was included in the 1976 inter-censal survey, although the accuracy of the findings was doubtful.

1.32. By all accounts the volume of circular and seasonal migration increased substantially in the 1970s and now accounts for a significant proportion of the urban population in Java. Although no serious attempt at measurement has been made, a number of village-level and case studies have highlighted its importance. For example, a study of 14 villages in West Java in the mid-1970s 1/ found that 90% of the male labor force in these villages were involved in some form of circular migration, predominantly to urban areas, especially Jakarta. More than half of the circular migrants interviewed in 1973 had begun this pattern of mobility since 1970. Many of the migrants had earlier been well-established members of the rural work force. A similar study 2/ of villages near Yogyakarta found the prevalence of circular migration to be about the same as in the West Java study, and also that there had been a sharp increase in its occurrence in the 1970s. A study of the "pondoks" 3/ of Jakarta found that a large proportion of the petty traders who inhabit the pondoks were circular migrants who move back and forth between their principal workplace in the city and their village in Central Java, where their landholdings were too small (usually less than 0.25 ha) to support them. Circular migration was found to be a recent phenomenon among the hawkers of Jakarta. In a five-year period in the mid-1970s the number of migrants rose substantially so that "in some cases virtually all the able-bodied men of the (rural) village between the ages of about 15 and 30 were coming to the city as circular migrants for part of the year". Another study 4/ of becak (trishaw) drivers in East Jakarta found that a large proportion of them were circular migrants whose average time of stay in the city was three months.

1/ Graeme Hugo: "Population Mobility in West Java", Gajah Mada University Press, Yogyakarta, 1981 and "Circular Migration", Bulletin of Indonesian Economic Studies, October 1977.

2/ I.B. Mantra: "Population Mobility in Wet Rice Communities: A Case Study of Two Dukuh in Yogyakarta Special Region", unpublished PhD thesis, University of Hawaii, 1978.

3/ Lea Jellinek, "The Pondoks of Jakarta", Bulletin of Indonesian Economic Studies, October 1977 and "Some Preliminary Comments on Circular Migrants in the City of Jakarta," unpublished mimeo. A "pondok" is a boarding house where petty traders live and obtain their equipment and raw materials. A pondok generally specializes in one or two forms of petty trading. Most of the migrants staying at a pondok are likely to come from the same rural village and will generally stay in the same pondok each time they come to the city for work.

4/ P. Sudarno: "Pengemudi Becak Musiman di Jakarta Timur"; Pusat Latihan Penelitian, Faculty of Social Sciences, University of Indonesia.

1.33. A more recent series of studies of rural labor markets in the late 1970s and early 1980s found circular migration to be high and increasing. 1/ For example, a survey of four West Java villages found that between 27 and 41 percent of respondent households had members working outside the village, mostly in cities. A study of two villages in Central Java found that circular migration had begun in the early 1970s, and a survey in two East Java villages found a high level of migration to Surabaya and (to a lesser extent) Jakarta. Even in the period 1978-81, which were good years for rural Java, with substantial evidence of rising real wages even some labor shortages, there is no evidence that temporary migration to urban areas diminished.

1.34. The level of temporary migration is obviously sufficiently high to have important implications on any urbanization strategy and, in particular, on the provision of urban services. Although an accurate assessment of the volume of this form of migration is not possible, some rough guesses can be made. From the village-level studies cited above, it would seem reasonable to assume that at least 25% of rural households on Java have at least one family member working for part of the year in urban areas. This would imply that at least 3.75 million people are involved in this form of migration on Java, equivalent to 16.5% of the measured 1980 urban population. The effect on the urban labor force is much greater since virtually all migrants are either employed or looking for work. The above figure of 3.75 million is equivalent to just over 50% of the measured 1980 urban employment in Java. Of course, since migrants are only working in the cities for part of the year the average effect is less then this, but it is not unlikely that about one sixth of the average urban workforce consists of temporary migrants not included in official employment figures. Finally, if it is true that this form of migration has grown rapidly over the last decade as suggested by the studies, the effective growth of the urban population in Java is understated in the census; for example, if the percentage of rural households with at least one family member working in the cities rose from 15% in 1971 to 25% in 1980, the effective rate of growth of the urban population on Java was almost 4% per year rather than the recorded 3%. The urban labor force grew by over 6% per year, instead of the 4.7% implied by the census.

1/ William L. Collier et al: " Acceleration of Rural Development in Java", Bulletin of Indonesian Economic Studies, November 1982, and Soentoro et al: "Kesempatan Kerja dan Penghasilan Tenaga Kerja di Pedesaan Jawa Barat", Rural Dynamics Group, Institute Pertanian Bogor, Report 05/81/L, September 1981.

Urbanization and Employment 1/

1.35. The urban labor force grew by about 4.7% per year during the 1970s, 2/ a rate that was almost exactly matched by employment growth. This was no accident; few people in Indonesia can afford to stay idle, many work very long hours at low levels of reward and others accept whatever part-time work that is available. Almost by definition, therefore, the official employment figures rise at the same rate as the work force. The more rapid growth in the urban labor force than in the overall urban population is due to an increasing participation rate in general and to the character of in-migrants in particular. As Table 1.11 illustrates, migrants to urban areas are much more likely to be of working age than non-migrants; 81% of migrants to urban areas were between the ages of 10 and 55 compared with 57% and 53% of urban and rural non-migrants respectively. They are also less likely to be married. Over half of those moving to urban areas do so as individual migrants (60% of those moving to Jakarta move alone), which constrasts markedly with those migrating to rural areas, over 75% of whom move as families. As a result of these trends, the average dependency ratio in urban areas fell from 3.9 in 1971 to 3.4 in 1980 3/; that is, on average a worker was responsible for supporting half a person less than in 1971. Although this decline was more rapid than in rural areas, the dependency ratio in rural areas (2.8, having declined from 3.0 in 1971) remained lower than in urban areas. 4/ Participation rates of those over 10 years old in the labor force in urban and rural areas were 41.4% and 52.6% respectively in 1980. 5/ The gap between urban and rural is observed for all age groups but is particularly large in the 10-20 age group, due to different education attendance rates in urban and rural areas (para. 1.47).

1/ Employment data for urban and rural areas is given in Annex 1, Tables 3.1 to 3.4.

2/ Estimating labor force and employment growth in urban areas is fraught with the same difficulties as estimating urban population growth, due to changing definition of urban areas. The 4.7% is derived from estimated dependency ratios (Annex 1, Table 3.2) applied to estimated urban population figures. It is lower than the 5.7% annual growth rate implied by a simple comparison of 1980 with 1971 "urban" employment data from the two censuses (Annex 1, Table 3.1).

3/ See Annex 1, Table 3.2 for details. The dependency ratio declined despite an increasing proportion of school-age children attending school.

4/ To the extent that urban workers support relatives in rural areas, the urban dependency ratio in urban areas is understated.

5/ Annex 1, Table 3.3.

Table 1.11: AGE AND MARITAL STATUS OF MIGRANTS 1/

	Migrants to		Non-Migrants		Total	
	Urban	Rural	Urban	Rural	Urban	Rural
A. Percent in Age Group						
10 - 24	55	39	36	30	35	30
25-45	26	31	21	23	24	24
B. Percent Single	56	39	47	35	44	34

1/ Those who moved in the previous five years.

Source: 1980 Census Data. See "The Inter-Provincial Migration Study", World Bank 1983, op. cit.

1.36. The sectoral composition of employment in rural and urban areas is presented in Table 1.12. The most striking feature of the table is the dramatic decline in the role of agriculture as an employer. Although agriculture accounted for 76% of rural employment in 1971, it accounted for only 8.5% of the total increase in rural employment during the decade. During the decade over six million children of agricultural households entered the labor force, but only about one in nine found a regular job in agriculture. It is these young entrants to the labor force that form the crux of the employment problem in Indonesia today and the key to the urbanization process. It is not possible to say with any precision how these "surplus" workers from agricultural households were absorbed over the last decade, but some rough estimates can be made. If it is assumed that new labor force entrants from non-agricultural households entered the same sectors as their parents then it can be estimated that of the 5.4 million labor force entrants in agricultural households who failed to find work in agriculture, about 3.1 million stayed in rural areas; half of these entered the industrial sector (manufacturing, construction, transport, etc.) and half entered the service sector. The remainder, 2.4 million, moved to urban areas in search of work; while about 0.4 million appear to have found employment in the urban industrial sector, at least 2 million new migrants had no choice but to work in the low-productivity, low-wage urban service sector.

1.37. The picture presented in Table 1.12 suggests that there are three urgent priorities for employment policy in the coming years. First, it is essential that farmers are not encouraged to adopt new labor-saving technologies more rapidly than is economically appropriate. Two broad developments are now underway affecting labor absorption in Javanese agriculture. On the one hand, cropping intensity has increased substantially and is still rising, thus raising the demand for labor. On the other hand, new technologies have been introduced, reducing labor demand. During the 1970s these two influences roughly offset each other. During the decade the two most important technical innovations were mechanical rice hullers, which by 1981 had virtually completely replaced hand pounding, and the switch from the hand-held "ani-ani" knife to the sickle for the harvesting of padi, which was also virtually universal by the beginning of the 1980s. 1/ Although it is not possible to predict with any confidence which technologies will displace agricultural labor in the coming years, one important candidate is the padi tractor. By 1981 the tractor could only be found in a small number of villages on Java, but when introduced to a village it has tended to spread extremely quickly. 2/ It takes as little as one day to plough a hectare of land with the tractor, compared with about eight days using water buffaloes; the implications for labor absorption and urbanization are obvious. Other labor-saving innovations, such as the IRRI reaper and transplanter may also

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1/ For a discussion of these issues see, for example, W. Collier et al: "Acceleration of Rural Development in Java", BIES 1982, op. cit.; and W. Collier, "Improved cropping Patterns, Labor Absorption and Small Rice Farm Mechanization in Java", September 1981. (Paper presented at ADC - IRRI workshop on Rice Farm Mechanization, Los Banos, Philippines); and J. Lingrad and A.S. Bagyo: "The Impact of Agricultural Mechanization on Production and Employment in Rice Areas of West Java", BIES, April 1983.

2/ For example in one village surveyed the proportion of sawah ploughed with a tractor to rose from zero to 90% in one season. See Collier et al, ibid.

Table 1.12: STRUCTURE AND GROWTH OF EMPLOYMENT IN URBAN AND RURAL AREAS 1971-1980

	Rural			Urban		
	% of Total Employment (1980)	Increase 1971-1980 ('000)	% of Total Increase	% of Total Employment (1980)	Increase 1971-1980 ('000)	% of Total Increase
Agriculture, Forrestry, Fishing	67.3	458	8.5	9.3	231	6.2
Industry	13.0	2265	41.8	28.8	1191	31.9
Manufacturing	7.9	1062	19.6	14.1	679	18.2
Construction and Utilities	2.6	670	12.4	5.9	252	6.7
Other Industry a/	2.5	533	9.8	8.8	260	7.0
Services	19.7	2690	49.7	61.9	2312	61.9
Trade, Restaurants, Hotels	10.3	1197	22.1	24.9	859	23.0
Other Services	9.4	1493	27.6	37.0	1453	38.9
Total	100.0	5408	100.0	100.0	3738	100.0

a/ Transport, Storage and Communication.

Source: Annex 1, Table 3.1.

begin to displace labor during this decade. It is probable therefore that agricultural employment in Java will decline in the 1980s--possibly quite substantially. This is a natural part of the development process and should not necessarily be actively discouraged if it results from a long-term shift in the relative economic prices of capital and labor. However it is essential that it not be inadvertently encouraged by policies, such as subsidized interest and low diesel fuel prices, that provide a positive incentive to accelerate the switch from manpower to mechanical power.

1.38. Second, a high priority must be given to the promotion of non-agricultural employment in rural areas. Here the performance over the last decade appears to have been quite good. Indeed, given the dramatic decline in the relative importance of agriculture, the surprise has not been that so many new labor force entrants have moved to the cities, but that so many of them were apparently absorbed in the rural industrial and service sectors. In this regard, off-farm employment in rural Java is an important priority for research. 1/ In reality, it is likely that absorption in non-agricultural rural activities was less than implied by the aggregate census data. A significant number of those measured as rural workers may have spent a substantial part of the year in the cities as circular migrants. In addition the number of hours worked per week remains low, and may have fallen in recent years. As shown in Annex 1, Table 3.4, 44% of the rural labor force works less than 35 hours a week (the usual definition of "underemployment") compared with only 20% in urban areas. In rural non-agricultural activities, about 34% work less than 35 hours per week. 2/

1/ The World Bank in collaboration with the Government and the Ford Foundation is embarking upon a series of studies on this topic.

2/ The 1980 census was ennumerated in October, a slack period in agriculture, so that data on the length of the work week may be biased downwards. Hours worked in the non-agricultural sectors may therefore be a better measure of the level of underemployment.

1.39. Third, it is crucial that industrial (particularly manufacturing) employment be raised in both urban and rural areas. Industry accounts for only 15% of total employment in Indonesia, compared with 21% in middle-income countries as a whole. 1/ In urban areas 62% of the work force is engaged in providing services, too high a proportion for healthy and balanced growth. 2/

The Quality of Life in Urban Areas

1.40. Wages, Income and Poverty. 3/ An analysis of income, expenditure and wealth surveys suggests two important developments over the last decade. First, average incomes have risen in real terms substantially, even among lower-income groups, and the number of poor people has been reduced both as a percentage of the population and in absolute terms. Second, the reduction of poverty has been much more impressive in urban than in rural areas. By the beginning of the 1980s urban dwellers were, in material terms, unambiguously better off than those in rural areas. 4/

1.41. Table 1.13, which is derived from the four most recent household expenditure surveys (SUSENAS), summarizes the trends in poverty incidence in rural and urban areas. The proportion of the population in poverty in rural areas (45%) was more than twice that in urban areas (20%). For Java, the gap between urban and rural is even more marked. The technique for calculating the "poverty lines" (below which an individual is considered to be in poverty) is described in the note to Annex 1, Table 4.3. Defining and measuring poverty lines is fraught with all kinds of well-known difficulties and

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1/ World Bank: "World Development Report", July 1983, p. 188.

2/ For a discussion of policies for stimulating industrial employment and growth, see, World Bank "Trade and Employment Policies for Industrial Development, 1983".

3/ Data on income distribution and indicators of poverty by region, by urban and rural areas, and by size of city are presented in Annex 1, Tables 4.1 to 4.7.

4/ After allowing for different price levels in urban and rural areas.

conclusions must be drawn with caution. 1/ However, the differences in performance in rural and urban areas in Table 1.13 are so dramatic that the general conclusion can be drawn with some confidence.

Table 1.13: TRENDS IN POVERTY INCIDENCE IN URBAN AND RURAL AREAS 1970-1980

(Percent of people with consumption below the designated poverty cut-off line)

Region	1970 a/	1976 b/	1978 c/	1980 d/
JAVA				
Urban	56.3	33.8	27.5	20.9 d/
Rural	67.0	62.7	65.0	52.9
Total	65.0	57.3	57.9	46.9
OTHER ISLANDS				
Urban	40.8	28.0	21.2	17.3
Rural	43.9	39.6	34.3	30.3
Total	43.2	37.3	31.8	28.0
INDONESIA				
Urban	50.7	31.5	25.2	19.7 /d
Rural	58.5	54.5	54.0	44.6
Total	57.1	50.1	48.5	39.8

a/ January - April.
b/ Average for year.
c/ February.
d/ Urban poverty incidence in 1980 is lower here than in Annex 1, Table 4.3 (where the percentage is 29.6% for urban Java and 25.8% for urban Indonesia). This is due to different definitions of urban areas. In this table the 1978 SUSENAS definition is used for 1980 data to facilitate comparison, while in the Annex, the 1980 definition is used.

Source: Social Expenditure Surveys (SUSENAS). For details of calculations, see note to Annex 1, Table 4.3.

1/ It is possible that urban poverty is underestimated by the SUSENAS surveys for three reasons. First, a substantial proportion of the poorest may be temporary or circular migrants not qualifying under the six month residency requirement. Second, to the extent that some of the poorest people live at the periphery of towns they may be outside the area defined as urban. Third, to the extent that very high and very low-income groups tend to be highly concentrated in particular neighbourhoods in cities, the cluster sampling approach may lead to their mis-estimation since the sampling proportion is lower for them. At least it is probable that the sampling error in the high and low tails of the income distribution is high.

1.42. The same picture emerges from an analysis of the real growth in consumption of the poorest 40% of the population. These growth rates are shown in Table 1.14 for selected periods over the decade of the 1970s. During the first six years of the decade real consumption of the poor in both

Table 1.14: REAL GROWTH OF CONSUMPTION OF THE POOREST 40 PERCENT OF THE POPULATION IN URBAN AND RURAL AREAS (Average % Growth per Year)

	Java		Outside Java		Indonesia a/		
Period	Rural	Urban	Rural	Urban	Rural	Urban	Total
1970-76	2.3	5.8	2.7	3.5	2.4	5.0	3.1
1976-78	-3.2	3.7	-3.3	5.8	-3.3	4.5	-1.1
1978-80	13.4	-0.8	12.8	5.1	10.4	-0.9	8.4
1970-80	2.8	4.4	2.9	4.2	2.4	4.0	3.0

a/ Indonesia-wide growth rates are apparently not always consistent with "Java" and "outside Java" growth rates. This problem is associated with the construction of price deflator (see Source).

Source: Annex 1, Table 4.2.

rural and urban areas rose, but the growth of urban per capita consumption was about twice the rate of that in rural areas. The period 1976 to 1978 was bad for the poor living in rural Java, as the terms of trade moved in favor of urban dwellers. This situation was reversed in the 1978-1980 period with rapid growth in incomes of the rural poor. Very high commodity prices 1/ in 1979 and 1980 greatly benefitted rural areas of Sumatra, Kalimantan and Sulawesi, while excellent rice crops on Java promoted rural activity and employment. These were very good years (extending through 1981) for rural Java, and growth like this cannot be expected to be repeated in the near future. During the same 1978-80 period, the poor in urban areas--who consume more imported goods than those in rural areas--suffered a decline in their living standards largely due to the November 1978 devaluation. For the decade as a whole, however, real per capita consumption of the urban poor grew on average at about 4% per year, much faster than the 2.4% achieved in rural areas.

1/ Due both to a boom in world prices and to the 1978 devaluation of the rupiah.

1.43. Urban dwellers on average enjoy higher incomes and are able to spend more on "non-necessary" items. For example, expenditures on consumer durables are much higher in urban areas; 58% of urban households possess a radio or cassette recorder, compared with 36% in rural areas; and 35% of urban households possess a television compared with 4% in rural areas. 1/ Urban dwellers spend slightly more (in real terms) on food, but it accounts for a smaller proportion of their total spending (60% compared with 74% in rural areas). Urban households consume less food than their rural counterparts but their diet is more varied and healthier. This is illustrated in Table 1.15. Because urban households consume less staple foods, they tend to receive less calories 2/ but more protein and micro-nutrients than those in rural areas. The nature of the nutrition problem in the cities is therefore somewhat different to that in the countryside. Overall, nutritional status in urban areas is probably not better than in rural areas, and among the poor it may be worse.

Table 1.15: DIET AND NUTRITIONAL STATUS IN URBAN AND RURAL AREAS - 1978

	URBAN	RURAL
A. Proportion of Household Food Budget Allocated to Different Types of Foods		
Rice	27.9	35.1
Corn, Cassava, Wheat and Potatoes	1.7	7.9
Fish, Meat, Eggs and Dairy Products	20.0	16.5
Vegetables, Legumes, Fruit and Others	50.4	40.5
	100.0	100.0
B. Proportion of the Population with Nutrient Deficiencies a/		
Calories	59	52
Protein	42	46
Iron	48	54
Vitamin A	48	54
Vitamin C	21	21

a/ 90% of U.S. recommended intake. This may overestimate calorie deficiency, particularly in urban areas, where energy requirements are less than in rural areas.

Note: Consumption levels of various foods in urban and rural areas by province are given in Annex 1, Table 4.6.

Source: Derived from 1978 SUSENAS; D. Chernichovsky and O. Meesook: "Patterns of Food Consumption and Nutrition in Indonesia"; World Bank, draft, July 1982.

1/ See Annex 1, Table 4.7, for more details.

2/ Urban dwellers require, on average, less calories than those in rural areas due to their different lifestyles. It is therefore not clear how comparable are the figures in Table 1.15.

1.44. Poverty incidence varies significantly by province and island as is seen in Table 1.16. The poorest urban areas are in Central and East Java. In general, urban poverty levels are greater in Java than in any of the other islands. Jakarta has the lowest rate of poverty incidence among urban areas in Java, but it is still higher on average than in cities in Sumatra and Kalimantan.

1.45. Income distribution and poverty incidence also vary by size of city and by topographical location but not in any clearly defined manner. Table 1.17 presents the results of an analysis of the 1978 SUSENAS, which shows a variation of income levels much greater than can be explained by geographical price differences. Apart from Jakarta, the largest city, which has the highest average incomes and smallest proportion of the population in the low-income category, there appears to be no intuitive explanation for the relationship between income distribtuion and city size portrayed in the table. Cities with a population of 50,000 - 100,000 have the lowest average incomes and the widest dispersion of income within the income distribution. Average incomes are similar in coastal, lowland and upland cities. Coastal cities and low-lying inland cities have a fairly equitable distribution of income, while upland cities exibit a substantial level of inequality.

1.46. Why average incomes in urban areas should be much higher and rising so much faster than in rural areas is not entirely clear. Per capita income depends upon wage rates (per unit time), hours worked, and dependency ratios. It has already be noted that hours worked are on average significantly higher in urban areas but this must be largely offset by a higher average dependency ratio in urban areas. The dependency ratio has been falling more rapidly in urban areas, explaining part of the difference in the growth of per capita consumption but not the level. The principal explanation of higher urban per capita consumption is higher wage rates. In many respects the rural and urban labor markets are highly integrated; the frequent circular and seasonal movement of labor from rural to urban areas tends to bring together wage rates for similar activities. Notwithstanding this, it appears that there are three principal reasons why real wage rates are higher in urban, and particularly in metropolitan, areas. First, potential migrants appear to require a premium in the form of higher incomes in order to move to urban areas. Generally, if incomes were the same in urban and rural areas, most migrants would stay at home. This tends to drive a wedge between urban and rural wage rates, helping to explain why, for example, a semi-skilled worker engaged in house construction in Jakarta earns Rp. 4,000 per day (mid 1983), while a similar worker earns only Rp. 2,000 per day in parts of kabupaten Bogor, only 40 kilometers away. This difference exceeds substantially any gap in living costs. Second, it appears that while rural and urban labor markets are well integrated with each other for similar activities, there is segmentation of labor markets <u>within</u> urban and rural areas; and urban areas tend to have

Table 1.16: INCIDENCE OF POVERTY AS PERCENT OF POPULATION BY PROVINCE AND ISLAND - 1980

	RURAL	URBAN
DKI Jakarta	--	17
West Java	34	26
Central Java	62	41
D.I. Yogyakarta	69	28
East Java	59	38
Sumatra	22	16
Kalimantan	12	8
Sulawesi	43	21
Other Islands	48	24

Source: Annex 1, Table 3.4, where details are given for each province.

Table 1.17: PROPORTION OF HOUSEHOLDS WITH DIFFERENT INCOMES, BY SIZE OF CITY AND TOPOGRAPHY - 1978

	Monthly income per Household		
	Less than Rp. 20,000	Less than Rp. 50,000	Over Rp. 100,000
Size of city Population			
Less than 20,000	29.0	70.7	5.9
20,000 - 50,000 a/	7.8	61.7	6.9
50,000 - 100,000	31.7	72.3	11.7
100,000 - 300,000	15.5	64.5	10.1
More than 300,000	22.8	68.4	9.1
Jakarta	6.2	41.5	27.1
Location of City			
Coastal	21.3	67.0	5.6
Inland Lowland	19.6	69.2	8.7
Inland Upland	28.3	63.0	16.5
Total Urban	20.4	62.9	12.2

a/ Too few households in sample to be statistically significant.

Source: Analysis of 1978 SUSENAS tapes, Annex 1, Table 4.5.

a higher proportion of relatively highly paid activities. 1/ This hypothesis appears to be supported by published wage data and micro-level studies. Modern sector wage rates are much higher than in traditional activities, and even within the urban informal sector there appears to be significant barriers to entry causing relatively high incomes in those activities. 2/ Finally, average earnings in urban areas are higher than in rural areas because on average urban dwellers are better educated (para 1.47), healthier (para 1.48), and probably more ambitious.

1.47. Access to Services - Education, Health and Electric Power. 3/ Investment in education has been impressive over the last decade in both urban and rural areas. As in most countries, educational opportunities are greater in urban than in rural areas. Table 1.18 shows the percentage of school-age children attending educational institutions in 1971 and 1980. Opportunities for primary education are now virtually universal, but rural children appear to begin school slightly later and have a higher drop-out rate. The gap between educational attainment of the population in urban and rural areas is marked as seen in Table 1.19. While 27% of urban inhabitants have received education beyond the primary level, in rural areas the figure is less than 6%. 4/ Particularly striking in the table is the relatively high level of education of migrants to urban areas, especially in comparison with those staying behind in rural areas.

1/ This controversial hypothesis is presented and supported in "Wages and Employment in Indonesia", World Bank, draft report No. 3586-IND, 1982. This report estimates a "wage ladder" for different activities.

2/ This is documented in a number of case studies. See for example Lea Jellenik "The Pondoks of Jakarta", op.cit.

3/ This section does not include a discussion of access to the key urban services that are the main theme of this report. This is the subject of Chapter 2.

4/ To the extent that some students from rural areas move to the cities to continue their education, the gap between urban and rural may be exaggerated. However data on educational attainment by age group (Annex 1, Table 5.1) suggests that even after correcting for this effect, educational attainment levels are much higher in urban areas.

Table 1.18: PERCENTAGE OF SCHOOL AGE POPULATION ATTENDING SCHOOL a/ BY AGE GROUP

	5-9 Years		10-14 Years		15-19 Years		20-24 Years	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
1971 Census	43.8	33.1	75.4	58.5	42.3	18.1	16.1	3.2
1980 Census	69.2	55.3	89.5	77.0	53.4	25.7	15.4	3.4

a/ Includes school, university, technical colleges and full-time training courses.

Source: 1971 Population Census, Series D (March 1975).
1980 Population Census, Series S, No. 2 (February 1983).

Table 1.19: EDUCATIONAL ATTAINMENT OF URBAN AND RURAL DWELLERS AND RECENT MIGRANTS - 1980 (Percentage distribution)

	Urban		Rural	
	Inmigrants a/	Total	Inmigrants a/	Total
A. Highest Level of Education Attained				
No Schooling	8.1	14.3	18.8	31.6
Primary	49.9	58.4	63.9	62.7
Junior High	16.2	1.4	3.5	
Senior High and Above	25.8	13.2	8.9	2.2
Total	100.0	100.0	100.0	100.0
B. Percent Illiterate				
Age 15-19		5.2		16.0
20-29		6.6		21.8
Above 30		27.7		51.7

a/ Defined as those who have migrated in the previous four years.

Source: 1980 Census, Series S, No. 1; See: "Interprovincial Migration Study", World Bank, 1983 (forthcoming).

1.48. Important progress has been made in the field of health in the last few years due partly to a major investment in kecamatan-level health centres (Puskesmas) particularly in rural areas. However, the level of access and the quality of service is still generally much higher in urban than in rural areas. 1/ For example, while 63% of pregnant women in urban areas in 1978 had a professional prenatal examination, only 36% of rural women had such a service. About a quarter of urban households reported some expenditure for the services of a physician, nurse or health worker in 1978, about twice the percentage of rural households reporting such expenditures. The 1980 Household Health Survey indicated lower morbidity (sickness) in urban than in rural areas; the difference was significant but not major. 2/ Differences in the patterns of sickness between urban and rural areas are probably more significant than differences in overall levels, with urban areas displaying an increasing proportion of "modern" diseases, associated with new occupational hazards, greater contact with motor vehicles, social dislocation and crowding; more traditional diseases such as malaria and anemia are declining more rapidly in relative importance in urban than in rural areas. Within urban kampungs health has been found to be clearly related with levels of income and education, and with the source of drinking water and sanitary condition. A recent survey 3/ found in particular that the incidence of ascariasis (roundworm) and infections skin diseases among children under five and reported incidence of diarrhea and skin irritation in the household were strongly related to access to toilet facilities and clean water.

1.49. Investment in power generation and distribution has been a priority for the Government over the last decade, but the level of coverage is still low by international standards. Per capita energy consumption, estimated at 266 kilograms of coal equivalent in 1980, although double the level of 1971, was still well below the average for low-income countries (368 KCE) and only 27% of the average for middle-income countries (987 KCE). About half of urban households have electric power in their homes compared with only 5% of rural households (Table 1.20). Casual observation and informal surveys suggest that the absence of electric power in rural communities is a significant disincentive to invest and an incentive to move to urban areas, particularly for those in the middle and upper part of the income distribution. Urban dwellers outside Java are, surprisingly, better served by electric power than those on Java; and within Java the distribution is much wider in Jakarta and West Java than in the central and eastern part of the island. Among urban areas, access to electric power is fairly strongly correlated with the rate of in-migration.

1/ See Annex 1, Tables 5.2 and 5.3.

2/ "Report on the 1980 Household Health Survey", Department of Health, 1982.

3/ Impact Evaluation Study of KIP in Cirebon, Bogor, Tanggerang and Bekasi; JUDC/Cipta Karya, March 1983.

Table 1.20: ELECTRIC POWER - PERCENTAGE OF HOUSEHOLDS USING ELECTRICITY FOR LIGHTING IN URBAN AND RURAL AREAS - 1980

	Urban	Rural
Sumatra	49	8
Java	47	4
Jakarta and West Java	51	6
Other Java	44	3
Kalimantan	61	10
Sulawesi	52	8
Other Islands	47	5
Indonesia	48	5

Source: 1980 Census, Series S, No. 2. See Annex 1, Table 5.4 for details by province and progress since 1971.

Urbanization in the Coming Years

1.50. Based upon probable rates of decline in fertility and mortality and on the likely trends in the pattern of migration among provinces, estimates of Indonesia's population by province have been made for the coming two decades. 1/ The growth of Indonesia's population as a whole is projected to fall from an average annual rate of 2.33% in the 1970s to 2.04% in the 1980s and to 1.78% in the 1990s. Despite this decline, it is unlikely that the growth of the urban population will fall below the current 4%, and it may accelerate further. There are three broad reasons for this outlook. First, it is likely that opportunities will be greater and incomes and access to services more attractive in urban areas. 2/ Agricultural growth on Java is not expected to be as high during the 1980s as it was during the second half of the 1970s 3/

1/ See Annex 1, Table 1.10 for provincial estimates. For more details see "Demographic Patterns and Population Projections, 1980 - 2000, by Province"; Vol. III of "Indonesia: Selected Issues in Spatial Development", World Bank, 1983 (forthcoming).

2/ Despite important cultural and social reasons for migration, the evidence suggests that by far the most important reason for migration is economic. See. "Migration, Urbanization and Development in Indonesia", ESCAP, New York, 1981, pp. 106-110.

3/ See for example, Indonesia - Policies for Growth with Lower Oil Prices, World Bank, May 1983, p. 27.

and despite continued impressive investment in agriculture it is probable that agricultural employment on Java will actually decline in the coming years. This stands in sharp and serious contrast to the one million new entrants to the labor force in rural Java each year.

1.51. Second, these new entrants to the labor force will be better educated than ever before, and experience suggests that educated young people are less likely to be satisfied with life in rural areas than are those with no formal education. Improvements in access to education have been dramatic, and their effects should not be underestimated. In 1970, 15 million students were attending schools and colleges in Indonesia. By 1980 this number had more than doubled to 31 million and by 1990 may have reached 50 million. Until now the relatively low proportion of the population with formal education has been an important explanation of the low level of urbanization in Indonesia. While continued investment in education is urgent and essential for Indonesia's long-term growth and prosperity, its effects on migration are sure to be quite serious.

1.52. Third, it is possible that many seasonal and circular migrants, who so far have not qualified as urban in the formal statistics, will settle in cities on a more permanent basis. There are indications that important changes are taking place in the attitudes of many of those who until now have been working in cities only on an itinerant basis. Links between city and countryside have traditionally been extremely strong, with many urban dwellers still fundamentally rural in outlook and loyalties. Now, after several years of circular migration to urban areas, many migrants may be developing more permanent urban roots, visiting their home villages less frequently and for shorter periods. Higher incomes in the cities have facilitated savings, perhaps making it possible to purchase more permanent accommodation. Children of migrants are growing up with weaker ties to the rural village. To the extent that this characterization is correct, it has important implications not only for the level and growth of the permanent urban population, but also for the process of adjustment to shifts in the relative economic fortunes of urban and rural areas. Traditionally, the high degree of integration between urban and rural labor markets has played an important role as "safety valve" at times of slow or negative economic growth either in rural or urban areas, as workers migrated, temporarily reducing the intensity of the hardship. To the extent that the proportion of urban dwellers able to move back to rural areas is reduced, this important adjustment mechanism is also reduced, with unpredictable and possibly serious economic and social effects.

1.53. Table 1.21 presents the urban and total populations for 1990 and 2000 based on the assumptions suggested above. The urban population is expected to rise by 16 million in the present decade, equivalent to half the increase in the total population. In the 1990s an additional 23 million would be added to Indonesia's urban areas, equivalent to two thirds of the increase in the total population during the period. By the year 2000 about a third of Indonesia's residents would live in urban areas, still well below the (1980) average of 46% for middle-income countries as a whole.

Table 1.21: PROJECTED GROWTH OF TOTAL AND URBAN POPULATION IN THE 1980s AND 1990s

	Mid-Year Population				Increase in Population	
	1971	1980	1990	2000	1980-1990	1990-2000
Total (million)	119.0	146.0	178.7	213.6	32.7	34.9
Urban (million)	22.9	32.6	48.6	71.9	16.0	23.3
Percent Urban	19.2	22.3	27.2	33.7	49	67

Source: Bank Staff estimates. Total population projected to grow at rates of 2.04% and 1.78% per year in the 1980s and 1990s respectively (Annex 1, Table 1.10). Urban population projected to grow at 4.0% per year throughout the period.

Implications for an Urban Strategy

1.54. The rate of urbanization projected above for the next two decades is not inevitable. It can be influenced by both exogenous factors and by government policies. One of the major uncertainties is the effect of a slowdown of economic growth on the rate of migration to urban areas. During the 1970s, the economy grew on average by over 7.5% a year. Since 1981, the rate of growth has been much slower due to a deterioration in the international oil market, and for the 1980s as a whole is not likely to average more than about 5% a year. There is some informal indication that urban dwellers, particularly in the service sector, have suffered declining real incomes in the last year and that circular migration may have fallen in 1983, but it is by no means certain that over the longer run, slower growth would result in slower urbanization, particularly since the rural labor force is growing more rapidly than ever before. A great deal depends on the extent to which the rate of economic growth can be maintained in rural areas in particular through labor intensive investments and through progress in the agricultural sector.

1.55. There is probably more scope for government policy in influencing the pattern of urbanization than in controlling its overall level. The largest cities will continue to grow and, under the present structure of incentives, there will be a tendency for the larger cities to absorb the bulk of the increased urban population. There is not necessarily anything inherently inefficient or even undesirable about this; larger cities may be more "efficient" than smaller cities. However, it is desirable that through pricing, regulatory and investment policies, the government provides an unbiased environment in which medium and smaller cities can grow to their full potential. Experience suggests that regulations prohibiting investment in certain areas and prohibiting new migrants from settling in major cities are likely to be ineffective and even counterproductive, probably leading to a decline in overall investment and an increasing proportion of illegal residents in major

cities, placing an undue burden on scarce administrative resources and providing opportunities for corruption. A more appropriate set of policies would include those designed to set prices of publicly provided services closer to their true economic costs (including costs of congestion and diseconomies of agglomeration), and an investment policy which gives a high priority to the provision of services in secondary and peripheral centres and to improving communication among centres. This report does not attempt to suggest an overall urban strategy for Indonesia; an exercise to formulate such a strategy is currently being undertaken by the Government. 1/ The remaining chapters of this report have a more modest goal: to analyze recent progress in the provision of urban services, to recommend some rough targets for the coming years, and to suggest how these new investments might be implemented and financed.

1.56. This chapter has made two broad points--that the rate of urbanization is high and is likely continue at least at the same rate, and that urban dwellers are on the whole better off in material terms than those in rural areas. This is not meant to imply that poverty in urban areas is no longer a problem; on the contrary, there are still some very poor people in the cities of Indonesia. Income inequalities are serious and, as the next chapter suggests, crowding in some urban areas has resulted in a deterioration in the quality of life and in in extremely unsanitary conditions. The need for continued expansion in investment in urban services is obvious. However, on average, real incomes and the level of access to social services are higher in urban areas, and the urban poor (as measured, for example, by the bottom 40% of the income distribution) are generally better off than the rural poor. These conclusions have important implications for the government's investment and pricing policies.

1.57. Differences in income levels and access to services play a central role in influencing migration behaviour. Average income levels by province and city appear to be highly correlated with the pattern of migration. This is a natural part of the development process and, to the extent that it reflects a shifting relative value of labor in industry and agriculture, should not be discouraged. However it is important that the process not be accelerated by investment and incentive policies which attract migrants to urban areas more rapidly than justified by the industrialization process. While it is appropriate that public investment per person should continue to expand rapidly, and should remain higher than per capita investment in rural areas, it is usually not appropriate (and not necessary) to provide large subsidies for these urban services, either on grounds of equity or efficiency. Alterna- tively, to the extent that flexibility is possible in the pricing of services, consideration might be given to adjusting the level of subsidy, if any is felt necessary, according to the ability of beneficiaries, as a group, to pay. There would appear, for example, to be much less justification for subsidizing services in the cities of Sumatra, Kalimantan and Sulawesi and in Jakarta than in cities of Central and East Java and in the Eastern Islands.

1/ The Government, with assistance from the UNDP has embarked upon a National Urban Development Strategy (NUDS) study, a joint effort of the Ministries of Public Works, Interior and Finance and BAPPENAS. Its final reports are expected in early 1985.

1.58. A high level of investment in urban services will be necessary for three broad reasons. First, a large proportion of the existing urban population is still without basic services. This implies that existing basic needs programs must be continued in the large and medium-sized cities and expanded to reach the smaller cities. Second, services will have to be provided for the 40 million newcomers to urban areas over the next two decades. Some of the new arrivals will settle in established urban kampungs and can be catered for under expanded existing programs. Millions, however, will have to settle on the periphery of towns, in areas that are not yet planned and are currently only semi-urban in character. This poses new challenges and opportunities for local governments. The nature and organization of investments involved here--including Guided Land Development and the creation of satelite towns for industry and residence--are different to those of existing urban programs. Finally, the continued inflow of population into the major metropolitan areas is already causing a new generation of problems associated with pollution and overcrowding. Greater Jakarta (including kabupaten Tanggerang, Bekasi and Bogor and kotamadya Bogor) will probably double in size to 20 million before the year 2000, but it is already experiencing severe problems of water quality and availability, and congestion. This new generation of problems is particularly expensive to solve (see Chapter 2).

Chapter 2: URBAN SERVICES - PROGRESS AND PROSPECTS

Overview

2.01. This chapter assesses the current level of urban services, recent progress during the REPELITA III period, and the investment program required to meet the service needs of the rapidly growing urban population in the coming five-year plan period. For the purposes of the present discussion, "urban" or "municipal" services include water supply, drainage, sanitation, roads and footpaths, urban transport and housing. 1/ This chapter will focus on physical and technical issues involved in the programs. Although overall expenditure requirements will be discussed, this chapter does not explore how the program has been or will be financed; this is the subject of Chapter 4. Similarly, while physical achievements and weaknesses of the various programs are discussed here, issues of administration, implementation capacity and manpower are left until Chapter 3.

2.02. A continuing problem both for the government and for this study has been the lack of information on the level of service and quality of infrastructure in Indonesian cities, and the fragmentation of data on expenditures and revenues. For this chapter a number of sources have been employed, including the 1980 census, the 1978 and 1980 SUSENAS surveys, central government sectoral data on expenditure and physical achievements, and a sample survey of local government records. Sometimes it has been necessary to use judgement in selecting from the various data sources. Detailed data on physical conditions and achievements, cost levels and calculations of investment requirements are presented in Annex II, while all financial data is given in Annex IV.

2.03. Table 2.1 presents estimates of average annual spending on the various urban services in the first four years of REPELITA III by all levels of government. 2/ Total investment in these urban services was equivalent to about 0.55% of GDP or 2.5% of total gross fixed investment in the economy; an average of about Rp. 7,700 was invested per urban resident during the period. It is of course very difficult to define an appropriate target for public sector involvement in, and expenditures on, urban services. But there is no

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1/ There are also a number of smaller "municipal" services such as markets, fire service, parks, street lighting, etc., which, although not considered specifically here, have many of the same characteristics. Major sectoral services such as education and health are not included on the grounds that the issues involved in these sectors are generally independent of whether in urban or rural areas.

2/ There is substantial yearly variation of expenditure on some of the services, so a four-year average is given. Details of annual expenditures are given in Annex IV.

doubt that even for the present urban population, let alone for the 1.6 million new urban residents expected each year during REPELITA IV, that total spending on these services must be increased. 1/

Table 2.1: TOTAL ANNUAL SPENDING ON URBAN SERVICES BY CENTRAL AND LOCAL AUTHORITIES /a - AVERAGE 1979/80 TO 1982/83
(Rp. Billion, current prices)

Investment Expenditure	Central Government	Local Authorities /b	Total	Percent of Total	Percent of GDP
Water Supply	72.2	4.0	76.2	29.0	0.16
Drainage and Sanitation /c	18.2	16.5	34.7	13.2	0.07
Kampung Improvement (KIP)	11.9	6.0	17.9	6.8	0.04
Urban Roads	17.5	40.0	57.5	21.9	0.12
Traffic Management	2.8	1.4	4.2	1.6	0.01
Public Transport	40.0	1.6	41.6	15.8	0.09
Others /d	3.0	27.9	30.9	11.7	0.06
Total	165.6	97.4	263.0	100.0	0.55
Routine Expenditure	n.a.	50	n.a.	-	0.11

/a Includes only expenditures actually incurred in urban areas; i.e., excludes central overhead.
/b Includes provincial, district (kabupaten/kotamadya) and urban village (kelurahan) spending; includes local spending of central grants to local authorities.
/c Includes cleansing services, human and solid waste disposal, drainage and flood prevention; the latter two services accounting for the bulk of central spending.
/d Includes markets, fire service, parks, etc.

Source: Departments of Public Works and Finance and a sample survey of 27 kabupaten/kotamadya accounts.

1/ By international standards, the proportion of national resources allocated to these services in Indonesia is low. For example, it has been suggested that it is appropriate to spend between 1% and 3% of GNP on water supply and sanitation (urban and rural, including routine expenditure); Indonesia's expenditure is well below the bottom of this range. See World Bank: Implementing Programs of Human Development, Staff Working Paper No. 403, July 1980, p.124; and Indonesia: Financial Resources and Human Development in the Eighties, May 1982, Chapter 5.

2.04. The rest of this chapter is divided into six parts, each dealing with specific sectors:

A Water Supply
B Drainage and Sanitation
C The Kampung Improvement Program
D Urban Transport: Roads, Traffic Management and Public Transport
E Housing and Land Development

Although, for convenience, each of these services are discussed independently, it is always important to bear in mind that urban infrastructure networks are closely interrelated and require integrated planning and implementation. For each of these services, the discussion falls into three broad parts. First, recent progress in the sector and the impact of the program is reviewed; second, important issues for the sector in the coming five years are identified; and finally, the size and composition of the future program is discussed. For some of the services, government targets and expenditure programs have already been established or proposed. Where no such programs have been established it has been necessary to make a rough independent assessment of investment requirements.

A. URBAN WATER SUPPLY

Recent Progress and Current Conditions

2.05. Good progress has been made in the last few years in providing clean water to urban areas. In the 3-1/2 years between the November 1980 census and the end of REPELITA III (March 1984) it is estimated that the proportion of urban dwellers with access to reasonably clean water (piped water or pump) will have increased from about 35% to 47%. 1/ Over 700,000 additional families, or 3.8 million individuals, have obtained access to clean water during this short period--an impressive achievement.

2.06. This is not to say that the provision of water was ignored before the start of the 1980s. Table 2.2 shows that in REPELITAs I (1969-1974) and II (1974-1979) production capacity more than doubled from 9,000 litres per second (lps) to over 20,000 lps. But at the beginning of REPELITA III, with deteriorating environmental conditions in many cities, it was recognised that the pace of development must be accelerated. Table 2.3 summarises 1980 census data on households' primary source of drinking water and washing water in urban and rural areas giving a reasonable picture of the situation at the beginning of REPELITA III. Piped water was available to just over a quarter of all urban households, and was virtually non-existent in rural areas. 2/ Almost half of all households using piped water for drinking used an

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1/ This is an average figure. There is great variation within and between cities in per capita water production and consumption (see para 2.10 and Table 2.7).

2/ Piped water is more essential in urban areas because conditions are too crowded and water supplies too scarce and polluted to be exploited individually.

Table 2.2: URBAN AND SEMI-URBAN WATER SUPPLY: INCREASED PRODUCTION CAPACITY IN REPELITAs I, II AND III BY ISLAND
(thousand liters per second)

	Production Capacity 1969	Increase in Capacity REPELITA I	REPELITA II	REPELITA III	Production Capacity March 1984 /a	Number of cities with piped water schemes /b
A. Urban						
Sumatra	1.69	0.72	0.97	4.00	7.38	118
Java	6.79	4.37	2.06	8.26	21.48	175
Kalimantan	0.18	0.27	0.36	1.22	2.03	41
Sulawesi	0.22	0.63	0.97	1.06	2.88	59
Eastern Islands	0.12	0.24	0.64	1.13	2.13	68
Total	9.00	6.22	5.00	15.67	35.90 /c	461 /c
B. Semi Urban (IKK Program)	-	-	-	2.23 /c	2.23 /c	427 /c

/a Includes projections for final year of REPELITA III.
/b As of March 1984.
/c This overstates actual capacity as of March 1984; includes many projects still under construction, and cities having very partial distribution systems.

Source: Department of Public Works, D.G. Cipta Karya.

Table 2.3: PRIMARY SOURCE OF WATER FOR DRINKING AND WASHING IN URBAN AND RURAL AREAS IN 1980
(Percentage Distribution)

	Pipe	Pump	Well	Other /a	Total
A. URBAN					
Drinking	26	12	53	9	100
Washing	15	13	58	14	100
B. RURAL					
Drinking	2	2	59	37	100
Washing	1	2	49	48	100

/a Includes river, spring, rainwater, etc.

Source: 1980 Census, Series S. Annex II, Tables 1.2 - 1.5.

Table 2.4: URBAN WATER SUPPLY: THE SITUATION IN NOVEMBER 1980
PRIMARY SOURCE OF DRINKING WATER FOR URBAN HOUSEHOLDS BY ISLAND
(Percentage Distribution)

	Pipe	Pump	Well	Other	Total
Sumatra	28	4	56	12	100
Java	25	14	54	7	100
Kalimantan	29	8	21	42	100
Sulawesi	30	5	60	5	100
Eastern Islands	35	3	49	13	100
Indonesia	26.4	11.7	52.7	9.2	100

Note: Total number of urban households = 6.17 million, with average 5.3 persons per household.

Source: 1980 Census, Series S, No. 2; Annex II, Table 2.1.

alternative source for bathing and washing, in order to save money or for reasons of privacy. Data on the primary source of drinking water therefore gives an upper bound of households with "access" to piped water. Table 2.4 gives a breakdown of the primary source of drinking water by island. Access to piped water is fairly constant across regions, with Java showing a slightly lower access than the other islands. Defining access to "clean" or "pure" water is not easy; however it is reasonable to assume that piped water and most water from pumps is clean enough to drink directly after boiling. By this definition, about 35% of Indonesia's urban households had access to reasonably clean water in 1980, well below the average of 71% in other East Asian middle-income countries. 1/

2.07. Faced with the huge unmet need at the beginning of REPELITA III, the government embarked upon a much expanded program, giving priority to middle- and low-income groups and to medium and small towns. A "basic needs approach" (BNA) was established for cities and towns above 20,000 population whereby a target of 60% of the population would be served with an average of 60 liters per capita per day (lcd) by the end of REPELITA III, with half of all new beneficiaries served through home connections and half through public standpipes. An additional allowance is made for commerce and industry

1/ Access to "safe" water is estimated (1978-80) at 66% in the Philippines, 93% in Malaysia, 49% in Thailand, 83% in India, 60% in Pakistan, and 87% in Brazil. See Annex II, Table 1.1.

according to the size of city. 1/ This basic level of service is financed through central government grants (through Public Works DIPs), while costs for any higher level of service can be financed through loans to the local authority or water company (PDAM). Piped water supply has now been introduced to 461 towns and cities according to this approach.

2.08. For smaller sub-district center towns, (Ibukota Kecamatan or IKKs), a similar approach has been adopted, but with simpler standards (45 lpd) and technology. By March 1984, projects had started in 427 towns, each with an average population of about 6000. During REPELITA IV the IKK program is scheduled to cover a total of 2500 towns and villages, although with the current budgetary shortfall, this target may have to be cut back. Since most of the beneficiaries of this program are not "urban" (as defined in Chapter 1), the program will not be discussed in detail here; but the program's achievements and the criteria for selecting towns are given in Annex II, Table 1.9.

2.09. In terms of water production, the REPELITA III targets have already been achieved; production capacity is now over 30,000 lps, more than sufficient to satisfy 60% of the urban population with 60 lcd, and an average allowance of 25% for non-residential uses even allowing for 40% losses. However, the distribution network has lagged far behind production capacity. Table 2.5 illustrates the build-up of the program during REPELITA III. In the early years emphasis was given to expanding production capacity, while now the emphasis is on expending the reticulation system and installation of house connections.

2.10. No accurate data are available on the total number of water connections throughout Indonesia's urban areas. However based on the findings of the 1980 census and what is known about additional investment since then, it is possible to arrive at a reasonably accurate estimate of current access to clean water. The overall picture for the end of REPELITA III is presented in Table 2.6. If the target includes access to relatively clean water from a pump, it appears that about 47% of urban households now have access; 36% of

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1/ Allowances for commerce and industry are made as a proportion of basic needs requirements for drinking water, to be added to BNA allowances: 80% in metropolitan areas, 40% in cities, 20% in middle-sized cities, and 10% in small towns. (No allowance is made in very small (IKK) towns.) In addition 20% losses are assumed throughout.

Table 2.5: URBAN WATER SUPPLY: REPORTED NEW HOUSE CONNECTIONS AND PUBLIC STANDPIPES IN REPELITA III
(in thousands)

	1979/80	1980/81	1981/82	1982/83	1983/84	Total
	-------	Reported	Actual	-----	(estimated)	REPELITA III
New Connections						
House Connections	24.5	51.7	31.0	49.2	68.4	254.8
Public Standpipes	1.4	2.0	1.5	1.9	2.7	9.5
Beneficiary Households						
House Connections /a	36.7	77.6	46.5	73.8	102.6	337.2
Public Standpipes /b	28.0	40.0	30.0	38.0	54.0	190.0
Total	64.7	117.6	76.5	111.8	156.6	527.2

/a Assumed 1.5 households per connection.

/b Assumed 20 households per connection. This is lower than is sometimes assumed in government planning documents, which assume as many as 300 beneficiaries per standpipe (56 families) but for reasons associated with the pricing and organization of public standpipes (para 5.04), it is the impression of the mission preparing this report, based upon a number of casual interviews that only rarely do more than 25 or 30 families benefit from a public standpipe, and often less than 20.

Source: Department of Public Works, Cipta Karya (including projection for 1983/84).

Table 2.6: ACCESS TO CLEAN WATER AT END OF REPELITA III
(March 1984)

Source of Water	Households ('000)	Percent of all 1984 Urban Households /a
Piped Water	2,326	36
Existing Connections in November 1980 /b	1631	25
Additions (Nov.1980-March 1984)	695	(11)
Central Government Program /c	(463)	(7)
Other Additions /d	(232)	(4)
Pumps /e	727	11
Total	3,035	47

/a Number of urban households assumed to growth at 2% p.a. from 1980 to 1983/84.

/b Source: 1980 Census. Percentage adjusted for projected 1984 population.

/c Source: Annex II, Table 1.8.

/d Includes independent schemes, e.g., some PERUMNAS sites, docks, public buildings, and expansions by local water authorities independent of central government development budget (e.g., Jakarta). Assumed to be half of central government program.

/e Proportion of households using pump assumed to stay the same as in 1980.

households obtain their drinking water from a piped system and another 11% from pumps. These average figures must, however, be used with some caution. Table 2.7 displays the water production, house connections and standpipe connections for a number of cities visited, compared to the BNA standards. They are producing (after losses and allowances for non-residential uses) on average 190% of the BNA standard (except Jakarta) and an average of 143% of the BNA standard for house connections. Public taps, however, reach on average only 15% of the BNA standard. Moreover, in several of the cities visited some standpipes were broken and others only produced a small flow, causing long waiting lines. The causes of these problems are discussed further in paras. 2.13 and 5.04. The need to increase the number of standpipes is even more important than Table 2.7 indicates. A ratio of 1 standpipe to 300 users will usually require a concessionaire to operate the tap, thus increasing charges to the poorest consumers. As distance to the tap increases, the cost in time to a household to walk to a tap rises, encouraging the use of more polluted, but easily available supplies, or alternatively purchasing from a vendor at high prices. A distribution of standpipes which would allow each to be metered and controlled by a limited group of households (say 7-12) who would jointly pay the PDAM would appear to be both desirable and achievable. On the basis of one tap per 100 users, the average level of provision at present is only about 4% of the desirable standard. An early task in REPELITA IV should therefore be to improve the secondary service mains, increase standpipe provision, improve their management, and integrate them into the sanitation system.

2.11. While the overall national average for water production meets BNA standards, since many cities are producing above the standard, and higher-income residents consume far more than the standard, there are still locations with inadequate supplies, mostly among the smaller cities, many of which have not yet received a major water supply project. Estimates for eliminating this backlog in production, and expanding standpipes with associated secondary mains to the 1:100 person standard would amount to Rp. 147 billion 1/ representing about two years of average REPELITA III investments in real terms.

Issues for REPELITA IV

2.12. Allocation of Investment Among Urban Areas. A number of important allocation decisions must be made concerning the relative priorities of towns and cities in different parts of the country and among large, medium and small towns. Until recently the allocation of expenditures has followed a fairly straightforward pattern; beginning with the largest cities in REPELITAs I and II, the program has since been expanded to medium and smaller towns. However a closer examination of expenditure data for REPELITA III reveals that there is no consistent pattern in the allocation of central resources to provinces or municipalities (Chapter 4). Per capita investment of central government

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1/ See Annex II, Note A for details.

Table 2.7: WATER SUPPLY PRODUCTION AND DISTRIBUTION ACROSS SAMPLE CITIES (1982)

City	Population	Basic need /a water l/sec	Production net l/sec /b	Production % of basic need	Distribution System: House connections Target /c	House connections Realized	House connections %	Public taps Target /d	Public taps Realized	Public taps %
Jakarta	6,556,000	2,731.7	2,700	99	196,680	126,000	64	6,556	1,500	23
Surabaya	2,200,000	917	2,037	222	66,000	90,000	136	2,200	3,500	159
Bandung	1,400,000	583	652	107	42,000	?		1,400	76	5
Palembang	800,000	333	?		24,000	?		800	30	0.4
Banjirmasin	400,000	167	?		12,000	?		400	190	48
Malang	315,000	131	216	164	9,450	17,620	186	315	70	22
Padang	260,000	108	129	119	7,800	9,370	120	260	75	29
Denpasar	250,000	104	?		7,500	?		250	28	11
Cirebon	65,000	64	516	747	4,950	9,000	182	165	40	24
Madiun	50,000	63	25	40	4,500	?		150	0	0
Pekanbaru	146,000	61	96	160	4,380	6,023	137	146	69	47
Bukittinggi	50,000	21	42	220	1,500	2,700	180	50	31	62
Total, excluding Jakarta		1,952.5	3,713 /e	190% /e			143%	3,936 /f	609 /f	15%

/a 60 l/c/d for 60% of population.
/b 40% for losses (55% in Jakarta) and 25% for non-residential uses already deducted.
/c Based on 10 persons served per house connection. BNA standard of 50% of 60% of total population.
/d Based on 300 persons served.
/e For cities where actual production is shown.
/f Excluding Surabaya and Jakarta.

Sources: City PDAMS.

funds varies greatly 1/ and is uncorrelated with either the size or the local resource base of the cities concerned. While part of the explanation for this lies in the "lumpy" investment requirements for new capital works schemes, the initial choice of city and the subsequent level of central government grant does not seem to bear any close relation with existing relative water deficiencies, or water supply as a constraint to industrial expansion, nor with the ability or willingness of the local authorities to finance part of the investment themselves. This may not have been a serious problem so far. Almost all cities and towns have urgently needed improved water facilities and almost all schemes have been fully justified; choosing among cities has been secondary to the urgency of getting on with the job. However for the coming years, with central funds more scarce and greater emphasis being given to smaller towns and rural areas, and yet with major needs still existing in some large and middle-sized towns, it is important to establish a more systematic framework for making allocation decisions. For the IKK program, a simple points system has been established which provides a useful basis for choosing among towns. For the medium and larger towns, it is particularly desirable that improved information be obtained on existing deficiencies and on the financial capability of the towns themselves to contribute to investment costs. 2/

2.13. Allocation of Water Within Urban Areas. In establishing the Basic Needs Approach the government has specifically emphasised the needs of the urban poor; households unable to pay for a house-connection would obtain water from public standpipes. But the program for constructing public standpipes has lagged far behind that for house-connections. As illustrated in Tables 2.5 and 2.7, the guidelines established by the government, whereby half of all beneficiaries would use water from standpipes, have not been followed. The reason is simple; the PDAMs, which are expected to operate as financially independent corporations, lose money every time they construct a standpipe while making a profit from new house-connections; they therefore find excuses for not constructing standpipes. 3/ For example, a common argument made by PDAM directors and local government officials is that public standpipes are unpopular; this is often true, but is due to the system of administration and water charges rather than to some inherent inefficiency or cultural dislike. These issues are discussed in more details in Chapter 5 (paras. 5.04 - 5.05) but are raised here for their general significance with regard to the

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1/ Average annual per capita expenditure on water supply among municipalities in REPELITA III ranged from Rp. 91 to Rp. 11,112, with an average of Rp. 1,783.

2/ The GOI/UNDP National Urban Development Strategy (NUDS) study is charged with the responsibility of developing an overall urban strategy for Indonesia. It is hoped that this will establish a detailed framework for making investment decisions in water supply and in other urban services.

3/ In addition many PDAMs involved in expansion schemes claim not to be aware of the government guidelines concerning standpipes.

distribution of BNA funds. There is a concern that the 47% of urban households now benefitting from clean water may be mainly the better-off half. The layout of primary reticulation systems, financed by central government grants, is often determined by the greatest effective demand for house-connections, and the PDAMs are actively extending the secondary distribution network to those households able to afford it. They are often not using central government funds and house connection fees to cross-subsidize a primary distribution network with standpipes in the poorer areas. This is not too serious as long as the demand for new house-connections is strong; at least the system is being expanded and more households are benefitting from clean water. However, where 50-60% of households have home connections it is probable that demand for new connections will dry up since the poorer 40% cannot afford the (average) Rp. 120,000 connection fee. The PDAM may then find itself with no internal funds for further expansion of the network, no more grant funds from the central government, and no incentive to borrow since the poorer areas would probably not generate enough revenue to repay loans. Reaching the target of 75% urban coverage during REPELITA IV may then become very difficult. The root of this problem lies in the fact that capital costs of house-connections are recoverable, while those of standpipes are not. It is therefore suggested that central government capital grants should in the future be more specifically earmarked for reticulation and standpipe construction in poorer areas. A substantial expansion of public or semi-public standpipes in REPELITA IV is highly desirable, preferably in conjunction with a major expansion in the number of small semi-public washhouse/toilets (MCKs; see para. 2.27).

2.14. Technical Concerns. The BNA approach has been very successful in establishing simpler design methods and speeding construction through the use of standardized production plants. However, some technical points still need attention, including (i) water source selection to ensure that least-cost solutions are used; (ii) ensuring that water supply is synchronized with sanitation facilities; (iii) reviewing the policy of limiting supply to 60% (or 75% for REPELITA IV) of the existing population. Since consumers closer to the source draw off much of the available supply this results in low pressure and lack of supply in the perimeter of the system together with the danger of negative pressure and consequent pollution of the drinking water. Moreover, as urban areas expand, if the distribution system is sized to match BNA standards, a duplicate distribution system will need to be installed in a relatively short time; 1/ and (iv) higher priority given to operation and maintenance, particularly to leakage detection, pipe rehabilitation and stricter metering.

2.15. Water Resource Planning. Indonesia is well endowed with rainfall and, in general, surface and ground water is more than sufficient to meet the

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1/ See also D.T. Luria and J. Arboleda, Evaluation of Design Standards for IKK Water Supply Systems, October 1983, Paper prepared for D.J. Cipta Karya.

Table 2.8: WATER NEEDS AND AVAILABILITY

	Indonesia	J a v a	Java as % of Indonesia
	-- Million M3 per Year --		
Projected 1990 Needs			
Agriculture	137,000	62,000	48
Industry	500	200	40
Households	6,600	4,100	62
Total	144,100	66,300	46
Availability			
Surface (firm flow)	703,000	44,000	6
Groundwater	475,000	24,000	5
Total	1,178,000	68,000	6
Needs as % of Availability	12	98	-

Source: Department of Public Works, D.G. Water Resources Development.

needs of agriculture, industry and household use. However, as seen in Table 2.8, while water is relatively abundant for the country as a whole, the water balance in Java is becoming critical; projected 1990 demand for water in Java amounts to 98% of estimated natural availability. 1/ In the coming years it will be necessary to coordinate carefully the various conflicting claims on the total water supply. Household demand for water still accounts for less than 7% of agricultural requirements in Java and in the case of a conflict of interests, the government has stated that domestic needs should have priority 2/, so over the long run there need be no shortage of drinking water. However there is currently a lack of overall river-basin planning, and consideration

1/ Availability of surface water is defined here as "firm flow", i.e., the volume of flow that can be expected even in the dry season. This availability can of course be supplemented by reservoirs, and new dams currently under construction (e.g., Saguling and Cirata to supply West Java) can be expected to make a contribution to the overall water balance.

2/ Law 11 of 1974 stipulates the general principles of water resource management. Three categories of use are specified in what has assumed to be a decreasing order of priority; first, drinking, washing, religious use, municipal use, and national defence; second, agriculture; and third, power generation. Much of this law is rather general and there is still a need for clarification.

is being given to the establishment of water resource committees or boards to develop plans for integrated water development, management, monitoring and pollution control. These might be introduced initially in areas where water shortages are already evident or projected and where conflicts between urban and rural use are most serious. Water resource management in the capital region is probably the most urgent in this regard (see next para.) and the government is currently exploring ways of improving coordination and planning in this area. 1/

2.16. The Needs of Metropolitan Areas. The largest cities in Indonesia were the first to receive investment in water supply in REPELITAs I and II, and only after sizeable investments had been made in the major urban areas was priority switched to the smaller cities. While an emphasis on the smaller towns is desirable and appropriate, ironically it is the metropolitan areas, and notably the Greater Jakarta area, that once again require the largest investments with the greatest urgency. While there are a number of reasons for this need, they are all associated with increased crowding and industrial activity, and the associated deterioration of environmental conditions. 2/ First, intakes of raw water to water treatment plants are becoming dangerously polluted; for example, the quality of raw water entering the Jakarta (Pejompongan) treatment works is now worse than that entering many sewerage treatment works in other countries, and the efficiency of the treatment plant is not high. An expensive program of protection of water sources is therefore required. Second, the need for access to piped water is growing more rapidly than the metropolitan population. Groundwater is being depleted rapidly in the capital city, leading to seepage of saline water into the coastal aquifers in the north and the need for increasingly deep wells in the south of the city. In addition the quality of groundwater is deteriorating due to the accumulation of human and industrial wastes, again adding to the urgency of an expansion of the piped system. Third, in order to prevent further deterioration in the environmental condition of drains and canals, increased water resources are urgently needed for flushing. 3/

2.17. A recent study has estimated that the overall requirements (excluding groundwater) will rise from 6 M3/sec in 1983 to about 26 m^3/sec in 1990 and 40 m^3/sec in 2000. 4/ The same study estimated that the total investment

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1/ See e.g., Jabotabek Water Resource Development, Jabotabek Implementation Advisory Team/Cipta Karya, Report No. I/24, June 1982.

2/ Since the situation in Jakarta has been studied in most detail, the following comments apply particularly to the capital area. The same kind of problems are being experienced in other major cities but usually with less intensity.

3/ Of course the quality of water needed for this purpose is quite different to that for domestic use; it nonetheless competes with household use for the same source.

4/ The Development and Management of Water Resources in Jabotabek; Jabotabek Implementation Advisory Team, May 1981.

requirement in REPELITA IV for ensuring adequate water supply for the capital city would amount to over Rp. 240 billion (1982 prices). This is equivalent in real terms to about 73% of the entire investment in water supply in the first four years of REPELITA III. The extensive needs of large cities indicates the danger of their absorbing a disproportionate amount of central government subsidy. At the same time, these cities have a potential for higher tariffs from the larger proportion of industry, commerce and higher income users which suggests the need to review the tariffs for PDAMs to develop a more progressive structure, and possibly to require industries using groundwater to pay a depletion tax (see also Chapter 5).

Investments Needs in REPELITA IV

2.18. In the context of the United Nations Water Supply and Sanitation Decade, the government has established targets for 1990, which are now being incorporated into the REPELITA IV plan. 1/ In simple terms, the goal is to ensure access to safe water for 75% of the urban population by the end of the decade, and to extend the IKK (semi-urban) program to an additional 2000 small towns. Expanding access from 60% to 75% of the urban population requires more investment than would be needed to provide water for a simple 15% of the urban population (about 1.1 million households in 1989), since much of the new investment will inevitably benefit households who may presently be sharing or using public facilities or pumps. In addition, per capita demand for water is certain to continue rising with increasing incomes. Table 2.9 presents physical targets for the coming five-year plan and contrasts them with achievements under REPELITA III. (These targets have been developed by the government, but have not yet been reviewed and approved by BAPPENAS; they are therefore subject to modification.) Table 2.10 presents the financial outlays required for these investments. For the five-year period a total of about Rp. 1.8 trillion in current prices ($1.9 billion), or about Rp. 1.1 trillion in constant 1982 prices, would be needed. Average annual spending on urban and semi-urban water supply in REPELITA IV would in real terms be 2-1/2 times that in the first four years of REPELITA III. These large expenditures include not only central government direct expenditures, but also borrowing and equity of the water companies and foreign aid. The financing of the program is discussed in Chapter 4.

1/ National water supply and sanitation conferences were held in Bali in 1981 and 1982 at which the decade plan was discussed. See, for example Second National Workshop for Drinking Water Supply and Sanitation Decade: Summary of Recommended Program, Denpasar, Bali, October, 1982.

Table 2.9: PRELIMINARY REPELITA IV PHYSICAL TARGETS AND COMPARISON WITH REPELITA III ACHIEVEMENTS

	REPELITA III (completed or underway)	REPELITA IV (preliminary target)
Urban Water Supply		
Number of Cities/Towns	461	289
New Capacity Added ('000 lps)	15.7	17.2
New Households Served (Million) /a	0.5	3.4 /b
Semi-Urban (IKK)		
Number of Towns	427	2000
New Capacity Added ('000 lps)	2.2	10.0
New Households Served (Million) /a	0.7 /c	3.6

/a Most official documents express coverage in terms of persons rather than households. For the purpose here, the assumption is 5.3 persons per household in REPELITA III and 5.6 in REPELITA IV. The official target for new beneficiaries in REPELITA IV is 19 million urban residents and 20 million semi-urban residents. Note that these are beneficiaries of piped water. The REPELITA III achievement is therefore apparently smaller than stated in para. 2.05 since it excludes pumps.

/b This number is greater than would be required if all beneficiaries of clean water were additional to existing beneficiaries. However this number includes beneficiaries who previously shared a standpipe or house connection or used a pump.

/c Most of these people have not yet benefitted since the schemes are not yet complete.

Source: Department of Public Works, D.G. Cipta Karya.

Table 2.10: COST OF TENTATIVE REPELITA IV PROGRAM AND COMPARISON WITH REPELITA III /a (Billion rupiah)

	REPELITA IV		REPELITA III
	Total Cost	Average Annual Cost	Average Annual Cost (1st 4 years)
Current Prices	1825	365	76
Constant 1982 Prices	1100	220	82

/a Includes central government spending, foreign aid, and borrowing and new equity of water comparison (see Chapter 4).

Source: For REPELITA III: Annex IV.
For REPELITA IV : Department of Public Works, D.G. Cipta Karya.

B. SANITATION AND DRAINAGE

2.19. As noted in Chapter 1 (para. 1.48), health conditions in urban kampungs have been found to be closely related to sanitary conditions. For example, children from households with private toilets and those with clean water facilities are more healthy then those without, and the construction of improved sanitation facilities has led to improved health. 1/ Until now, however, budgetary allocations for sanitation have been small, as the primary effort has been concentrated on water supply. This emphasis has been correct; provision of water is a prerequisite for adequate sanitation and for a reduction of the so-called "water-washed" diseases (diarrheal and skin diseases, etc.). Without supply of good quality water, the efficacy of investment in sanitation facilities may be severely reduced. However, now that the water supply program is progressing well, the government plans to give a much higher priority to environmental sanitation in the coming five-year plan than in the past. This section reviews recent progress and key issues in the three subsectors: drainage and flood protection, human waste disposal, and solid waste disposal.

Recent Progress and Issues for The Future

2.20. Drainage and Flood-Protection. Many of Indonesia's principal cities are located in flat, swampy coastal areas where they suffer from poor drainage, tidal inundation, flash floods and siltation, originating from an increasingly denuded hinterland. Some inland towns and cities are also affected by overflow from rivers and irrigation canals. The problem is compounded in that the same watercourses often serve two completely different functions--urban drainage and the water supply for irrigation. 2/ In addition urban drains are used, and will continue to be used for a long time, not only to carry away storm water but also for the conveyance of liquid waste. In dry weather these liquid wastes may constitute the whole flow and are an obvious source of infection and pollution. But the principal public health hazards are due to the common use of drains as a convenient means of garbage disposal, as a place for washing, bathing and defecating, as a source of water, and for disposal of septic sludge and highly polluted wastes. These seriously unhealthy practices are clearly related to deficiencies in other urban services, such as solid waste collection, excreta disposal and water supply. Without corresponding investments in these services, expenditure on drainage facilities may be wasted. There is a need to review the scope, timing, and location of these related sanitation and drainage facilities in an integrated local plan and program.

1/ See e.g., Impact Evaluation Study of KIP in Cirebon, Bogor, Tangerang and Bekasi, JUDC/Cipta Karya, March 1983. For a recent detailed summary of research findings from around the world, see Sanitation and Disease: Health Aspects of Excreta and Wastewater Management; World Bank Studies in Water Supply and Sanitation, No. 3, 1983.

2/ In some cases, drainage canals are used for a third use--as an intake for water treatment plants. This is the situation in Jakarta and can lead to extraordinarily unhygienic drinking water.

2.21. Investments in drainage in REPELITA III fall into three categories. First, macro-drainage improvements were financed by the central government in 22 cities, benefiting an estimated 1.6 million urban inhabitants in low-lying areas. In three of these cities (Surabaya, Bandung and Indramayu) major rehabilitation was undertaken with foreign assistance. Second, micro-level drainage improvements have been undertaken through the Kampung Improvement Program (see next section) in almost 12,000 hectares in 220 towns. Finally, a large number of small investments have been made by local governments financed through their own revenues and central government INPRES grants. Total investment in drainage, however, has been small; in the first four years of REPELITA III spending by all levels of government was, on average, less than Rp. 25 billion a year (Rp. 18 billion, excluding KIP).

2.22. The government plans to give drainage a higher priority in REPELITA IV. However, engineering solutions to offer a high level of flood protection are extremely expensive and unlikely to be affordable on a major scale. Moreover, as noted above, the threat to public health from poor drainage comes mainly from stagnant water and frequent back-up of liquid wastes, rather than from storm drainage. (The latter causes inconvenience and property damage, but is less of a danger to public health.) Therefore a continuation and extension of the current emphasis on relatively low cost alternatives is appropriate. In the short term this involves (i) improving cleaning, dredging and maintenance of existing canals and drains; (ii) continuing to improve micro-drainage in flat and flooded residential areas (through KIP); (iii) improving key sections of main canals, raising banks, covering sections and installing tidal flap-gates; and (iv) gathering micro-drainage to sumps and pump to canals where natural drainage is ineffective. Longer term goals include (i) improvement of hinterland watershed management; (ii) guiding new urban growth towards less flooded areas; and (iii) separate treatment of industrial effluent where urban water courses subsequently serve irrigation needs.

2.23. Human Waste Disposal. Between 75% and 95% of all water-borne pollution in Indonesia's cities is caused by the unsanitary disposal of human waste. 1/ Human wastes are disposed of in a variety of ways, most of which would be considered unhygienic and unacceptable in most industrialized countries. In general, septic tanks and leaching pits are used by the highest-income groups, and a combination of cesspits, pit latrines and direct disposal into canals, drains and ditches by middle- and low-income groups, while the poorest households frequently use the same river and canal water for washing and bathing. Table 2.11 summarizes the available data on human waste disposal from the 1978 SUSENAS and the 1980 Census. These data are derived from questionnaires and are very likely to overstate access to private toilet facilities, both because people tend to be embarrassed to acknowledge using informal facilities such as drains, ditches and canals, and because respondents are generally heads of households and their answers omit the fact that children tend to use less formal facilities. It is reasonable to assume that the proportion of the urban population with access to safe disposal of human waste does not exceed 30%.

1/ Findings of Environmental Review Mission (Ministry of Environment/UNDP), August 1983. Report forthcoming. Industrial waste accounts for the remainder, but is growing in importance in rapidly-industrializing areas.

Table 2.11: HUMAN WASTE FACILITIES: PRIMARY PLACE OF DEFECATION IN URBAN AND RURAL AREAS (Percentage distribution)

	1978 SUSENAS		1980 CENSUS	
	Urban	Rural	Urban	Rural
Private	53	30	46	22
With Septic Tank	n.a.	n.a.	29	4
Without Septic Tank	n.a.	n.a.	17	18
Shared, Public or Other	47	70	54	78
Public	10	4	n.a.	n.a.
River or Ditch	21	43	n.a.	n.a.
Fish Pond	3	6	n.a.	n.a.
Garden	2	6	n.a.	n.a.
Shared	8	7	n.a.	n.a.
Other	3	4	n.a.	n.a.
	100	100	100	100

Note: Care is needed in interpreting these data. For example, a simple one-seat toilet over a drain or river may be categorized as "private". Therefore, access to a private toilet should not be equated with access to a sanitary facility.

Source: Annex II, Tables 2.1. - 2.3.

2.24. The government is involved in the provision of human waste facilities in three ways. First, construction of communal wash-house/toilets (MCKs) 1/ is included as one admissable component under KIP. However as the next section indicates (Table 2.16), this component of KIP has received a low priority; probably less than 1500 MCKs (each serving about 200 residents) have been constructed. Second, pilot sewerage projects have been initiated in Bandung and Tangerang. 2/ These schemes generally cover a small proportion of the population and are somewhat experimental in nature, exploring options of technology and tariff structure for replication in future projects. Finally, the Department of Health helps to finance a pit latrine program; but this concentrates on rural areas. It is estimated that adding all these programs together, on average about Rp. 5 billion (Rp. 4 billion, excluding KIP) was spent annually by all levels of government on human waste during the first four years of REPELITA III. This is equivalent to about Rp. 150 per urban dweller. There is currently no program in urban areas to encourage the private construction of toilets, but the government is hoping to establish such a program in REPELITA IV (para. 2.27).

1/ Mandi (bathe), Cuci (wash), Kakus (defecate).

2/ Similar pilot schemes in Jakarta and Medan will begin in late 1984.

2.25. There are a number of problems and issues associated with current excreta disposal practices that must be considered in preparing a strategy for REPELITA IV. These fall into three categories: technical, attitudinal/social, and financial. Technical problems include: (i) leaching pits and septic tanks are often not desludged, and where the soil is not sufficiently permeable, effluent overflows to surface drains; (ii) cesspools and leaching pits are often too close to water wells and can cause direct contamination; (iii) septic tanks and leaching pits are often inaccessible or desludging services are not available; (iv) septic tank and cesspool sludge is often disposed of by dumping into canals or rivers; and (v) public MCKs often have inadequate water supply. Attitudinal/social problems include (i) a lack of understanding on the part of kampung residents of the relationship between hygiene and health; (ii) large public MCKs are unattractive so it is often difficult to acquire land for MCK construction (they are consequently too few and far between which discourages use); and (iii) public MCKs are often poorly maintained. Financial issues include (i) a major expansion of water-borne sewerage systems is not practical because of high cost (and shortage of water); and (ii) MCK use is severely reduced when the usual procedure of charging a fee for each time used is in operation (see Chapter 5).

2.26. From the above list, it is clear that there must be two strands to a government strategy in the sector. First, it is important that the authorities play a more aggressive role in raising the level of understanding of kampung residents and small local contractors concerning the benefits of sanitary disposal of human waste; most of the problems listed above cannot be solved by direct government investment, but only by education. In this regard there is scope for greater use of television, film and other media. Second, by selective direct investments, the provision of technical advice and a careful pricing policy, the government can play a crucial role in stimulating improvements in the sector.

2.27. A key issue in the government's investment program is the choice of technology. This is dependent on a number of interrelated considerations including the amount and source of water supply, drainage facilities, soil conditions, population densities, unit costs for capital and operating expenses, and capability for operation and maintenance by the users and local government. From experience in Indonesia, per capita costs range from Rp. 10,000, per person for individual household latrines 1/ and Rp. 12,000, for an MCK shared by about 5 families 2/ to Rp. 100,000, for conventional sewerage including treatment 3/, a cost factor of 10. In a few city center locations, where commercial and industrial users and possibly medium and high income users can cross subsidize poorer beneficiaries, centralized

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1/ Double leaching pit construction with pour-flush toilet pan, provided by contractor (1982 price) shared by five people.

2/ MCK keluarga, pour-flush toilet pan, hand pump, bathing and washing area, septic tanks, shared by 30 people (1982 price).

3/ See G.J.W. de Kruijff, Cost of Sewerage in Indonesia, September 1983, UNDP Project INS/81/002.

conventional sewerage may become affordable. However, in the majority of Indonesian towns and cities, improved human waste disposal methods have to rely on on-site sanitation systems. Where new housing schemes are constructed, interim approaches of decentralized systems (sewerage in combination with septic tanks, oxidation ponds or package sewage treatment plants) can be tried. Existing technologies should be expanded and modified to cater for a potential upgrading to a higher level of service at a later stage when required. In general, it would appear that in most kampung areas a combination of small MCK units (twoto four-seat units), one-seat MCKs and, where possible, the construction of individual pour-flush toilets connected to leaching pits are the most appropriate solution. Strengthening should take place in the development of affordable desludging services for leaching pits and septic tanks in these areas. Government regulations requiring middle-income houses to construct sanitation facilities to an adequate standard should be enforced. In view of the constraints on the safe disposal of the septic and leaching pit sludge, more emphasis should be placed on the construction of double leaching pit systems, which eliminate the associated problems of disposal of sludge. The government should encourage through education campaigns and the use of non-governmental organizations the construction of individual toilet facilities.

2.28. Solid Waste. Inappropriate disposal of garbage is a serious health hazard: garbage provides food for vermin and ideal breeding grounds for flies which spread disease, it pollutes waterways as it decomposes, and is a source of odour and visual pollution. In Indonesia, however, probably the most serious problem is caused by the dumping of garbage in drains and canals which, as already noted, serve as the principal sewers in most cities. An open sewer system has much to commend it as biological action takes place easily, but the dumping of garbage blocks the flow to the sea, causing flooding of raw sewerage and resulting in extraordinarily unhealthy conditions. Solid waste management, therefore, often has by far the highest benefit-to-cost ratio of any investment in environmental sanitation.

2.29. Table 2.12 summarizes data from the 1978 Household Survey (SUSENAS) on the disposal of household waste. Since then it is probable that use of a formal garbage disposal system has risen slightly in kotamadya, but probably very little if at all in the non-kotamadya urban areas. During REPELITA III, much greater attention has been given to the establishment of solid waste management systems but, starting from a situation of almost complete neglect, the extension of facilities has barely kept up with increases in the urban population. As in the case of human waste, government involvement in the sector has taken three forms. First, solid waste disposal is an eligible component of KIP, but as seen in Table 2.16 there are rarely sufficient funds available to devote to this component. Second, the central government has supported "perintis" or "stimulus" schemes on a pilot basis in 16 cities during REPELITA III. Finally, local governments, which have primary responsibility for solid waste management, have spent funds from their own revenues and from INPRES grants. Total estimated annual spending by all levels of government was about Rp. 14 billion (Rp. 13 billion excluding KIP) during the first four years of REPELITA III; this is equivalent to an average of Rp. 420 per urban resident.

1/ The Jakarta Sewerage and Sanitation project, supported by the World Bank.

Table 2.12: SOLID WASTE: PRINCIPAL PLACE OF GARBAGE DISPOSAL - 1978
(percentage distribution of households)

	Urban		Rural
	Kotamadya	Non-Kotamadya	
Formal System (Trash Cans)	34	15	5
Informal Disposal	66	85	95
Burned	30	42	41
Buried in holes	12	17	24
Other	24	26	30
	100	100	100

Source: 1978 SUSENAS tapes.

2.30. Several studies and field trials, notably in Bandung, Surabaya, Jakarta and Denpasar, have analyzed different collection and disposal systems, and have come to similar conclusions on an improved approach. Problems identified have included the following: (i) concrete boxes (bak sampah) are poor containers because they give free access to flies and animals, smell, and are slow and dirty to empty and clean; (ii) collection using handcarts (gerobak) is limited by haulage distance and often garbage is dumped before reaching the collection center; (iii) neighbourhood collection points are not cleared sufficiently regularly; (iv) garbage collection around food markets is particularly poor; (v) handling of garbage is very inefficient with double handling being normal; (vi) the fleet of garbage trucks is inadequate and productivity is low; (vii) disposal sites are few and disposal usually consist of dumping rather than controlled landfill; (viii) responsibility to prevent illegal dumping and littering is not clear; and (ix) the availability of inner urban land for transfer stations is limited and costly.

2.31. In view of these problems and the success of some pilot projects, notably in the Kayumanis area of Jakarta, the government is now embarking upon a major new initiative in solid waste management. A standard "modular" approach will be adopted. Cities will be divided into areas each containing 30,000 inhabitants. Handcarts, trucks, handling equipment and transfer stations will be provided according to established ratios. It is hoped that this approach will be replicable on a large scale.

Investment Needs in REPELITA IV

2.32. Within the context of the Water Supply and Sanitation Decade the government plans that 60% of urban households should have access to sanitation facilities by 1990; this contrasts with a coverage estimated by the government

at 29% in 1982. 1/ It is not clear exactly how "access to sanitation facilities" is defined but it appears to consist of a combination of house-to-house collection of solid waste, access to a safe communal toilet and wash facility, and freedom from flooding. For the purposes of REPELITA IV, this target has been translated into more specific goals including raising the coverage of formal solid waste collection to 50% of household garbage (from about 25%) and to 100% of all non-household garbage; increasing access to MCKs to 50% of the urban population (from less than 10%), and pioneering sewerage systems to an additional 10%. These are ambitious and worthy goals requiring a major expansion in investment.

2.33. Table 2.13 summarizes the tentative physical plan for REPELITA IV 2/ and compares it with REPELITA III achievements. This central government program is formulated by the government as a "pioneering" "stimulus" program. The objective is that local authorities will play an increasingly important role, but it will be important to make financial arrangements such that this incentive actually occurs (see Chapter 3). As such the central government program accounts for well under half of what is required in the sector. For example for solid waste management, total capital spending will probably have to exceed Rp. 100 billion 3/ in the REPELITA IV period in order to reach the target of 50% coverage. This contrasts with Rp. 15 billion proposed for central government spending. Table 2.14 presents the central government expenditure needed for the program outlined in Table 2.13, and gives a rough estimate of the additional investment requirements by local authorities to achieve the Water and Sanitation Decade targets.

1/ See e.g., Drinking Water Supply and Sanitation Decade; Second National Workshop-Summary of Recommended Program, September 1982.

2/ This investment program has been derived by the government but is subject to approval from BAPPENAS.

3/ Recent studies in Bandung (BUDS), Surabaya (Flintoff) and Jakarta (PPMC) indicate that about Rp. 2,300 per capita per year (1982 prices) is required to operate an efficient solid waste management system. About one third of this amount is for operating costs.

Table 2.13: DRAINAGE AND SANITATION: PROPOSED CENTRAL GOVERNMENT PROGRAM FOR REPELITA IV AND COMPARISON WITH REPELITA III ACHIEVEMENTS (Excluding KIP) /a

	REPELITA III	REPELITA IV (Preliminary Targets)
DRAINAGE		
Rehabilitation Program		
Number of Cities/Towns	22	200
Area Covered ('000 Ha)	n.a.	17.5
Population Served (Millions)	1.6	4
Pioneering Flood Control Program		
Number of Cities/Towns	-	50
Population Served (Millions)	-	10
SOLID WASTE		
Pioneering ("Modular") Program		
Number of Cities/Towns	16	200
Area Served ('000 Ha)	n.a.	17.5
Population Served (Million)	3	4
HUMAN WASTE		
Pioneering Sewerage System		
Number of Towns	4 /b	4
Population Served (Million)	n.a.	n.a.
Double Pit Latrine Program		
Number of towns	-	6

/a KIP is considered separately in the next section.
/b Underway; not complete.

Source: Department of Public Works, D.G. Cipta Karya.

Table 2.14: DRAINAGE AND SANITATION COST OF TENTATIVE REPELITA IV INVESTMENT PROGRAM AND COMPARISON WITH REPELITA III (Excluding KIP)

	Current Prices	Constant 1982 Prices
	(Rp. billion)	
REPELITA IV		
Central Government Expenditure	235	142
Drainage Rehabilitation	(20)	
Pioneering Flood Control Program	(100)	
Solid Waste (Modular) Program	(15)	
Sewerage Systems	(100)	
Local Government Expenditure	250	151
Total Cost	485	293
Average Annual Cost	97	58
REPELITA III (1st Four Years)		
Average Annual Cost	35	38

Source: For REPELITA III, see Annex II.
For REPELITA IV, Department of Public Works, D.J. Cipta Karya (for central spending) and mission estimates for local spending.

C. KAMPUNG IMPROVEMENT PROGRAM (KIP)

The Kampung Improvement Program to Date

2.34. The Kampung Improvement Program was initiated in Jakarta in 1969 and has since become an ambitious nation-wide program for upgrading the informal, unplanned and unserviced "urban villages" which house over half of Indonesia's urban population. The program was initiated because national sectoral agencies and even the city government agencies were not providing services to the dense, lower-income areas where access and land acquisition were difficult, yet environmental conditions were worst. It was recognised that, due to difficulties of working in crowded areas, a more integrated approach to the planning and installation of services was necessary and more community involvement was needed than for conventional infrastructure projects. The principles of KIP are to insert basic infrastructure into the kampungs with minimum disturbance or removal of the residents (removals typically average under 2% of all households). Construction standards are very simple and adjusted to fit the conditions in the kampungs. A kampung committee is consulted on priorities and on the layout of services. The KIP components vary according to the conditions in the kampung, but can include local roads, footpaths, drainage, water supply, public sanitation facilities, solid waste collection and schools and clinics. More recently, sale of land titles to residents occupying government-owned land has been included. Costs of infrastructure are not directly recovered from residents, but IPEDA property taxes are raised in the improved areas, as part of city-wide increases.

2.35. It is useful to distinguish three types or stages of KIP. First, about 15 large and medium-sized cities have undertaken KIP mainly through their own budgets and (since 1974) from foreign loans. Standards vary according to the availability of local and foreign funds; costs per hectare may be as high as Rp. 12 million and as low as Rp. 2 million. Experience has shown the program to be remarkably successful in rapidly providing basic services for large numbers of people. Jakarta has now upgraded all of its worst kampungs, covering about 3 million people; Surabaya is about halfway through its program, which will benefit about 800,000 residents; and good progress is being made in all of the other major cities.

2.36. Recognising that a massive expansion of the program was desirable (but that many of the medium and smaller towns would be unable to finance it from their own resources and that foreign loans may be insufficient), the central government established the "perintis" (stimulus) program early in REPELITA III, which provided a central government grant of Rp. 2.8 million per ha, 1/ financed through Cipta Karya's development budget and implemented by its staff. The concept was to provide a minimum level of service to 15,000 ha of kampung distributed among 10 large cities (200 ha each), 40 medium-size cities (100 ha each) and 150 towns (60 ha each). Assuming an average density of 225 persons/ha, this would upgrade conditions for about 3,375,000 million people over REPELITA III, which would represent about 20% of Indonesia's

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1/ Plus Rp. 300,000 per ha for design and overhead.

urban kampung population. The program was intended to stimulate the municipalities to add their own funds or take up loans to extend the area of KIP and subsequently increase the level of service in the improved areas. The perintis program has been supported by foreign loans and grants in 17 cities 1/ and occasionally by local funds, so that the allocation per hectare is in some cases well above Rp. 2.8 million. However, matching contributions by the local authorities were not a requirement for obtaining perintis funds, and in most cases, local counterpart funds have not been provided and local authorities have not sought loan funds. Achievement of the target has been given high priority by the government, and as seen in Table 2.14, the area coverage has been impressive; although the target of 15,000 ha has not been reached, by the end of REPELITA III work will be underway or completed in over 200 cities and towns.

2.37. A third category of KIP includes a wide variety of small-scale programs, organized at the local level and emphasising community participation and donated kampung labor. This "KIP Swadaya" is common on a small-scale throughout the cities of Indonesia. Finances for materials may come from central or provincial grants to villages ("Bangdes" or Inpres Desa) or may be collected from among the kampung dwellers. The W.R. Supratman program in Surabaya, in which the city government provides matching grants and technical guidance to kampung communities, is a large-scale replication of this approach. It is generally agreed that, where investments are simple, the quality of work is at least as high and often higher than in more centrally controlled projects. An attempt to channel and integrate these local initiatives into broader community development investments was made by a small UNEP project in Surabaya and Bandung. In addition to simple physical KIP components, the project included health, education and nutrition components. The approach is generally regarded as being successful in its effort to involve the local community at every stage of the project, but expensive in terms of consultant input, and therefore not replicable on a wide scale. The initiates by UNICEF in KIP have been much more successful. Health and community development programs have been introduced into kampungs, many of which already had received infrastructure improvements under KIP. Additional sanitation facilities were also constructed using UNICEF funds. This initiative should continue to be supported and broadened.

1/ Eleven Cities have been supported by the World Bank, four by the Netherlands Government and two by ADB.

Table 2.15: KIP PERINTIS - PHYSICAL ACHIEVEMENT IN REPELITA III

	1979/80	1980/81	1981/82	1982/83	1983/84	Total
	----------Actual ----------				(Program)	
Hectares Improved /a	929	1605	2012	4074 /c	3105 /c	11725
Number of Cities	12	51	79	220	190	220
Average DIP expenditure per hectare(Rp. Mill.) /b	2.0	2.9	2.4	3.0	n.a.	n.a.

/a Includes work in progress at end of year.
/b Physical achievement divided by DIP and ABT expenditures (Annex IV, Table 2.4).
/c Verification still needed on whether all funds budgeted were spent.

Source: Cipta Karya, Dit. Perumahan.
See Annex II, Table 3.1 for physical achievements and Annex IV, Tables 2.4 and 2.5, Expenditures and Finance.

2.38. The Components of KIP. The allocation of funds among the various components of KIP varies greatly, as is illustrated in Table 2.16, which presents costs and allocations in selected cities and programs. In the early days of the Jakarta KIP most emphasis (almost half of all expenditure) was given to roads and associated drains. While roads are now less important, access (mainly in the form of footpaths) and associated drainage is still the cornerstone of the program, accounting for over 80% of KIP Perintis expenditures. Health and educational facilities are not included in the Perintis program, and sanitation facilities are still given a low priority due to inadequacy of the Rp. 2.8 million per ha allocation. 1/ Foreign-aided programs tend to give more emphasis to sanitation, but even so it usually accounts for a small proportion of total expenditure. 2/

The Impact of KIP

2.39. Over the last few years a number of studies have explored the effect of KIP investments on the physical, social and economic environment. Surveys have been conducted in Jakarta (1977-80), Surabaya (1982), Cirebon, Bogor, Tanggerang, Bekasi (Cibotabek; 1980-1983) and Bandung

1/ In many towns all of the allocated funds are spent on roads, footpaths and drains. Even these components are often only partially effective, due to the inadequate allocation of funds per hectare.

2/ The Cirebon, Bogor, Tanggerang, Bekasi project is an important exception in this regard.

Table 2.16: KAMPUNG IMPROVEMENT PROGRAM - DISTRIBUTION OF EXPENDITURE FOR SELECTED CITIES AND PROGRAMS
(percent distribution)

Component	Jakarta	Surabaya	Semarang	Surakarta	Ujung Pandang	Cirebon	Bogor	Tanggerang	Bekasi	KIP Perintis (typical)
	(1979-83) /a					(1981-83) /b				
Roads, side drains, bridges	46	27	24	34	24	23	20	31	28	34
Footpaths, side drains	13	21	22	19	22	20	22	29	30	45
Main drainage	11	17	20	5	20	12	10	14	10	12
Water facilities	14	12	12	5	10)					7
Sanitation	1	5	6	7	7)	31 /c	41 /c	23 /c	21 /c	2
Solid waste	0.2	5	5	8	6	3	3	2	2	-
Health and medical	2	3	3	3	3)					-
Schools	13	10	8	11	8)	1	1	1	9	-
	100	100	100	100	100	100	100	100	100	100
Per hectare cost (Rp million)	12.1	10.4	11.1	8.2	11.5	3.84	4.54	4.73	4.39	2.8
Per capita cost (Rp)	43,000	29,000	37,800	29,900	33,000	n.a.	n.a.	n.a.	n.a.	9,333 /d

/a Financed under the World Bank's Third Urban loan (No. 1336).

/b Financed under a Dutch government loan.

/c MCK Keluarga sanitation facilities, water supply only to MCKK.

/d Assuming 300 inhabitants per hectare.

(1980). 1/ Most of these have involved fairly detailed longitudinal surveys of kampung conditions in improved and unimproved kampungs. Although the findings are by no means unanimous, there appears to be general support for the following conclusions:

(a) Physical Improvements. Access and drainage have been improved greatly in almost all KIP schemes and substantial reductions in flooding are reported. Success in solid waste disposal and maintenance of drains and footpaths has been variable and depends heavily on the degree of community organization and participation in project planning. Water supply improvements are most effective in Surabaya where access to piped water has increased and costs of water to the household have been halved. The quality of construction has inevitably been mixed; common problems include inaccurate physical surveys, resulting in poor falls and profiles on drains causing back-up of water and clogging. This is sometimes due to poor design or construction but is exacerbated by the absence of adequate macro-drainage systems. Concrete works are often of a low quality, sometimes cracking and crumbling after a few months use. Low quality results partly from the regulation (KEPPRES 14A) requiring that small civil works contracts be implemented by small local companies, and partly from weak supervision.

(b) Attitudes towards KIP. There is generally strong community support for the physical improvements. Footpaths are particularly popular; roads less so, especially among the non-motorized majority of the population. Drainage and sanitation tends to be strongly critized if badly designed or constructed. 2/ However, the involvement of the community in the planning and location of facilities varies greatly depending on the type of KIP program and its management. Community participation in maintenance tends to be least where services are most "public".

(c) Effect on Home Improvements. There has been a substantial "stimulus" effect of KIP on private home improvements, which have been found to be twice as high as in non-improved areas. It has been estimated that every Rp. 1 million invested in KIP encourages an additional Rp. 1.9

1/ Included in these studies are: Impact Evaluation Study of KIP in Cirebon, Bogor, Tanggerang and Bekasi, Cipta Karya/JUDC, March 1983; "Socio-Economic Impacts of KIP in Jakarta and Surabaya, M.A. Mudzhar (LP3ES), 1982 paper presented to conference on KIP, Cisarua, December 1982; "An Impact Study on KIP in Surabaya", Johan Silas, 1982, paper presented to Cisarua conference; UNEP Marginal Settlement Improvement Projects in Bandung and Surabaya, Final Report of Consultant for Monitoring and Evaluation, W. Hofstede, 1980; and "An Evaluation of Selected Impacts of Jakarta's Kampung Improvement Program", J. Taylor, unpublished PhD dissertation, UCLA, 1983.

2/ Common complaints are poorly graded drains leading to stagnant water, and MCKs without water, and with ineffective septic tanks leading to smells and clogging.

million in private improvements. 1/ Residents are most likely to construct fences, to extend and improve the quality of walls and floors and to invest in electricity installation rather than, for example, to build sanitation facilities. 2/ There seem to be two reasons for this high private response to public investment. First, residents appear to feel a need to have their own houses in conformity with the newly improved environment; most home improvements are made within a year after the introduction of KIP. Second, kampung residents, most of whom have no legal right to their land, feel more secure after KIP, believing that government investment in the kampung is equivalent to an implicit recognition of residents' tenure rights. 3/ It must, however, be recognised that some of this investment is due to some residents having to re-build the front of their houses after they have been torn down to provide right of way for roads. There needs to be a better system of compensation for those residents which have been severely affected. This compensation might be combined, in the future, with a home improvement loan program available to all residents.

(d) Rents and Migration. Land values and rents have risen markedly in KIP areas in comparison with unimproved areas. Low rents have risen more than high rents so that the overall distribution of rents has narrowed. However there has apparently been surprisingly little out-migration due to excessive rent increases. This has been partly avoided by increased house sharing. In-migration has been discouraged by higher rents, so that the overall population growth of improved kampungs (which generally are among the most dense) has been slower than in unimproved areas.

(e) Economic Activity. Early proponents of KIP often emphasized its catalytic role on kampung-level economic development; this role of KIP was probably overstated. There is substantial variation in the findings of the various surveys. In Jakarta, no impact on incomes could be discovered, while in Surabaya family employment was observed

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1/ See "Physical Impact of KIP - Conditions of Buildings and Plots; 3 case Studies; JUDC for Cipta Karya, July 1983. Other studies have not attempted to quantify stimulus effects in so much detail, but there would be general support for a positive effect. On the other hand, however, the Report on the Joint Evaluation Mission of Indonesia and the Netherlands for KIP in Cibotabek, 1981, p. 17, noted that it would be "naive to believe that further improvements will be a spontaneous result of physical improvements."

2/ J. Taylor, 1983, op.cit.

3/ Attempts have been made to link KIP with the granting of land rights, but the registration and aquisition procedure for private property is so costly and time consuming that it is very likely to delay the implementation of the physical program. Registration is proceeding for occupants of government-owned land.

to rise. The Cibotabek study found that the rate of employment in improved kampungs was higher and that average household expenditures rose more rapidly than in unimproved areas. In addition, the number of warungs and workshops rose by 26% in improved areas, while falling by 35% in unimproved areas. It is not clear to what extent these facilities were merely servicing the public works program itself and to what extent a more permanent increase in economic activity has been established through better access and security of tenure.

(f) Health. More diseases were reported and more visits made to clinics after KIP. Both of these factors appear to be due to the fact that clinics were available through KIP. Before, diseases went untreated or people travelled to more distant facilities. In Jakarta health levels did not appear to have improved whereas in Surabaya and some of the Cibotabek KIP there has been considerable improvement. The incidence of ascariasis (roundworm) in children was less in improved kampungs (43% compared with 53% in unimproved areas) although the number of children with skin diseases was higher in KIP areas. 1/ As would be expected, health effects are greater where sanitation components are given a high priority. Moreover health conditions appear to be highly sensitive to the quality of the construction. Thus, for example, in some areas, ground water quality improved 34% at the pump following the installation of MCKs and drains, while in another case water quality fell following sub-standard construction of MCKs, and health conditions deteriorated.

KIP - Issues for REPELITA IV

2.40. In preparing for the coming five-year program there are three broad sets of questions that require particular attention. First, what is the appropriate allocation of funds per hectare and how should investments be distributed among the various KIP components? What are the standards of service that should be expected after KIP? Second, what can be done to improve the management and quality of KIP? Third, what is the role of KIP in small and medium-size cities?

2.41. Setting Standards for KIP. Appropriate standards for Kampung improvements are more open to interpretation and less amenable to measurement than for single sector services such as water supply (number of house connections), or drainage (average return flood). However, as with these other services, KIP standards should be based on a defined level of service to be achieved, rather than a fixed financial level, since local physical conditions are extremely variable. Since the paramount concern is the achievement of significant health and environmental improvements at low cost, then the program should aim to achieve easy access for residents to affordable drinking water, hygienic and easily accessible toilet and washing facilities, dry access to each house, reduction in local flooding, and house-to-house

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1/ Impact Evaluation Report of Cibotabek program, 1983, op.cit., p. 72. These tests were undertaken, not through questionnaire, but by direct examination and laboratory analysis.

collection of solid waste. Standards have been established along these lines for a number of foreign-assisted projects (Annex II, Table 3.2) but these have not yet been generalized for the Perintis program.

2.42. Table 2.17 illustrates the rough magnitude of investment required to achieve these modest standards of access, drainage, sanitation and water supply. In keeping with the recommendation that more attention should be given to sanitation, the relative importance of human and solid waste is high. The cost of achieving any particular standards depends on three factors: the topographical situation (slopes, natural drainage, etc.), the initial level of infrastructure, and unit costs for labor and materials. All of these can vary significantly. The required investment costs in Table 2.17 are based on the assumption of average topographical conditions and reasonable natural drainage but low levels of physical improvements before KIP. Therefore in many cases, costs of achieving these standards would be lower than portrayed in the table (since the initial infrastructure would be better), while in some low-lying and swampy areas the costs would be higher. Prices vary substantially by region in Indonesia (Annex II, Table 3.3) and in many parts of the country are higher than those assumed in the table. 1/ Although an average per-hectare cost is useful for national budgetary planning, the great variability of unit costs for KIP suggests the need for a more flexible approach in allocating investments funds per hectare for specific sites and cities. It is understood that the government is exploring options in this regard in preparation for REPELITA IV.

2.43. Improving the management and quality of KIP. The evaluation of KIP (para. 2.39) and observations by Government and Bank staff indicate five areas of weakness in KIP where improvements are needed and possible. These include: i) the great variation in coverage of KIP elements and quality of construction between cities and sites resulting more from the different KIP programs than from the local needs and conditions; ii) weak involvement of local governments in projects where they have no control over the funds and where local contributions are not required; iii) objections from residents to the location of public sanitation and solid waste facilities, resistance to removal of houses for roads, and difficulty of acquiring land for community facilities; iv) poor cleaning and maintenance of KIP infrastructure which is usually the responsibility of the residents (except for roads and water supply); and v) the need for home improvement loans for kampung residents.

2.44. The reasons for these problems seem to lie in three principal areas: i) fragmented funding and fragmented responsibilities for planning and implementation; ii) inadequate involvement of the residents; and iii) weak technical guidance to the local governments. Significant improvements in these areas would be likely if the following measures were taken:

a) consolidate all central government grant funds for KIP into one financial transfer to dati II, and require some level of matching contributions from dati II. The latter could be in the form of grant or loan.

1/ Average costs are from the cities noted in the table.

Table 2.17: ILLUSTRATIVE COSTS AND STANDARDS OF KIP WITH SANITATION EMPHASIS

	Basic Cost per Ha. (constant 1982 prices) Rp. '000	%	Direct Labor content as % of total cost
A. COSTS /b			
Access			
Roads, side drains, bridges	1890	21	23
Footpaths, side drains	2070	23	40
Main Drainage	1080	12	40
Sanitation			
MCK Keluarga /a	2430	27	40
Solid waste (under city-wide sectoral program)			
Water Supply reticulation	900	10	40
Land for clinics, schools, etc.	630	7	-
Total	9,000 /b	100	38
(Total in 1984 prices)	(12,150)		

B. STANDARDS

Access: All dwellings within 20 m of paved footpath and within 150 m of paved road. Minimum footpath provision of 150 m/ha.

Drainage: the total capacity of drains is sufficient for the discharge for the whole area. Footpaths drained with open side drains or one covered central drain. Roads have drains on each side.

Sanitation: One MCK Keluarga /a is provided for every seven families or five houses not already provided with private facilities.

Water Supply: A pump or water connection is provided for every MCK.

/a Small wash, bath and toilet facility to be shared by seven families.

/b This analysis is based upon poor conditions in unimproved kampungs in Cirebon, Bogor, Tangerang and Bekasi, Surakarta, Ujung Pandang and on average costs to raise conditions to the specified standards within those cities.

Source: Joint Urban Development Consultants, Cibotabek Project, and Bank staff estimates.

b) at the kampung level, move the emphasis from "planning-for" the residents to "planning-with" the community. 1/ This would imply closer involvement between the KIP unit staff and the LKMD in defining local priorities, planning the location of infrastructure, and establishing arrangements for subsequent operation and maintenance. The use of media, such as video presentations--which have been used very successfully in the family planning program--could be tried. A small financial contribution from the kampung residents would help to generate identification with and participation in the project and could increase the local financial contribution to the program. Construction of some of the simpler works might be undertaken by the community themselves through gotong-royong and contracting with local labor.

c) concentrate the role of Cipta Karya and the KANWIL on i) guidance to dati II for careful kampung site surveying, planning and costing, and ii) ensuring quality of the schemes through review of the proposed layouts and engineering details, and monitoring the progress of the works. Cipta Karya staff should move away from contract management and detailed control of funds, and instead influence the program through requiring satisfactory performance on earlier works before the next year's funds are released to the dati II.

2.45. The Role of KIP in Medium and Small Cities. As the program moves into smaller cities, some reorientation of the approach appears appropriate. As has been already noted, the concept of KIP was introduced for large crowded cities with reasonable city-wide drainage and sanitation systems which bypassed clearly defined depressed kampung areas. The package of interrelated services is particularly appropriate in kampungs with a population density exceeding 250 per hectare. In most smaller cities (usually under 200,000 population), kampung densities are lower and micro-environmental conditions are better. The whole urban area except for the central market and commercial area tends to consist of a few, rather similar kampungs. City-wide infrastructure is usually totally inadequate and the most effective way to improve conditions in these kampungs may often be to upgrade the town-wide networks rather than concentrating on micro kampung-specific improvements. For example, kampung-level drainage systems may not function due to an inadequate main drainage system. Therefore it is desirable that KIP funds be used flexibly, to include town-wide improvements. This has implications for the choice of kampungs and it requires that designs must take broader city-wide implications into account. It may be possible to allocate a certain proportion of the funds for kampung-specific improvements (footpaths, MCKs, etc.) to be chosen by the community, and the remainder to be used for

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1/ In the context of preparing for REPELITA IV, the government has established a task force under the leadership of the Department of Home Affairs for assessing ways for improving the involvement of the Kampung communities.

city-wide services (drainage, etc.). 1/ In essence, for this category of settlements, KIP should evolve into a local infrastructure works program, planned and implemented by dati II and evaluated by tingkat I.

KIP - The Investment Program

2.46. At a time of scarce foreign exchange resources and modest domestic economic growth, the Kampung Improvement Program provides an excellent vehicle for government investment, achieving the dual benefits of service provision and employment generation. Most materials for KIP infrastructure are locally produced and, as shown in Table 2.16, the direct labor input is high. It is estimated that 560 man days of direct labor is required per ha in average conditions to achieve the standards suggested in the table. A program of 3,000 ha per year (the present level) would therefore directly employ over 11,000 workers on a half-time basis; including indirect labor requirements, the employment generated would be about twice this number. There are therefore strong arguments in favor of a continuation of the program at least at its present level.

2.47. A provisional physical program for REPELITA IV has been prepared by the government and is summarized in Table 2.18. The standard KIP Perintis scheme is planned to continue at about its present level of 3,000 ha per year. In the first year (1984/85) the per ha allocation will remain at its current level, but it is thereafter planned to raise the allocation to Rp. 6 million per ha, if budgetary resources permit. Two innovations are proposed in addition to the standard program. First an allocation of Rp. 4 million per ha is proposed for 15,000 ha already improved in REPELITA III or before. This is an important proposal and provides an excellent opportunity to remedy the relative neglect of human and solid waste investments in the "first round" of KIP Perintis kampungs. The program should be flexible and could permit the construction of small MCKs or the construction of individual toilets connected to individual or shared leaching pits, perhaps on a matching grant or loan basis. Second, a special program for upgrading the environmental conditions in and around markets has been proposed for a total of 1,000 ha. This would be in addition to the INPRES Pasar program, whereby loans are made by the central government to local authorities for the construction and rehabilitation of markets (para. 4.39). In light of the discussion earlier, it would be desirable that, in the future, KIP should become a "financial and technical assistance" program, with central government funds allocated through "financial" and not "project" assistance to the local governments.

2.48. Expenditures by the central government on these programs would amount to about Rp. 160 billion (Rp. 96 billion in 1982 prices) over the five-year period. In real terms average annual central government spending would be about 45% higher than in the first four years of REPELITA III. But in

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1/ In many smaller towns, needs for kampung-specific improvements may be less. As a result, it has been observed that there is significant "over-designing" of KIP components in smaller towns. Notably, walkways are wide, and drain profiles are often set above the level of the ground, creating a potential for flooding.

TABLE 2.18: PROPOSED PERINTIS PROGRAM FOR REPELITA IV AND COMPARISON WITH REPELITA III ACHIEVEMENTS

	REPELITA III	REPELITA IV (Preliminary Targets)
A. New Areas		
Area Covered ('000 ha)	11.7	15.0
Number of cities		400
Beneficiaries (million)	2.7	2.5
Unit Costs (Rp. million/ha)	3.1	6.0 a/
B. Improved Areas b/		
Area Covered ('000 ha)	-	15.0
Number of Cities		200
Beneficiaries (million)	-	3.5
Unit Costs (Rp. million/ha)	-	4.0
C. Market Areas c/		
Area Covered ('000 ha)	-	1.0
Number of Cities		100
Beneficiaries (million)	-	n.a.
Unit Costs (Rp. million/ha)	-	10.0

a/ In 1984/85, allocation remains at Rp. 3.1 million.
b/ This program will not begin until about 1986.
c/ This program is being studied in 1985, and it is hoped that implementation will begin in 1985/86.

Source: Department of Public Works, D.J. Cipta Karya.

addition to allocating more central government funds to this program, it is important that more emphasis is given to raising the financial contribution of the local governments, particularly for those components (such as markets, MCKs and garbage collection) whose costs can potentially be recovered from users, but also for other local infrastructure such as footpaths, small roads and micro-drainage. This could be helped through greater access to loan funds. Cost estimates of the overall program are presented in Table 2.19. Here it is assumed that the share of local government spending in the total spending on KIP rises from 25% in REPELITA III to 50% in REPELITA IV. As discussed in Chapters 4 and 5, this would require a doubling of local government spending in this sector but some of this could be recovered from the final users. This trend is also in keeping with the original intention of the KIP Perintis scheme whereby local governments would be "stimulated" to play a more active role in the upgrading of kampungs.

D. URBAN TRANSPORT

Urban Roads and Traffic Management

2.49. Over the last decade the number of motor vehicles in Indonesia has increased at an average annual rate of almost 15%. 1/ In and around major cities and other densely populated urban areas, the effect of this increase has been particularly acute. Meanwhile, although sizeable investments have been made by the central government in road reconstruction and upgrading, the main thrust of the national transport policy has been to improve the flow of goods rather than people, which has resulted in an investment program emphasizing links between cities, rather than within cities. While primary urban roads account for almost 15% (in terms of length) of the national total, the proportion of central government development spending on roads allocated to urban areas in the first four years of REPELITA III was less than 8%. The primary responsibility for urban roads has therefore rested with the local authorities; about 70% of all development spending on urban roads during REPELITA III has come from the provincial and kotamadya/kabupaten budgets, compared with less than 50% for all (rural and urban) roads.

2.50. As a result of these two factors--rapid growth in urban traffic and relatively low investment in urban roads--traffic operating conditions are, in general, deteriorating. The situation is particularly serious in metropolitan areas. In Jakarta, for example, a recent study has estimated that between 1975 and 1981 road capacity grew by 22% while traffic grew by 55%. 2/

2.51. Recognising this serious situation and that the local authorities are unlikely to have sufficient resources to meet the needs in the sector, the central government will in future play a more important role in the planning,

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1/ See Annex II, Table 4.1 for vehicle registration data.

2/ See Final Report of the Jakarta Traffic Management Study, DKI/Colin Buchanan and Partners, 1983.

TABLE 2.19: KIP: COST OF TENTATIVE REPELITA IV INVESTMENT PROGRAM AND COMPARISON WITH REPELITA III
(Rp. billion)

	Current Prices	Constant 1982 Prices
REPELITA IV		
Central Government Expenditure	160	96
New Areas	90	54
Improved Areas	60	36
Market Areas	10	6
Local Government Expenditure and Cost Recovery	160	96
Total Expenditure	320	192
Average Annual Expenditure	64	38
REPELITA III (First Four Years)		
Average Annual Expenditure	18	19

Source: For REPELITA III, see Table 2.1.
For REPELITA IV, Department of Public Works, D.J. Cipta Karya for central government spending, and mission recommendation for local spending.

design, and direct funding of urban roads. A new Road Law in 1980 clarified responsibilities among the various levels of government for different classes of roads, but in urban areas many links have not yet been categorized and the central government is assisting local governments with part of the network (the secondary arterials) which is not formally part of its responsibility (Table 2.19). Within the Directorate General of Roads (Bina Marga) a consultants' study is now underway to identify the major needs in the sector and formulate an investment program for REPELITA IV. In addition to central government expenditures on urban roads financed from the development budget, the government has also embarked upon a program of toll road construction in four or five major cities. This will be financed "off-budget", from foreign aid and domestic borrowing.

Table 2.20: URBAN ROAD NETWORK CLASSIFICATION AND RESPONSIBILITIES

Classification	Level of Government Responsibility /a	Estimated Length (km)
Primary Arterial	Central	2300
Primary Collector	Central	3400
Secondary Arterial	TK.I/TK.II	1300
Secondary Collector	Tingkat II	5400
"Desa" & "Lingkungan"	Tingkat II/Desa	6200
Total		18,600

/a For construction and betterment. Responsibility for maintenance of all roads (including primary) rests with provincial and Tk. II authorities.

Note: TK.I and TK.II refer to province (tingkat I) and Kabupaten/kotamadya (tingkat II) authorities.

Source: Bina Marga and local authorities.

2.52. Existing conditions. In assessing the adequacy of urban roads it is important to distinguish between the physical quality of the existing road surface (structural stability), and the ability of the existing network of roads to carry traffic without serious congestion (geometric adequacy). The distinction here is important; while structural instability of roads must be addressed first in any investment program for safety reasons, geometric adequacy is, over the longer run, more difficult and expensive to deal with. A recent survey of 64 cities and towns by Bina Marga concluded that about 50% of the main urban network is unstable; about 17% was found to be structurally unstable (i.e., liable to fail in the next five years even with routine maintenance), and 32% geometrically inadequate (i.e., unable to carry the

projected REPELITA IV traffic without extensive repeated congestion). 1/ This survey did not include Greater Jakarta, where in terms of geometric inadequacy the situation is much worse. A 1982 study of Jakarta found that, in the rush hour, 45% of all arterial road links experienced average motorized vehicle speeds of below 25 km/hr; 76% of the links experienced this speed of below 25 km/hr. Already over 20% of the network is loaded above capacity, having a vehicle to capacity ratio (v/c) of over 1. 2/ Almost 40% of routes were operating at levels of v/c above 0.8, which is usually regarded by traffic engineers as the upper bound for "reasonable" operating conditions. In the five years 1982-1987, traffic in Jakarta is projected to grow by 48%. 3/ Even after allowing for a major road investment program and traffic restriction schemes, 63% of the network is expected to have v/c values greater than 0.8 by 1987; only 37% of the network will still be operating satisfactorily. Average speeds in the capital city will fall by half to 15 km/hr, over a million additional hours per day will be wasted in congested traffic, and road accidents will rise.

2.53. The Investment Program. These are serious conclusions. In particular, the geometric inadequacy of the urban network is worse than expected, with urgent implications for the REPELITA IV investment program and for policies relating to public transport, traffic restraint and cost recovery. The urban highway planning team have concluded that "it is quite unsatisfactory to continue the REPELITA III urban highway improvement policy of mostly overlay with limited residual life. Within a few years the traffic situation in most cities will be quite intolerable. The cost to solve the problems then will be astronomical, if it at all will be possible". 4/ For each road link, three broad options have been identified for treatment in the coming five-year plan. The first option consists of no regular maintenance but periodic support works when the road become unusable; this form of maintenance has been the norm for most urban roads in the past. Under this treatment, roads continue to deteriorate until substantial repairs are required. Therefore, although cheap initially, this option is expensive over the long run. Option II consists of strengthening the road to a 5-10 year life and thereafter maintaining regularly. This would be combined with

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1/ See Mid-term Progress Report of Advisory Team for the Urban Highway Investment Program, Sub-directorate of Urban Highway Planning, July 1983.

2/ Jakarta Traffic Management Study, op.cit.

3/ There are three factors that may cause the growth of traffic to be less than this: the increase in fuel prices in January 1983 (and probable future increases), the slower projected rate of growth of the overall economy, and the decision of the government to cease providing passenger cars to middle-level officials. The effects of these three developments on Jakarta's traffic is still unclear.

4/ Mid-term Progress Report of Advisory Team for the Urban Highway Investment Program, 1983, op.cit., p. 37.

minor repairs of shoulders, sidewalks and drainage. This is the basic desirable option for maintaining structural stability. The third option addresses problems of geometric instability. It may consist of relatively inexpensive measures such as traffic management and spot widening, together with strengthening of shoulders and sidewalks and provision of lanes for slow-moving vehicles, all of which can be achieved under present rights of way and without demolition. It may also include more expensive components, such as road widening and ultimately the construction of new roads.

2.54. Ideally the sub-optimal Option I should be entirely avoided. Either Option II or a combination of II and III should be adopted for all urban roads according to projected traffic conditions. This situation would the most efficient and the most cost-effective; it would be possible, for example, if there were full cost-recovery for road use (see Chapter 5) and if road charges were earmarked specifically for road works. Aware that this is not feasible, the urban roads team at Bina Marga have prepared a preliminary REPELITA IV program that is based up on rough estimates of available funds. It is therefore far from optimal; about 30% of urban roads would still receive Option I treatment. Even so the proposed five year program of about Rp. 200 billion (current prices) for direct central government spending and about Rp. 340 billion for grants to lower levels of governments is roughly 26% higher in real terms than central government expenditure during REPELITA III (Table 2.21). In addition these estimates may not fully reflect the effects on the foreign exchange component of costs of the 1983 devaluation. The suggested financial allocation should therefore be regarded as the minimum necessary.

2.55. In terms of investment costs these budgetary expenditures are overshadowed by investment in urban toll roads. Jasa Marga, a state-owned enterprise has been charged with the responsibility for constructing and operating toll roads in about six cities during REPELITA IV. Jakarta accounts for about half of the Rp. 1.0 trillion that is proposed to be invested in these major projects. 1/ It is intended that costs should be fully recovered and all financing will be "off-budget"; Jasa Marga has already made two bond issues in the Jakarta stock exchange. While the toll road approach is appealing from the perspective of charging the principal beneficiaries (the road users) for the costs of the facility as well as a device for reducing reliance on the central government budget, this approach is not likely to be a cost-effective means for dealing with the urban traffic problem. A major concern regarding the use of tolls for such capital-intensive investments is that they tend to divert scarce capital resources from equally or more deserving lower-cost investments merely because they are expected to be self-financing. Their large requirements for loans affects the Government's foreign borrowing capacity and may squeeze out borrowing needed for other sectors. Once a toll is applied to an urban road, some (or substantial

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1/ The detailed investment program in urban toll roads for the coming five-year period has not yet been finalized. It is hoped that it can be included in the final draft of this report.

amounts of) traffic will be diverted to other routes, a situation which is not likely to make the most economic use of the road system. Urban toll roads typically cost more to construct and are not as well adapted to urban traffic as are toll-free limited access roadways or freeways. Tolled limited access roadways often require costly toll facilities along with associated bridges and ramp roads. Furthermore, in order to control access/egress for tolling purposes, toll road interchanges are typically spaced further apart than non-tolled limited access roadways. This is a serious shortcoming in urban areas where trips are usually short. Unlike untolled facilities, toll roads cannot easily be improved in stages in accordance with traffic demand. By comparison, untolled facilities could avoid costly grade separations, toll booths, and side-street access controls until traffic demands warrant these investments. The recent Jabotabek study, while endorsing in general the need for major new road investments in the capital city concluded that some of the links in the proposed toll road system may be uneconomic and should be reconsidered. 1/ More generally, given that the less-costly elements of the urban roads program are constrained by lack of funds, it will be necessary to consistently ensure that the allocation of resources among various components of the overall program is optimal. In short, the proposed major toll road investment program in urban areas should be carefully reviewed with particular attention directed at securing other revenue sources for financing urban transport infrastructure. (See also Chapter 4.)

Table 2.21: URBAN ROADS: COST OF TENTATIVE REPELITA IV PROGRAM AND COMPARISON WITH REPELITA III
(excluding toll roads)
(in billion rupiah)

	Current Prices	Constant 1982 prices
REPELITA IV		
Central Government	196	118
Central Grants to Local Authorities	340	204
Local Governments Own Contribution	117	70
Total Cost	650	392
Average Annual Cost	130	78
REPELITA III (1st Four Years)		
Average Annual Cost	57	62

Source: REPELITA III Program, Table 2.1.
REPELITA IV Program, Department of Public Works (for Central Government program), and mission estimates (for local government contributions).

1/ Transport strategy for Jabotabek, Report No. I/7 of the Jabotabek Implementation Advisory Team, Cipta Karya, November 1981, p. 7.

2.56. Probably the most cost-effective investments in road transport lie in improvements in traffic management, which has been relatively neglected in REPELITA III (Table 2.1). Two elements are involved here. First are investments in road signs, road markings, traffic lights and relatively small road improvements (curb works, traffic islands, etc). Second, and equally important, are improvements in driver education and enforcement of road discipline. In this regard the recent Jakarta Traffic Management Study 1/ noted a "flagant disregard of traffic regulations, signs and signals, bordering on a situation of anarchy in the streets". This study recommended a major expansion in investment in traffic management in the capital areas and similar increases are required in other cities. Given the low level of investment, it is recommended that total spending be at least doubled in traffic management in the coming years.

Public Transport

2.57. In devising a strategy for public transport for the coming years, there are three broad related questions that must be addressed. First, what is the appropriate role for the government in the sector? Second, to the extent that the government is to guide investment in public transport, or actually to directly participate itself, what is the appropriate mix of investment in different transport modes and, in particular, in bus and rail transport? Third, how can the efficiency and quality of public transport be raised and how can commuters who currently use private transport be encouraged to switch to public transport? These questions are briefly considered below. However since each of these questions relate to government policies on pricing and cost recovery, the following paragraphs should be read in conjunction with Chapter 5 (paras. 5.12 - 5.17).

2.58. The Role of the Government in Public Transport. Urban public transport is mainly provided by the private sector; probably over 95% of all passenger trips are provided by private operators. However the role of the government is increasing rapidly. This is most evident in Jakarta; while 5 years ago the state-owned bus company, PPD, operated about 30% of all large buses, by the end of 1983, over 97% of large buses in the capital city will be operated directly or indirectly by the state (Table 2.22). A state-owned bus company (P.N. Damri) also provides services in five other cities, and this service is being expanded to an additional three cities in 1983. 2/ The principal reason for this trend of increasing government involvement in the sector is the failure of the private sector to operate satisfactorily under government-controlled low bus fares; eight private companies have been nationalized in Jakarta over the last four years at their own request. The government-owned companies on the other hand are provided with capital grants and operating subsidies (para. 5.13). Central government spending in

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1/ Colin Buchanan, 1982, op.cit. p.v.

2/ Medan, Bandung, Semarang, Surabaya and Tanjung Karang are now being served. This year additional public bus services have been provided in Ujung Pandang, Padang and Palembang.

Table 2.22: PUBLIC TRANSPORT IN JAKARTA (FIXED ROUTE); NUMBER OF BUSES BY SIZE AND OWNERSHIP, SEPTEMBER 1982

Type of Bus	Ownership (Year of government take-over in parenthesis)	Number
Large Buses		2699
PPD	State-owned company	810
Single Decker		(650)
Double Decker		(110)
Express		(50)
Units	Government (1979-81)	1280
Mayasari	Government/Private	330
Regular	Government (1983)	(260)
Express	Private	(70)
Medium Sized Buses		2153
Kopaja	Private	278
Metro-Mini	Private	1875
Small Buses/Colts		2037
Opelet	Private	1032
Microlet	Private	1005
Total		6889

Source: Department of Communications; and Perum PPD: Trayek Angkutan Umum DKI Jaya, Posisi 5, September 1982.

the sector, principally in the form of capital grants to PPD for Jakarta, has been high in the first four years of REPELITA III, amounting to Rp. 160 billion, or 15% of total spending on urban services by all levels of government.

2.59. Investment needs in public transport are great; it will be necessary over the next five years to substantially increase capacity and to raise the quality of service. The sector could easily continue to absorb a rising proportion of government funds allocated to urban services. Where should government involvement stop? Already, several other cities have needs as urgent as those in Jakarta and in a few years this number will multiply. There are also questions of equity involved here; commuters in Jakarta who currently receive subsidized bus transport are generally better off than those in other cities (Chapter 1). Given financial constraints it is essential that a new strategy be devised for REPELITA IV. Rather than provide grant finance exclusively to government-owned transport companies, it is desirable that credit facilities and technical and managerial advice be available to all companies, whether public or private. Incorporating the private sector companies--some of which are small and apparently disorganized, but in fact are reasonably efficient--into the increasingly complex transport systems of the rapidly modernizing metropolitan areas is a major challenge. Small, informal and traditional vehicles can play a particularly important role; they are more flexible, more labor-intensive, and often cause less pollution. They should receive priority over large bus investments if there is a choice to be made. In some cities, however, smaller and more traditional vehicles, notably the non-motorized becaks (trishaws) are facing severe and progressive retrictions in terms on where they may operate, and in some cases their numbers will be substantially reduced. 1/ It is argued that they are crowding the roads and slowing traffic. While this is no doubt true, it may be preferable to invest heavily in stopping places along crowded roads and in improving road discipline through education and enforcement. 2/ If traffic projections are to be believed and the average speed in peak hours in Jakarta falls to 15 km/hr. by 1987, it is likely that private automobiles will be holding up the becaks rather than the other way around!

1/ DKI Jakarta, for example, has announced that becaks will be phased out in the next few years; the number has already been dramatically reduced since the beginning of 1983, when there were an estimated 54,100 becaks in Greater Jakarta.

2/ In many major cities in the developing world, the informal transport sector is increasingly being appreciated as providing a viable, efficient and non-polluting alternative to modern buses. For example in Madras, trishaws have been deliberately encouraged with very satisfactory results; see paper by Professor Vixtor on Trishaws in Madras, presented at Conference of Road Engineers of Asia and Australasia, August 1983.

2.60. Buses versus Rail. Currently, over 99% of all intra-urban trips on public transport are by road. Well under 1% of trips are by rail. Within Jakarta about 0.9% of trips are on rail and within the Greater Jabotabek area, 8.9%. Seeing rail as a long-term viable alternative to road transport in the capital region, the government with assistance from the Japanese government is planning a major overhaul of the Jabotabek rail system, involving a drastic upgrading of existing routes, including track replacement and elevation, purchase of new rolling stock and possibly the addition of one or two new routes. Under the improved network, ridership is projected to rise dramatically; in the 1990s, it is hoped that the share of rail in the total number of trips in Jabotabek would rise to 20-30%. 1/

2.61. The cost of the proposed system has not been finalized but is in the region of $1.2 billion (in constant 1982 prices) over the period 1983/84 to 1990/91. In terms of its size, therefore, this investment would swamp all other government spending on public transport in REPELITA IV. In real terms this amount is equivalent to 670% of total spending on all forms of public transport by all levels of government in the first four years of REPELITA III. The Jabotabek system is operated by the national railway company (PJKA), which is intended to cover operating costs and to pay 3% interest on assets procured by the government. In recent years, however, PJKA has recorded an operating ratio (operating costs divided by revenue) of 140%, so subsidies have been necessary. The Jabotabek railway masterplan argues that the increase in traffic will be sufficient to cover operating costs, but that some capital subsidies would still be needed.

2.62. The status and phasing of this project is not clear at present. While the mission preparing this report has not explored the economic or financial viability of this project in any detail, it is worth noting that at least three consultant groups involved in transport planning in the capital region have warned that railway traffic projections are too optimistic and that the huge expenditure involved may not be the most cost-effective means of dealing with Jakarta's transport problems. 2/ In view of these genuine concerns and the high foreign exchange component of the investment, it is

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1/ Urban and Suburban Railway Transport in the Jabotabek Area: Master plan; JICA, 1982.

2/ Traffic Planning Consultancy (Department of Communications), 1980-1983; Jabotabek Implementation Advisory Team (Cipta Karya/Department of Home Affairs/DKI), 1981-1983; and Jakarta Traffic Management Study (Department of Communications/DKI), 1981-1982.

important that each part of the project be subjected to careful appraisal. 1/ Deferral and/or cancellation of parts of the project appears appropriate in view of urgent financial claims of other important services in the urban sector. For REPELITA IV it may be prudent to restrict investment in the rail to maintain the existing main commuter line into Jakarta with some improvements to the existing track and some renovation to the rolling stock to provide better quality of service (para. 2.60). The additional ridership could then be monitored to judge whether more extensive investments would be justified.

2.63. Switching from Private to Public Transport. Most motorized trips in Indonesia's urban areas are taken on public rather than private transport. Even in Jakarta, which has a relatively affluent population and therefore a higher proportion of private vehicles, 60% of all person-trips are by public transport; only 40% are by private means. However the 40% of commuters travelling privately probably use about 80% of the road space. An individual travelling alone by car uses 17 times as much road space as an individual travelling by bus in Jakarta. 2/ Persuading individuals to switch to public transport is the single most important contribution that could be made to Indonesia's urban transport problems. To significantly raise the proportion of commuters using public transport it will be necessary both to make travelling by private car more expensive and inconvenient, and to make bus transport more attractive. By 1987, it has been estimated that at least 20% of passenger cars in peak hours in Jakarta will have to be restricted, whether by an area licencing scheme, increased vehicle or fuel taxes or by high parking fees. 3/

2.64. Currently buses are not perceived to provide a viable alternative to car riders; buses are dirty, in poor repair, dangerous and not airconditioned. 4/ Even though priority should be given to providing transportation for the lower-income groups, it is also important that high quality "white collar" bus services provided by the private sector not be discouraged or prohibited by regulations and controlled bus fares as at present (para. 5.16). Additional elements of a strategy for improving the quality and

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1/ It is sometimes argued that since this kind of project is financed largely by export credits and partly by foreign aid, it need not compete with other projects for the use of government funds. This is a faulty argument. The need to contain debt service means that total borrowing is limited. To the extent that foreign borrowing is used for one project, it cannot be used for another.

2/ Colin Buchanan Report, 1982, op.cit.

3/ Colin Buchanan Study, 1982, op.cit. See paras. 4.32 - 4.33 for a discussion of options.

4/ Jakarta's double-decker buses, which are only one to two years old, strongly reinforce this perception. Internal and external maintenance is very poor due to PPD's lack of funds. Many of these buses are in worse condition than the private sector's metro-minis which are generally much older.

efficiency of service may include the provision of special bus lanes, 1/ the provision of depot and maintenance facilities, and maintenance training courses and loans to allow the state bus corporations to maintain present service levels. Increases in bus fares would allow private operators to obtain loans on the private capital market for expanding their bus fleets.

Urban Transport, Conclusions

2.65. The following principal urban transport conclusions are offered for consideration:

(a) Proposed urban transport investments in Jakarta are too costly in the aggregate and should be reconsidered. A mere list of the more costly proposed urban transport investments in Jakarta over the next ten years suggests a program which is too large: Rail system $1.2 billion; toll roads $1.6 billion; outer ring road $0.3 billion; total of over $3.1 billion without bus system and arterial road improvements. These investments alone would exceed $500 per capita and would swamp all other proposed capital investments in the metro area. Furthermore, it is likely that these proposed investments would accommodate too low a percentage of urban trips. For example, it is estimated that rail system users would accommodate at the most, only 20% of peak hour transit trips, the bulk being accommodated by bus and para-transit modes of travel. The proposed toll road facilities would benefit more travelers than the rail system, but improvements in congestion away from the toll road corridors, and the likelihood of shorter trips in the toll road corridor is likely to be minimal. In summary the proposed investments would benefit too few travelers at an excessive cost.

(b) Place more emphasis on selected arterial road construction, road maintenance, and traffic management. Compared to investments in urban toll roads and rail system, much more emphasis should be placed on less costly but highly effective road maintenance and traffic management programs along with carefully selected investments in upgraded and new arterial roads. These investments are likely to improve transport for a much higher percentage of persons and goods and are likely to have a much higher economic rate of return (para. 2.56).

(c) Review the entire urban toll road program (i) in relation to other proposed road investments, and (ii) with regard to potential alternative urban transport funding resources. The proposed urban toll road program appears to have been devised from the need to avoid a call on the central government budget as opposed to resolving the problem of urban traffic congestion in the most cost-efficient way.

1/ The Jakarta Traffic Management Study recommended 90 km of express bus lanes for the capital city.

If alternative funding sources for urban roadways could be utilized it is unlikely that any urban toll roads would need to be constructed based on a systematic analysis of alternative roadway systems. Toll-free roadways with partial or complete access-controls may, however, be justified in high-demand travel corridors.

(d) Defer rail transit investment in favor of bus and complementary traffic management schemes. The question is not whether urban rail transit would be desirable but rather when and in what priority in relation to other proposed investments. In view of the large capital costs of the proposed rail system and limited economic payoff in relation to other less costly investments in bus system development and in associated traffic management measures, deferring further substantial improvements to the existing intra-urban rail system appears to be a desirable course of action (paras. 2.62, 2.64).

(e) Keep further public investments in the bus system to a minimum. While the objective of keeping bus fares as low as possible is desirable, an undesirable consequence of this action has been the virtual elimination of privately supplied bus service in Jakarta and other principal cities. In view of the pressing need for government investment in urban roads, traffic management, and maintenance--the funding for which can only come from the public sector--the policy of encouraging a greater government role in financing and running public transit services should be questioned. Rather than devoting additional scarce governmental financial and managerial resources in running public transit services, emphasis might be returned to regulation of the industry to assure safe and efficient service.

(f) Establish transport financing schemes under which private motor vehicle operators directly or indirectly pay for a higher percentage of urban transport costs. Given the substantial revenues needed to develop the urban transport system, and the disproportionate portion of total infrastructure needs caused by private vehicle owners (principally cars and trucks), it would appear that a system which reflects this use would be appropriate. Among all potential revenue sources, the gas and diesel taxes, and higher user charges on goods vehicles appear to have the most potential for raising additional revenues from urban transport beneficiaries. (See Chapters 4 and 5.)

E. HOUSING AND LAND DEVELOPMENT

2.66. Housing investment in Indonesia is considerably lower than would generally be considered desirable. Indicative standards suggest that expenditures of the order of 5% of GDP are usually required to keep pace with housing needs in developing countries 1/, and this is when starting from a reasonable initial stock. Although there are problems of measurement, it is

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1/ See e.g., World Bank: Shelter; Poverty and Basic Needs series, September 1980. These figures refer to total investment, not just that undertaken by the government.

estimated that only about 3% of GDP has on average been spent on housing investment in Indonesia over the last decade, and the initial stock is far from satisfactory.

2.67. The great bulk of housing in Indonesia--about 90%--is privately constructed and financed. Most of this investment and construction is undertaken personally by the owner/occupant, who generally arranges his own financing outside the formal banking system. This will probably continue to be the case for a long time to come. However, the role of the public sector in the provision of low-cost housing and mortgage financing is rapidly becoming more significant. The government recognizes that it will be necessary to expand this role--particularly with regard to financial intermediation in urban areas--if basic needs in housing are to be satisfied by the end of the century. There are three broad sets of questions to be addressed in this sector. First, what is the role of the public sector in constructing housing for urban dwellers? Second, how can the government support and encourage the private sector? And third, how is the investment program to be financed, and how can the development of a mortgage market be encouraged? This section deals with some of the issues relative to the first two questions, while issues of finance are discussed in Chapter 5.

Formal Housing Programs

2.68. Although the coverage of existing formal housing programs (in the public and private sector) remains quite limited, there has been a significant expansion of housing construction in the last decade. Since its establishment in 1974, the National Urban Development Corporation (PERUMNAS) has steadily increased its output, from approximately 70,000 units in REPELITA II (1974-79) to an estimated 90,000 units in REPELITA III (1979-84). About half of these were serviced sites with core units, with the least expensive costing approximately Rp. 1.5 million in 1983 prices. At this cost, PERUMNAS units are affordable for families with incomes of approximately Rp. 50,000 (20th percentile in Jakarta). 1/ 2/

2.69. In addition to financing the PERUMNAS program, the government has since 1978 provided mortgage financing through the Bank Tabungan Negara (BTN) for units built by private developers. As of September 1983, BTN had financed more than 90,000 privately constructed units (Rp. 403 billion), in addition to 82,380 PERUMNAS units (Rp. 120 billion). While 80% of the mortgages for PERUMNAS units were below Rp. 3 million, and therefore affordable by most urban families, more than 70% of mortgages for non-PERUMNAS units were above Rp. 5 million, meaning that they could only be afforded by families earning above Rp. 180,000 (80th percentile in Jakarta). While PERUMNAS has expanded its program considerably, BTN mortgage lending for privately constructed units

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1/ This implies that in Jakarta, these units could be afforded by all families except for the poorest 20%--an impressive achievement.

2/ See R. Dougal Menelaws and Duddy Soegoto, "The National Urban Development Corporation (Perum Perumnas): Past Experience and Future Opportunities for Low-Cost Housing", Interlink, 1983, for a concise summary of the PERUMNAS program.

has been growing more rapidly. Hence, BTN funds are being increasingly directed to a narrower segment of the housing market. Other institutional sources of housing finance, such as a recently established semi-private mortgage institution (P.T. Papan Sejahtera), cater to an even higher income clientele (1,000 loans as of September 1983, averaging Rp. 12 million each). Apart from BTN and P.T. Papan, there are no other mortgage lending institutions in Indonesia.

2.70. In view of PERUMNAS' limited capacity to expand its output, redirecting housing finance towards lower-income groups implies the construction of more privately built low-cost units. Specific measures are needed to stimulate low-cost housing production, such as (a) eliminating disincentives and regulations which prohibit or discourage private developers from building small units (e.g., smaller than 36 square meters); (b) requiring and enforcing a certain proportion of truly low-priced units for each private developer who seeks mortgage and/or construction financing; and (c) increasing access to land and finance for savings cooperatives or smaller developers who are building lower-priced units.

Informal Housing

2.71. As already noted, the great majority of Indonesia's urban population continues to shelter itself through its own means, sometimes supplemented by informal credit mechanisms and small private contractors. For Jakarta it has been estimated that the informal subdivision process accounts for about three quarters of the new housing in the city, and that during the 1970s some 30,000 hectares of land in the Greater Jakarta region were converted from agricultural to urban uses in this way. 1/ In addition to the new housing which is built informally, the existing housing stock has also expanded incrementally through individual home improvement efforts, particularly in improved kampung areas, where it has been estimated that an infrastructural investment of Rp. 1 million may lead to private investments of roughly twice that magnitude (see para. 2.39). Housing units built by PERUMNAS have also been expanded by beneficiaries, starting almost immediately after they are allocated.

2.72. In view of the importance of informal housing construction, a key policy issue is how this process should be supported, channelled or regulated by Government. Presently, regulations on minimum plot size, building and planning permits, and land titling and registration are largely ignored, either because they adopt unrealistically high standards or are difficult to obtain. For instance, the minimum plot size legally permitted in Jakarta is 90 square meters, which is clearly not affordable for a large proportion of the city's population at current land prices. 2/ More generally, the

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1/ Jabotabek Metropolitan Development Planning Reports (JMDP) T-29, Jakarta, December 1980; cited in Nick Devas, "Financing Urban Land Development for Low-Income Housing", Third World Planning Review, Vol. 5, No. 3, August 1983. p. 215.

2/ Jabotabek Metropolitan Development Planning Report (JMDP) T-29, Jakarta, December 1980, p. 4.

difficulties and confusion surrounding permits and land titles forces individuals and small developers to bypass these procedures in providing shelter. Hence, a more realistic and positive attitude towards informal housing, on the one hand, and the clarification of legal confusion and streamlining of land titling and registration procedures, on the other hand, can play an important role in stimulating private housing investment (and the associated employment). The uncertainty over land titles (Hak Guna Bangunan) also affects PERUMNAS housing, and it seems clear that the Agraria Directorate needs to improve the accuracy and speed of land measurement and titling.

2.73. Although the formal housing finance system is discussed later in Chapter 5, it is important to note, in connection with informal housing, that in addition to reorienting formal housing finance for newly constructed dwellings towards the lower-income segments of the market, it may be desirable to provide access to loan finance for home improvement (e.g., in sites and services and improved kampung areas). The incremental home improvement process in these areas makes an important contribution to augmenting the overall housing stock, even in the absence of loan finance. It may be possible to expand or accelerate this process of private housing investment through a carefully designed and implemented program.

Housing Investment in REPELITA IV

2.74. About 8 million people, or 1.5 million families, will be added to Indonesia's urban areas during the next five years (para. 1.53). This implies that about 300,000 additional housing units will be required per year just to house the new population, let alone to take care of the existing backlog. About one fifth of this number, or 300,000 units, over the five-year period would be financed through BTN under the planned lending program. This represents about a 50% increase in the number of loans made in REPELITA III. 1/ The PERUMNAS construction program is not yet finalized, but is currently planned to total 176,000 units over the five-year period. This represents an approximate doubling of the REPELITA III program and may prove to be too ambitious. BTN is currently planning to provide mortgages for only 120,000 PERUMNAS units. Included in the PERUMNAS program are 157,000 low-cost houses, 11,000 developed house lots, over 6,000 flats and a small number of middle-income houses.

2.75. In addition, the PERUMNAS program calls for the development of 250 ha of industrial and commercial land. These areas would form the core of general large scale Integrated Development Projects (IDPs), under which it is envisaged that the sale of developed commercial, industrial and high-income residential properties will help cross-subsidize construction of low-cost housing units, as well as permit construction of projects closer to city centers. In principle, this strategy is attractive, but its success will depend upon PERUMNAS' ability to function like a private developer and to ensure that the provision of low-cost housing is not displaced as the main focus of its efforts. In addition PERUMNAS may also be asked to execute or

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1/ See Annex tables for proposed REPELITA IV programs of BTN and PERUMNAS.

participate in large urban renewal and new town projects during REPELITA IV; even if no PERUMNAS funds are committed to these projects, they will demand a significant proportion of its time, attention and manpower. There is some concern that this might detract from its other programs and activities, which are already fairly ambitious.

2.76. PERUMNAS has made good progress over the last few years in its capacity to provide low-cost housing on a large scale. It has maintained unit costs and expenses at reasonable levels, streamlined many of its operational procedures and improved its project planning, construction management and accounting systems; in part this has been due to effective use of technical assistance. However, if PERUMNAS is to meet the ambitious goals it has set, a number of operational and financial procedures still require improvement. In particular, there are still significant delays in completing projects, obtaining land titles, announcing final selling prices, signing mortgages and transferring completed projects to local governments for maintenance. Moreover, there appear to be continuing deficiencies in the allocation process for completed units, which is largely oriented towards government employees. In addition, PERUMNAS has not yet implemented an immediate sale policy, whereby units are sold prior to or immediately upon project completion. The delays in converting existing preliminary sale (PPJB) agreements to BTN mortgages have recently led to a decline in sales income, which has in turn affected the volume of construction. Moreover, in recent years, construction completed each year has lagged significantly behind the total construction volume. It would appear therefore that projects are taking a long time to complete and perhaps funds are being allocated to new projects in preference to completing those in progress.

2.77. As of March 1984, PERUMNAS had a large stock of completed and allocated units occupied under PPJBs and some 13,800 developed lots which had not been sold. Therefore, although PERUMNAS reduced the number of vacant units in completed projects to a very low level, its unsold completed inventory continues to increase. Over the years the PPJB period has been reduced from the original two years to one year, and as of April 1984, to three months. However, in view of the phasing out of government funds for PERUMNAS and hence its need to obtain construction financing at market terms, failure to adopt an immediate sale policy could result in a difficult financial situation for PERUMNAS and a slowing down of its construction program. Thus the ambitious REPELITA IV program will be very difficult to achieve unless sales policies and strategies are changed and projects are completed more quickly. Apparently, PERUMNAS has recently been given both the authority to set its own prices and the authority to sell developed empty plots (KTM). This is important progress and removes the key barriers to the implementation of an immediate sale policy.

2.78. Land Requirements. The REPELITA IV housing program would require at least 5,000 ha of serviced land (assuming a net residential density of 60 units per ha). PERUMNAS currently has a land stock of about 1,400 ha, but a significant proportion of this land is not well located or physically suitable for low-cost housing construction. In several cases, PERUMNAS has been unable to acquire land in metropolitan areas where there is a great need for low-cost

housing. This is due primarily to the high land prices (now exceeding Rp. 100,000 per square meter in some locations) 1/, which are in turn a consequence of not only the rapid growth of large cities but also speculation which prevails in areas where public investments are being considered. On the other hand, many of PERUMNAS' projects are located in cities where housing demand is relatively weak on in distant and unattractive sites. As a result, difficulties have been experienced in marketing these units. A less dispersed and more demand-oriented approach to public housing construction would appear to be more effective.

2.79. During REPELITA IV, PERUMNAS plans to acquire 2,846 ha of land. Of this, 1,376 ha are required for its regular program, 970 ha for IDPs and 500 are to be banked for REPELITA V. To achieve this, a financial plan and new financial instruments will need to be developed for PERUMNAS or else it will run out of money for land acquisition and may be forced to develop sub-optimal sites, such as some of the ones it already owns. Some of the schemes which it plans to consider include land bonds, Guided Land Development, land adjustment, land consolidation and option purchase. It may also consider persuading land owners to contribute their land as equity in development projects (particularly the IDPs) so that it does not have to pay for land up front and carry it through until sale.

Guided Land Development

2.80. As already discussed in Chapter 1 (para. 1.58), many of the new arrivals in urban areas in the coming years will have to settle on the periphery of cities, in areas that are not yet planned and are currently only semi-urban in character. There are great advantages in the form of lower costs and the more orderly growth of cities to be gained from early investment in basic infrastructure in these areas. This is the principle underlying the proposal for Guided Land Development (GLD) by the Jabotabek study team. As a result of the study a GLD scheme has been recently initiated in Jakarta, involving the provision of a basic level of infrastructure to some 26,000 hectares of privately owned land over the next 12 years. 2/ Landowners will be encouraged to subdivide and sell or lease their land for residential development, and the infrastructure costs would be recovered from them through a betterment tax known as Pajak Khusus. 3/ This special tax was established in 1972 to enable the city to recover the costs of certain types of infrastructure from beneficiaries (landowners or occupants) in proportion to the benefits received (e.g., on the basis of length of road frontage). Despite the complexities involved in the GLD scheme (such as the identification of beneficiaries, method of calculating the tax and the timing

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1/ On this, see Menelaws and Soegoto; Interlink 1983, op.cit. pp. 23-24, as well as various Jabotabek studies on land issues.

2/ For further elaboration on GLD see JMDP Report (T-29), 1980. op.cit.

3/ This tax is discussed in detail in paras. 5.18-5.25 in this report. The entire costs of GLD could be borne by betterment taxes. (See Tables 5.5 and 5.6).

of its application) this approach addresses many of the key constraints for residential development, including the shortage of serviced land and the fact that public acquisition of land for housing is fairly limited and increasingly expensive. In view of this it is desirable that this approach be pursued more aggressively, particularly in the larger cities.

2.81. On the same lines, the government is currently exploring the options for implementing land readjustment schemes. A small-scale experimental project is being implemented in Denpasar, Bali, under which landowners in a 50 ha area are lending a small part of their land for a road which has already resulted in a fivefold increase in land prices. 1/

F. REPELITA IV. INVESTMENTS AND PRIORITIES

REPELITA III and REPELITA IV Comparisons

2.82. Table 2.23 compares the average annual expenditure by urban service for the last three years of REPELITA III with the required average annual expenditure of the preliminary investment program for REPELITA IV (both in constant 1982 prices). It indicates that total investment would increase 2.5 times in real terms requiring an increase of 18% per annum over the 5 years of REPELITA IV. 2/ As discussed in Chapter 4, this rate of increase will certainly not be possible under the existing pattern of finance, and will probably have to be cut back. It is therefore referred to as the "unconstrained" program. For the period 1982 to 1990, the central government development budget is expected to grow at best at 5.5% per year, on average. The proportion of central government funds allocated to urban services might be raised since this sector is low in expenditure compared to international standards (para. 2.03) and has a number of other attractive features (e.g., uses mainly domestic resources and is labor intensive). However, central government funds for urban services should probably only be expected to be increased from the present 3.2% of the budget to about 4.5%, given the competing demands from other sectors of the economy. This leaves the major portion of the increase to be funded from local revenues and user charges.

2.83. While significant increases in local revenues are certainly desirable and economically feasible, whether the amounts required and the rapidity of increase is found to be politically and administratively feasible, remains to be seen. If this level of expenditure cannot be financed, the question arises as to where cuts should be made. Rather than make average reductions across each service, it would be preferable to establish criteria for establishing priorities among urban services, then cut the areas of lowest priority.

1/ The government has in recent months given considerable attention to questions relating to land, including the legal and financial prospects for the introduction of land readjustment schemes in Indonesia. A conference on land issues was held in Bandung in mid-1983, organized by the government and supported by HIID staff.

2/ It must be noted that these expenditure figures refer to total spending by all levels of government and public enterprises using government-guaranteed loans. They do not correspond to the central government budget.

Table 2.23. INVESTMENTS IN URBAN SERVICES DURING REPELITA III AND OUTLINE INVESTMENT PROGRAM FOR REPELITA IV: THE "UNCONSTRAINED" PROGRAM (all in constant 1982 prices)

Sector	REPELITA III Average Annual Expenditure /a (1979/80-1982/83) Rp billion	% total	REPELITA IV Average Annual Expenditure /a (1984/85-1988/89) Rp billion	% total	Equivalent annual rate of real growth (% per year)
Water Supply	82	28	220	31	19
Drainage and Sanitation	38	13	58	8	8
Kampung Improvement	19	7	38	5	13
Urban Transport					
- New Roads, major upgrading	62	22	78	11	) 23
- Tollroads	-	0	120 /b	17	
- Traffic Management	5	2	10	1	13
Public Transport					
- Bus	45	16	45 /c	6	) 24
- Rail	-	0	90 /d	13	)
Other /e	34	12	42	6	4
TOTAL	285	100	701	100	18
Over 5 years	1,425		3,505		

/a Development expenditures by all levels of government and public enterprises using government-guaranteed loans. Routine expenditures would be over and above these levels (see table 2.24).

/b Rp. 1000 billion (in 1982 constant prices) is the outline overall program for tollroads. It is possible that Rp. 600 billion might be able to be implemented over REPELITA IV.

/c Rp 750 billion (in 1982 constant prices) is the overall program for urban rail expenditures over the years 1984-1991. By interpolation REPELITA IV expenditures would be in the region of Rp 450 billion.

/d The mission was not able to obtain projected expenditures for REPELITA IV. However if the policy of expanding bus transport through grants to the state bus companies for vehicle acquisition is continued, a similar sum as that expended during REPELITA III may be necessary.

/e Assumed to grow in line with urban population growth.

2.84. Comparison across sectors for REPELITAs III and IV (Table 2.23) indicates that while all sectors show increased levels of investments for REPELITA IV, some show much more dramatic increases than others and have resulted in changes to relative shares among the sectors. Water supply, urban roads and public transport have increased their share and the others, especially drainage and sanitation, have all received reduced shares of the pie. It is not clear whether these changes are a result of explicit priorities by government, or are the implicit result of a compilation of proposals from separate agencies.

Priorities among Services

2.85. Priorities are not matters of fact, but of value and judgement. The following list of criteria is one perspective which could be used to indicate the ordering of priorities among urban services. It does, however, reflect many of the development values embodied in government statements, and also reflects existing deficiencies in services. All may be considered "positive" criteria, but are arranged in descending order of importance:

a) emphasis on environmental health;
b) emphasis on social equity (programs reaching the poor);
c) emphasis on low-cost and cost-effective solutions;
d) emphasis on employment-generation;
e) emphasis on broad regional distribution;
f) emphasis on cost recovery; and
g) emphasis on city efficiency.

2.86. If the overall "unconstrained" investment program has to be cut by 25%, as appears likely, an alternative balance of investment is suggested in Table 2.24. In the table, the scale of each subsector is roughly based on the criteria outlined above, on feasible implementation capacity and on the service needs of the 1989 urban population. Compared to Table 2.23, REPELITA IV investment levels for water supply and kampung improvement are maintained, and environmental sanitation is increased. In transport, emphasis has been placed on lower-cost traffic management improvements and expanding the primary and secondary roads. These investments, it is argued, will form a more cost-effective transport infrastructure than expanding the toll road program. The major cuts are proposed in the bus and rail programs. For buses, it is suggested that increases in fares should be permitted, to allow bus companies to borrow on the private market for fleet expansion thus minimizing government investment. For rail, investments should be restricted to rehabilitation and maintenance of the existing principal commuter tracks in Jabotabek to provide a more efficient service and to monitor the increase in ridership before major investments are committed to the rail system. In general there is a danger that a very large volume of resources could be invested in metropolitan transport systems which would benefit mainly the middle- and higher-income groups. The indicative investment plan outlined in Table 2.24 would amount to 13% per annum increase in real terms above REPELITA III. Even with this reduced program major efforts will be required to improve local revenues and cost recovery (see Chapters 4 and 5). The cost per capita of the total 1989 urban population for the capital works program would be Rp. 13,000 per year (1982 prices).

Impact on Employment

2.87. The employment effects of the REPELITA IV indicative investment program (Table 2.24) are substantial. The sectors receiving most emphasis are those using a high labor to capital content, primarily local materials and a low input of foreign exchange. They are also widely dispersed, providing an even spread of employment around the country. A rough breakdown of costs for labor and non-labor inputs by sector is given in Table 2.25.

Table 2.24: ALTERNATIVE INDICATIVE INVESTMENT PROGRAM FOR REPELITA IV (in constant 1982 prices)

Sector	REPELITA IV Average Annual Capital Expenditures		REPELITA IV Average Annual Routine Expenditure (Rp billion)	
	Rp billion	% of total	For proposed Program	Total for sector /a
Water Supply	220	41	22	40
Environmental Sanitation				
- Drainage	37	7	3	8
- Human Waste Disposal	32	6	2	3
- Solid Waste Management	27	5	13	21
Kampung Improvement	38	7	4	12
Urban Transport				
- New Roads, major upgrading /b	100	19	15	30-40
of which (Primary Arterials)	(55)			
" " (Collector/Other)	(45)			
- Traffic Management /b	13	3	1	1
Public Transport				
- Bus /c	15	3	1	5
- Rail /d	5	1	1	1
Other	42	8	7	14
TOTAL	529	100	60	145
Over 5 years	2,645			

/a Rough indicative estimates only.
/b Of which about 20% of investment to Jakarta.
/c To maintain state bus corporations at present service levels. This excludes new investment undertaken by bus companies financed without government funds or guarantees.
/d Maintenance and rehabilitation to existing service in Jabotabek.

Table 2.25: PROPORTION OF COSTS SPENT ON DOMESTIC LABOR AND MATERIALS BY SECTOR (in percent)

Sector	Investment		Operation and Maintenance	
	Labor	Materials	Labor	Materials
Water Supply	35	65	50	50
Drainage	30	70	60	40
Sanitation	40	60	80	20
Solid Waste	15	85	80	20
KIP	34	61	60	40
Roads	25	75	50	50
Traffic Management	15	85	50	50
Bus	10	90	60	40
Rail	25	75	70	30
Other	40	60	60	40

/a Labor land, civil works, equipment.

Source: World Bank appraisal reports and background papers.

At an average pay rate of Rp. 1925 per day (1982 prices), the direct labor input for the reduced REPELITA IV investment program shown in Table 2.24 would roughly amount to 1,384,000 man-years for capital works, plus 698,000 man-years for operation and maintenance.

Metropolitan Development

2.88. The level and composition of investment in the largest cities is markedly different from that in smaller cities and towns. Table 2.26 presents proposed programs prepared by government officials and consultants for three major Indonesian cities. Comparison of this table with the overall indicative investment program (Table 2.24) highlights two principal features. First, at Rp. 22,000 per head per year the cost of metropolitan programs is 60%-70% higher (120% if urban tollways are included) than the average for the urban programs as a whole (para. 2.70). Since the large urban areas above 1 million population account for over 40% of all urban areas, the difference between metropolitan costs and other urban areas is even greater than suggested here. Second, the distribution of investments is different in the metropolitan sample than for the whole urban program, with 50% of investment in metropolitan areas put into transport (70% if tollways are included) compared to 26% for the program as a whole. A higher proportion of the metropolitan investment program is proposed for environmental sanitation (drainage in particular) and less for water supply and kampung improvement.

Table 2.26: COST OF INFRASTRUCTURE DEVELOPMENT PROGRAMS IN THREE MAJOR CITIES
(1982 prices)

SECTORS	CITIES							
	JAKARTA (DKI) /a Pop. 7,072,000 (1982)		METRO-BANDUNG /b Pop. 2,555,000 (1982)		MEDAN /c Pop. 1,270,000 (1982)		Average cost per capita/yr Rp.	% Distribution
	7 yr dev. program Rp. m /d	cost per capita/yr Rp.	5 yr. dev. program Rp. m /d	cost per capita/yr Rp.	4 yr. dev. program Rp. m /d	cost per capita/yr Rp.		
1. Water Supply and Resources	284,653	5,750	19,790 /e	1,549 /e	17,077	3,362	4,396	18
2. Sewerage/ Sanitation	61,071	1,234	34,340	2,688	5,040	992	1,567	7
3. Drainage	199,775	4,036	7,039	551	8,754	1,723	2,825	12
4. Solid Waste	78,668	1,589	13,269	1,039	3,862	760	1,348	6
5. KIP	26,913	544	3,346	262	3,054	601	480	2
6. Low-Cost Housing and Sites & Services	24,843 (GLD)	502	14,325	1,121	10,402	2,048	850	4
Transport								
7. Roads + bridges	241,179	4,872	21,973 /e	1,720	11,000 /f	2,165 /f	3,746	16
8. Buses	103,510	2,091	-	-	-	-	2,091	9
9. Traffic Management	53,823	1,087	-	-	-	-	1,087	6
10. Railways	220,477	4,454	-	-	-	-	4,454	19
TOTAL	1,294,912	26,159	119,082	9,321	59,889	11,651	22,044	100
11. Tollways	422,322	8,531	-	-	-	-		

/a JMDP Jabotabek Study. Jakarta Finance and Implementation Report. (Re-adjusted JMDP program.) Jakarta 1981.

/b Bandung Urban Development and Sanitation Project. Draft Final Report 1978.

/c Medan Urban Development, Housing, Water Supply and Sanitation Project. Summary 1980.

/d All costs deflated to 1982 prices.

/e Bank estimates of five-year development program requirements derived from long-term investment proposals.

/f Not included in strategy. Estimated on 18% of total infrastructure development expenditure.

Source: Government and consultant reports.

2.89. As noted in Chapter 1, it is important that Government's regulatory actions and investment decisions remain neutral with respect to city size so that each type of city can grow to its best potential. It is sometimes argued that since the per capita productivity of the larger cities are higher than for smaller ones 1/, they should claim a larger per capita share of public investment. While this may be partly true, it also means that personal and business incomes are generally higher in larger centers 2/, allowing these cities to finance a substantial portion of the investment in their areas from local revenues and loans, rather than relying increasingly on central government subsidies. This, it is suggested, should be the way to deal with these large investments in major cities. It would be worthwhile to review on a national basis, the system for allocating grant finance 3/ in relation to personal and business incomes in urban areas (which can indicate the level of potential local revenues). This relationship could be used to develop a sliding scale to indicate the appropriate level of total government subsidies which should be allocated, compared to the amount of investment which should be financed through loans and supported by local government revenues (see Chapters 3 and 4).

1/ This is less clear than statistics usually indicate. Businesses, banks and industries which may derive their income from elsewhere in the country may be located and taxed in the large cities, lending an erroneous impression of productivity to these centers.

2/ While this is true for Jakarta, personal incomes do not vary smoothly by city size in Indonesia (see Table 1.17).

3/ Particularly the project grant finance from sectoral agencies which accounts for a major, and increasing proportion of investment in metropolitan areas. See the analyses for Jakarta by JMDP. Jakarta Finance and Implementation Report, 1982.

CHAPTER 3: IMPLEMENTING THE PROGRAM

3.01. As the provision of urban services has expanded over REPELITAs II and III, the systems of administration and finance of the program have evolved to meet the changing needs. On the whole the programs have begun successfully, as indicated by the achievements described in the previous chapter. As the program continues to grow, the systems of implementation must continue to evolve. This chapter deals with issues of administration and manpower, and Chapter 4 with issues of finance. Although discussed separately they are fundamentally linked. For example, the existing administrative arrangements have shaped the patterns of financial flows and of manpower development, and the relative abundance of central government revenues from the oil sector, coupled with the lack of technical and managerial manpower at the local level, has tended to encourage a centralized system of administration.

3.02. Two important trends have broadly shaped the system of administration and finance in recent years. First, in order to improve the effectiveness and relevance of the programs, the central government has increasingly attempted to share authority and responsibility for planning and implementing investments with local levels of governments. Second, in an attempt to spread the services as widely and to as many cities as possible within the constraints of limited manpower, a standardized approach to the design and implementation of projects has become necessary, but a standardized approach has also tended to be a centralized approach. A by-product of these two countervailing pressures has been the development in many instances of a complex system of administration, with overlapping responsibilities, multiple channels of funds, and consequently, a lack of flexibility in adjusting investment programs to meet the needs of individual cities. In addition, in some cases, where programs have been planned and implemented by higher levels of government, local initiatives have declined. The government is aware of these issues and is taking a number of important steps to improve the capacities of both central and local implementing agencies.

3.03. This Chapter is divided into three parts. The first (Part A) reviews the existing administrative structure; beginning with an overview of the central and local agencies involved, it then describes and evaluates the organization of the four main urban services: water supply, sanitation and drainage, KIP, and urban roads. Part B deals with questions of manpower and training at the central and local levels for each of the main services. And Part C explores a number of institutional questions relating to planning and coordination of an expanded program.

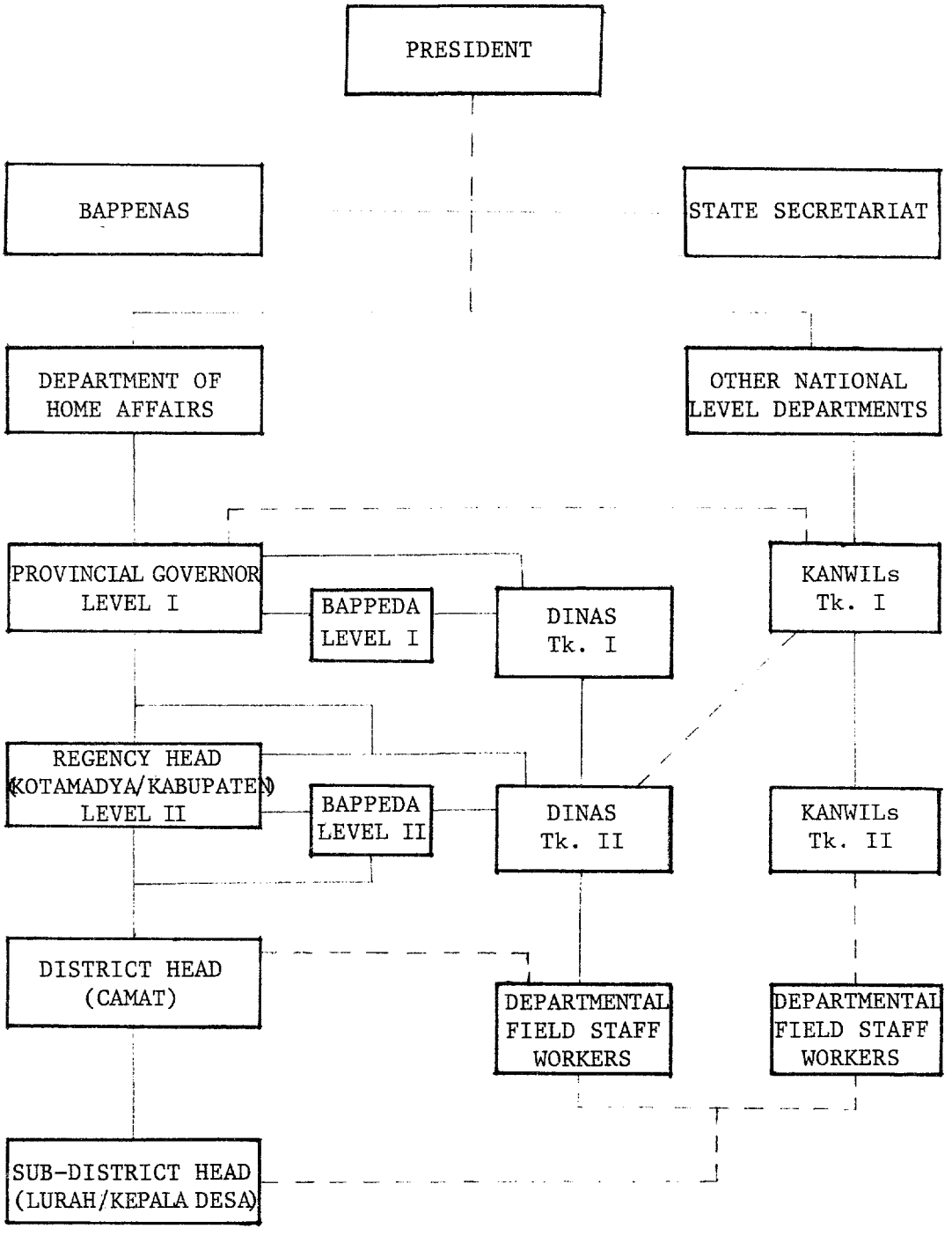
A. THE ADMINISTRATION OF URBAN SERVICES

Overview of Central and Regional Administration

3.04. Provision of urban services in Indonesia forms an integral part of the overall system of planning and delivery of public services in the regions (see chart 3.1). The 27 provinces form the "first-level" ("dati I" or "tingkat I") regions and each province is subdivided into second-level

CHART 3.1

Indonesian Government Administrative Structure



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("dati II" or "tingkat II") units consisting of 247 kabupaten (regencies) plus 54 kotamadya (municipalities). The kotamadya are predominantly urban in character but, as noted in chapter 1, there seem to be no special criteria governing whether an urban area shall be made a kotamadya. Jakarta (DKI) is a special case having the status of a province. The second-level regions are in turn subdivided into 3,500 third-level units known as kecamatan (districts), while these are again subdivided into 64,000 fourth-level desa or kelurahan (rural or urban villages). In large urban areas there are further divisions into Rukun Warga (RW) and Rukun Tetangga (RT) The latter, which each consist of about 150 families, are the smallest administrative units.

3.05. Indonesian administration is characterized by strong vertical relationships within each Department and less strong coordination and joint management of programs between Departments. Within the urban and social services, however, there is a strongly held philosophy common to all Departments, which emphasizes equitable distribution of services across income groups and regions, use of low-cost standards to spread available resources, and speed in the delivery of services. There is also a view that local communities should contribute to service provision through community effort (gotong-royong) which may involve personal work or financial contributions. This view appears to be held more strongly by local administrations than by some sectoral agencies. Yet at the same time some local administrations are reluctant to shoulder loans to fund new services or to tax the urban population more heavily to provide resources for services, despite the relatively low level of urban taxation and cost recovery compared to other developing countries. This reluctance is encouraged by the high proportion of central government grants (almost 80% of total expenditure; see chapter 4) and the availability of numerous sources of grant finance for development which can be obtained through lobbying and collaboration with different central agencies.

3.06. Indonesian law (notably Law 5 of 1974) makes a distinction between those services which are provided directly by central government sectoral departments, which are termed "deconcentrated" services, and those which are (or should be) provided by the regional government, which are termed "decentralized" services. Most elements of urban infrastructure (water supply, local roads, sanitation, solid waste) fall into the latter category. The law also refers to provision of services by a third means, namely "coadministration" (tugas pembantuan or medebewind), defined as "the execution of services by the regional governments under the direction of central government". To a large extent this third approach is a fair description of the means of provision of nearly every significant service provided by the regional governments. Most of the urban services noted in the "decentralized" category are in fact implemented in the style of coadministration.

3.07. Central Government Agencies. The Department of Home Affairs (Dalam Negeri) is primarily responsible for the guidance and oversight of regional administrations, and three of its Directorates General (D.J.) affect urban services and administration. The D.J. for General Administration of Autonomous Regions (PUOD) deals with nominations of governors and mayors, and staffing and remuneration patterns of each level of government; it allocates funds through the Subsidi Daerah Otonom (SDO) for the payment of salaries and benefits of staff of local authorities; it is responsible for budgetary and

financial control and supervision, the approval of city plans, boundary and status changes, and the supervision of public enterprises in the "decentralization" category--notably water authorities (PDAMs) and markets. It has recently expanded its funds assigned to local governments for the preparation of local development plans. The D.J. for Land Administration (Agraria) establishes policies and mechanisms concerning land law, cadastral surveys, registration and compensation, and implements them through offices at provincial and local levels. A D.J. for Regional Development has recently been established, which supervises the regions' capital development programs and guides local development priorities through allocation of grants to regional administrations' development budgets (the "Inpres" grants).

3.08. Responsibility for technical aspects of urban services is vested largely in the Department of Public Works (Pekerjaan Umum, P.U.). Its D.J. of Housing, Building and Planning (Cipta Karya) deals with water supply, sanitation and sewerage, solid waste, kampung improvement, housing, public buildings and city and regional planning; the D.J. for Roads (Bina Marga) is responsible for national highways including those running through urban areas; and the D.J. of Irrigation and Water Resources (Pengairan) is responsible in urban areas for major drainage, and plays a key role in decisions relating to the joint use of water resources for urban and agricultural purposes. The Department of Health (Kesehatan) has responsibility for monitoring and improving the quality of water supplies and sanitation facilities; it also constructs small-scale schemes for water supply and human waste disposal in rural areas. The Department of Communications (Perhubungan) is responsible for traffic control and public transport. Street lighting is provided through the National Electricity Corporation (PLN). For most of these services the emphasis has been on constructing new capital works. The technical and financial implications for operations and maintenance, which is usually the responsibility of the local governments, has been given less consideration. 1/

3.09. Medium term priorities for investment in urban services are established by the National Planning Agency (BAPPENAS) in the five-year development plans. BAPPENAS also reviews and approves specific projects and programs proposed each year by the national sectoral Departments, and the regional plans prepared by provincial and second-level regions. The Department of Finance (Keuangan) has four Directorates General with significant duties in relation to local governments. The D.J. for Internal Monetary Affairs exercises general oversight and monitoring of local governments, and administers some loan schemes. The D.J. for the Budget issues authorities for all central government payments and a third D.J. audits local governments. Finally, the D.J. for Taxation is responsible for the collection of certain assigned revenues and supervises the local property tax (IPEDA).

1/ For example, simpler water treatment plants could be built, and the maintenance costs of low-cost kampung infrastructure more fully considered in the design standards.

3.10. Most of the central government sectoral ministries have branch offices at province level throughout the country (Kantor Wilayah Propinsi or "KANWILs"). Frequently there are also sub-branch offices at the kabupaten/kotamadya level ("KANDEPs"). KANWILs and KANDEPs are staffed and paid for by their central departments, and finance their work programs from the central government budget.

3.11. Regional Government Organization. Regional administrations at province and dati II levels comprise separate legislative and executive branches. The legislative arms are the "people's representative regional councils" (DPRD) and consist mainly of elected representatives. The executive arms are headed by regional heads; Governors for Provinces, Mayors (Walikotas) for kotamadyas, and Bupatis for the kabupatens. They are appointed by the Minister of Home Affairs on the nomination of the DPRDs. Provincial governments are generally not greatly involved in the direct provision of urban services (except DKI Jakarta), although in certain cases they do provide some financial assistance. They are, however, responsible for overseeing all the work of the second level of government. As urban service programs expand to numerous settlements in a province, the provincial authorities can be expected to assume a greater importance in guiding, assisting and evaluating urban plans and programs.

3.12. The real responsibility for most urban services lies at the kabupaten/kotamadya level. Responsibilities are shared among a number of departments: Public Works (Dinas P.U.) is generally the most important, being concerned with roads, drainage, sanitation, public buildings, and parks. In some localities it is also responsible for the solid waste service (although there is often a separate Dinas Kebersihan) and for the fire services (although there may be a Dinas Kebakaran for this purpose). Where kampung improvement is undertaken, a separate KIP unit is established, and sanitation and rural water supplies are sometimes provided through the Health Department (Dinas Kesehatan). Markets and water supply are generally run as local enterprises, although water supply may alternatively be under the (temporary) direct control of Cipta Karya or organized as a local Dinas (para. 3.23). Traffic control and regulation of public transport are not decentralized but are the direct responsibility of the Department of Communications. Urban public transport itself is provided in most cities by the private sector although public enterprises have taken over responsibility for bus services in Jakarta (PPD) and in four other cities (P.N. Damri).

3.13. Village governments and community (RT) groups also play an important role at the very local level. In addition to the heads of the administrative areas (RT, RW, Lurahs), village associations (Lembaga Kemajuan Masyarakat Desa, or LKMD) play an important role in neighborhood life. Besides maintaining access roads and footpaths, clearing drainage channels, house-to-house collecting of solid waste, and managing public water standpipes, these local groups have responsibility for planning and implementing the Inpres Desa program and in some instances are actively involved in setting local priorities for KIP layouts. In many smaller urban communities, the bulk of urban services such as drainage, waste disposal,

footpaths and even water supply have been provided on an informal basis by the local groups through gotong-royong organized by the LKMD and the RT, RW and Lurahs.

3.14. Defining Responsibilities at the Local Level. The allocation of responsibilities for local services between central government (through the KANWILs) and the regional authorities (through the Dinas) is not always completely clear-cut; both kinds of agency may be involved in a particular geographic and functional service area. For many Departments (e.g., Education, Health), KANWIL and Dinas organizations are separate and distinct at each regional level, although the head of each may be the same person. The respective duties of each are in theory clearly defined but in practice there are overlaps. In the case of Public Works there were until recently no KANWILs and the regional Dinas carried out Departmental programs on an agency basis, as well as managing the regional governments' own programs. Sometimes ad hoc project teams were established by the central government to carry out particular development projects at the local level. This has been the case with the Proyek Air Bersih (PAB), established by Cipta Karya at the province level, for new water supply schemes.

3.15. However, in preparation for REPELITA IV, Department P.U. has decided to established KANWILs at the provincial level. Currently, there are separate Dinas within the province administrations for roads, irrigation and general works (the latter being the Cipta Karya functions) and the intention is to adopt an arrangement similar to that for agriculture, whereby both central and regional government programs and budgets are discharged by these Dinas, with the KANWIL exercising a policy and coordination role among the various Dinas. To this end, KANWIL heads have already been appointed and further KANWIL staff will be appointed as central funds allow. The intention is eventually to extend this arrangement to second-level regions. It is not clear whether the KANWIL PU will play a purely coordinative and assistance role or whether it will take on much of the actual implementation previously exercised by the project units, or even take over tasks previously undertaken by Dinas P.U.

3.16. Planning and Coordination at the Local Level. Heads of regional administration exercise a dual role. Not only are they the leaders of the executive branches of the "autonomous regional governments", they are also the local representatives of the President, acting for this purpose in a "deconcentration" capacity. This deconcentration role requires heads of regions to exercise a general oversight over all government functions in their areas and in particular to coordinate the work of all central and regional government agencies. To this end heads of KANWILs, though subordinate in their executive capacity to their central sectoral departments, are for coordination purposes subject to the authority of the regional heads.

3.17. A particularly important role in the coordination of central and regional government programs is exercised by the "BAPPEDAs" (Regional Development Planning Boards) which are established in every province and second-level administration. As a planning service to the regional heads, the BAPPEDAs fall under the jurisdiction of the Department of Home Affairs. The

BAPPEDAs have both annual and longer-term planning functions in relation to regional development programs. Each year they are supposed to prepare schedules of development project proposals in all services areas, for execution by both KANWIL and Dinas organizations, for approval by regional heads and submission to central government. These submissions are used as the basis for central government financial allocations for both sectoral department development projects to be carried out in the regions, and for the INPRES development grants to the regional governments. For the purposes of urban service programs, the second-level BAPPEDA play a potentially important function to define local needs and priorities, and match the spatial and service network plans and programs to available resources. Possible improvements in these areas are discussed in paras. 3.73, 3.74(b), 3.80-3.82.

3.18. Longer-term development planning in the regions is attempted through the medium of five-year provincial REPELITAs coincident with the national five-year plans. These local REPELITAs, which contain, inter alia, programs for development expenditure by central and regional government agencies are prepared by the province BAPPEDAs in liaison with the second-tier BAPPEDAs. At present these documents are of mixed quality and relevance, but they have the potential to become key instruments of medium-term planning (para. 3.81).

3.19. The Question of Decentralization. Indonesia is a unitary state, but the pace and spread of development and the vast size and diversity of the country has meant that more initiative and responsibility for implementation of local services must be devolved to lower levels, but under central guidance on policy and resource allocations. This proposition is universally agreed; but a major area of discussion within the government is how rapidly this process of devolution can proceed. This question is particularly relevant in the case of urban services where the scope for devolution may be greater, since the managerial and technical capacity of the kotamadya, especially the larger ones, is often superior to that of the kabupaten 1/. The discussion has become more urgent since it has become apparent that central government funds are likely to be relatively less important in the financing of urban services than in the past (Chapter 4).

3.20. The view of the Department of Home Affairs, which is responsible for the administration and staffing of local administration, is that the devolution to local administrations of the "decentralized" services already identified in the law should be implemented quickly and that the powers must be accompanied by the allocation of grant funds directly to the local level instead of being implemented through the budgets of sectoral Departments. These Departments would provide policy guidance on technical matters, and technical assistance to local administrations. The view of some sectoral Departments is that, while in agreement with decentralization as a long-term goal, due to weaknesses in local capability to plan and manage, to staffing

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1/ About 35% of all government spending on urban services is made by provincial and tingkat II authorities, compared with a 36% average for all other regionally incurred expenditures (see Chapter 4, Table 4.2).

Table 3.1: INSTITUTIONS RESPONSIBLE FOR SELECTED URBAN SERVICES DELIVERY ACTIVITIES

	Sectoral Activities					Intersectoral
Level of Government	Water Supply	Sanitation (Human+Solid Waste)	Drainage/Flood Control	Kampung Improvement (KIP)	Urban Roads	Planning + Coordination
Central Government	*Dept.of Home Affairs -DG.PUOD/Dit.of Urban Development (general supervision) *Dept.of Public Works -DG.Water Resources ("macro" supply) -DG. Cipta Karya -Dit.of Sanitary Engineering(DSE) (technical develp.)	*Dept.of Public Works -DG Cipta Karya -Dit.of Sanitary Engineering(DSE) (technical develp.)	*Dept.of Public Works -DG Water Resources ("macro"drainage works) -DG Cipta Karya -Dit.of Sanitary Engineering(DSE)	*Dept.of Public Works - DG Cipta Karya -Dit. of Housing	*Dept.of Public Works -DG Highways (Bina Marga) -Dit.Highway Planning -Dit.Highway Dev.	* BAPPENAS (national socio-econ. planning) *Dept.of Public Works -DG Cipta Karya -Dit.of City and Regional Planning (urban physical planning)
Province (Tingkat I)	- Kantor Wilayah Public Works/ Cipta Karya -Provincial Water Projects("PAB") under DSE	- Kantor Wilayah Public Works/ Cipta Karya Shared with -Dinas Public Works/ Bagian Cipta Karya	- Kantor Wilayah Public Works/ Cipta Karya -Provincial Drainage Projects("PLP") under DSE	-Dinas Public Works/ Cipta Karya or - Kantor Wilayah Public Works - Provincial KIP Project Office ("P2LPK") under Dit.of Housing	-Dinas Public Works/ Bina Marga or -Kantor Wilayah Public Works - Provincial Project Office under Dit.of Highway Dev. (for national and some provincial projects)	- BAPPEDA TK. I.
Municipal or District (Kotamadya or Kabupaten) (Tingkat II)	- "BPAMs" (interim water development bodies under DSE) or - "PDAMs" (permanent local water enterprises)	-Dinas Public Works (P.U.) or -Dinas Kebersihan (separate cleansing agency)	-Dinas Public Works (P.U.) (major works to be developed under "PLP" supervision)	- KIP Unit (local project body) or - Dinas Public Works (P.U.)	- Dinas Public Works (PU) (for local roads) (major highway const.under Provincial Project Office)	- BAPPEDA TK. II. Supported by: Bagian Pembangunan

Source: Central and local government agencies.

limitations, and to the danger of inefficient use of funds by local administrations, sectoral agencies should continue to fund and implement local programs until these matters can be resolved. Both views contain legitimate concerns, and one focus of this chapter is to explore the suitability of various services for local implementation, the rate at which selected services might be devolved, and what other measures including changes in administration, finance, staffing and training are required.

Organization of Individual Services

3.21. This section describes briefly the existing institutional framework for the major urban services. More details are available in Annex III, Table 1.1 - 1.6, which summarize, for each of these services, responsibilities for (a) long-term planning, (b) annual programming, (c) construction supervision, (d) actual construction, and (e) operation and maintenance.

3.22. Water Supply: Within Cipta Karya, the Directorate of Sanitary Engineering (DSE) is responsible for the overall planning, design and implementation of water supply, sewerage and sanitation projects funded through Cipta Karya's budget. To date, almost all major water supply expansion works have been financed through Cipta Karya 1/. DSE administers the largest of Cipta Karya's development programs, rising from one or two water supply projects a year in 1969-74 to over ten per year in the period 1979-82. DSE maintains project offices (PABs) in 20 provinces, where most of the implementation and supervision is carried out. However, the selection and design of projects, and consultant contracting, procurement of major materials and contract approvals are handled in Jakarta.

3.23. The operation of water supplies have been organized in three ways: in the kotamadya and some large towns as regional water enterprises (PDAMs); in smaller cities and towns as water supply departments (Dinas Air Minum); and where no PDAM has existed, interim water authorities operated directly by Cipta Karya (BPAMs) have been established. It is intended that all of the BPAMs should be converted to PDAMs although there have been delays in this process. In addition PDAMs are being established for each kabupaten to manage operations in all of the smaller cities and towns, previously the responsibility of the Dinas. As a PDAM, the enterprise is directed by a Board, it employes management and full-time staff, and its accounts are independent of other agencies. It thus provides the basis for efficient management for a revenue-earning enterprise. The broad policies for its operation and its financial supervision are the responsibility of D.J. PUOD. Since the PDAMs or the city public works Dinas do not fall under PU's authority, they have generally not been involved in new development works as much as might have been the case. However, for those PDAMs receiving new projects and for the BPAMs which Cipta Karya establishes, DSE assists the local management to set up operations and accounting systems.

1/ The Semarang Water Supply project, supported by the ADB is an exception.

3.24. The successes in rapid implementation of new water supply systems during REPELITA III has left many water supply authorities unprepared to manage the systems. Guidance and supervision of PDAMs is lacking particularly in the areas of maintenance, expansion of distribution networks and connections, and in financial management and recovery of costs. The PDAMS are often overstaffed 1/ leading to high administrative costs, yet key skilled and trained staff in maintenance engineering and accounting are still needed. The new schemes built by Cipta Karya usually include water production, filtration and primary distribution lines, but not the secondary distribution lines. Due to a lack of access to long term finance and an unsatisfactory tariff structure 2/, PDAMs have little incentive to provide distribution mains and standpipes in lower-income areas (para. 5.05). Community-level arrangements to collect charges and maintain standpipes are often inadequate.

3.25. Efforts to improve the PDAM's management and operational performance can only be successful if they receive closer guidance and supervision. This is the responsibility of Dalam Negeri, as for other municipal enterprises such as markets and slaughterhouses, but the Directorat Bangunan Kota in PUOD has been too remote from the regular operations of the PDAMs, and too understaffed to exert much influence. However, improvements are being made and a number of recent inter-ministerial decrees have clarified the relationships among Departments and with local governments on the control, management, finance and staffing of PDAMS. 3/ In addition there is an agreement between Dalam Negeri and Cipta Karya that the Development Sub-Directorate of DSE should provide initial advice to the PDAMs on management procedures and techniques. With the increasing numbers and importance of PDAMs, it will be essential for Dalam Negeri and Cipta Karya to strengthen and decentralize their oversight of PDAMs and other municipal enterprises through an office located at the province level. It has been proposed that the existing Bureau for the Promotion of Economic Infrastructure 4/ could be strengthened to undertake this task. It will also be important to link this office with the KANWIL of Public Works and the BAPPEDA, possibly through a water supply urban infrastructure committee,

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1/ A staffing ratio of 3 to 5 per 1000 connections is common practice in other developing countries. In Indonesia this is sometimes as high as 25 per 1000. A maximum of 10 per 1000 would appear reasonable.

2/ Actual charges for house connections are often higher, whereas consumption charges may be too low. Consideration should be given to allow connection charges to be paid over a period of time (para. 5.02).

3/ In particular Decree No. 3, 1984 deals with the PAB offices of Cipta Karya. It requires that proposals for new water supply systems must now come from local governments; it requires that training of PDAM staff is carried out early during the construction period; and it stipulates the period in which the PDAM must become financial self-sufficient (a maximum of three years operating subsidies plus three years "consolidation"). Decree No. 4, 1984 provides criteria for the management of PDAMs and the responsibilities of PUOD. Decree No. 5, 1984 covers the organization of PDAMs and BPAMs and gives general criteria for setting tariffs and staffing levels.

4/ The Biro Bina Pengembangan Sarana Perekonomian Daerah which reports to the Governor's Office.

in order to adequately assist and review both the operations and capital works aspects of the PDAMs. The Department of Finance would also need to be included in this committee when the PDAMs apply for loan finance.

3.26. With some exceptions, PDAMs appear to be more capable and better run in larger cities than in medium and small settlements. PDAMs covering medium and smaller-size settlements need to be a minimum critical size to obtain economies of scale in operations, permitting an affordable level of tariffs, and a measure of cross-subsidy to the smaller and poorer settlements. In light of the need to expand services to smaller settlements and shortages of central government staff and resources for the large program ahead it may be desirable to allow the PDAMs in the larger cities to apply for loan finance to undertake their expansion schemes themselves. The central government could then concentrate on establishing effective PDAMs at the kabupaten level (or even at the province level in remote and sparsely populated areas), and to assist them with initial system construction through the KANWILs and Dinas P.U. After their first systems were installed, subsequent expansion might be undertaken by the PDAMs through access to loan finance.

3.27. In preparing for the expanded program in the coming years the following measures could be considered:

(a) Strengthen the capacity of Dt. Binakota in the Department of Home Affairs, to provide guidance to the PDAMs on tariffs, management and training.

(b) Improve guidance on the expansion of water supply systems through establishing a water supply committee at the provincial level under the Governor. The Committee would include representation from PUOD, Cipta Karya (KANWIL), Department of Finance, Dinas P.U., and the mayors and Bupatis on a case-by-case basis. It would review the technical and financial proposals and the relationships with key related sectors such as KIP, and would appraise and approve proposals for funding system expansion.

(c) Expand and consolidate the sources of loan finance to PDAMs to a uniform, unsubsidized rate (para. 4.44). Larger and richer cities (say above 500,000 population) would be required to use this source for new works and system expansion. Smaller centers could use DIP grant finance to initiate new schemes, but subsequent expansion would be required to be financed through loans. This would suppress the practice of water supply authorities neglecting maintenance and returning to central government for more grant assistance. It would also encourage efficient management, improve cost recovery and provide better indications of needs and priority. Both grant and loan levels would be conditional on the PDAMs providing an adequate level of service to standpipe users. 1/

1/ As in the case of Semarang.

(d) Establish PDAMs of sufficient size to allow economies of scale for administrative costs and allow cross-subsidy between larger and smaller systems.

(e) Require management plans to be prepared before funding is advanced, and encourage appropriate arrangements to be made at the community level (through the LKMD, or water-user associations) to operate standpipes.

(f) Establish water resource and management committees or Boards organized around key water catchment areas, to address the increasing problem of multiple use of scarce water, with a focus on the large cities on Java.

3.28. Sanitation and Drainage. The existing divisions of responsibility for the development of solid waste, human waste, and drainage facilities are portrayed in Annex III, Tables 1.3 - 1.5. All of these services are covered at the micro-scale under KIP, yet each has city-wide dimensions which the locality-based KIP cannot adequately address. There is some overlapping of responsibilities between DSE which has primary technical responsibilty for these services and the Directorate of Housing which is responsible for providing local drains, MCKs and garbage bins and carts through KIP. In the case of solid waste, which involves chiefly local operations and management rather than a major construction program, DSE shares responsibility with the Department of Home Affairs (PUOD) which provides administrative support. In the case of drainage, coordination is also required with the D.J. of Water Resources which is responsible for construction of "macro" canals which extend beyond the city boundaries.

3.29. Until now, with a relatively small program, sanitation and drainage projects have been undertaken on a case-by-case basis, with design and supervision undertaken by consultants hired and supervised by DSE or the Directorate of Housing. However, with a rapidly expanding program planned for the coming years it has been decided to establish a program for environmental sanitation (Penyehatan Lingkungan Pemukiman, or PLP) along vertical lines quite similar to those already established under the water supply (PAB) program. Like the PAB, the PLP offices would be established at the provincial level and amalgamated into the new KANWIL P.U. A new Directorate of Sanitation has recently been established in Cipta Karya to handle this program and other sanitation issues.

3.30. The KANWIL can play a particularly important role in medium and smaller cities, where it is especially desirable that KIP and other sectoral programs be brought together into a more integrated local infrastructure program (para. 2.44). However in order to reap maximum benefits from the advisory and coordination role of the KANWIL, it is desirable that the KANWIL itself should not be fragmented into over-specialized programs and sub-sections. The sub-sectors of drainage, human waste disposal, solid waste management, infrastructure maintenance and kampung improvement (which also contains all these elements) are closely interrelated, and it is important that technical guidance for these functions are also consolidated at the central level in order to provide coherent assistance to the local governments which should receive funds directly to implement these programs. In this regard central Cipta Karya may consider it necessary to review the

organization of its Directorates in order to reflect those operations and services at the local level which need close synchronization. Macro-drainage, defined at that drainage which is primarily related to flood control and irrigation systems beyond the urban areas and which has provincial or regional significance, is properly the responsibility of D.J. Pengairan although coordination is required with Cipta Karya and the local governments where this drainage passes though the city.

3.31. In summary, for proper coordination and synchronization of technical advice, it is recommended that the following measures be considered:

(a) In Cipta Karya, shift the responsibility for sanitation from DSE, and kampung improvement from the Directorate of Housing, to form a new Directorate for Environmental Sanitation which would combine the activities of local drainage, human waste disposal, kampung improvement, solid waste management and infrastructure maintenance.

(b) Establish a liaison group for urban drainage within D.J. Pengairan.

(c) Consolidate the finance system from central government to provide an "urban development grant" to local governments which could be allocated for local roads and footpaths, local drainage, human waste disposal, solid waste management and maintenance. In addition, establish a "local infrastructure loan fund" on which local governments could draw to expand the scope of their capital works program (see further discussion in paras. 4.44-4.45).

(d) Improve and integrate planning for these environmental services at the local level (see para. 3.82).

3.32. The Kampung Improvement Program. Based on earlier Dutch models, KIP was initiated in Jakarta in 1969. The components of KIP are those used in other sectoral programs, but in Jakarta it was found that the sectoral agencies and even the Dinas at the city level were not providing service to the dense, lower-income areas where access and land acquisition were difficult, yet environmental conditions were worst. It was recognized that a more community-oriented approach was needed and that, due to difficulties of working in crowded areas, a more integrated approach to the planning and installation of services was necessary. This was particularly true in large cities where the main infrastructure networks were relatively well developed and the kampungs stood out as clearly defined unserved areas. Since the various Dinas in DKI Jakarta were relatively strong, staff were seconded to form a KIP unit to plan and implement the various works with a special budget.

3.33. In light of the success and popularity of the Jakarta program, the Government decided to expand KIP to a major national program. In Cipta Karya, the Directorate of Housing (Dt. Perumahan) was made responsible for the program in coordination with the Directorate of Urban Development (Dt. Bangunan Kota) of the Department of Home Affairs. The provincial office of Dt. Perumahan (P2LPK) is responsible for (i) preparing annual lists of towns and kampungs for KIP Perintis implementation the following year; (ii) supervising planning and detailed engineering of sites, usually carried out by

consultants; (iii) preparing tender documents and hiring contractors (ultimately approved in Jakarta); (iv) supervising construction; and (v) control of finances, including claims, payments and accounting. A KIP unit is established in each city to assit P2LPK, but does not have final authority. In some cases, because the Rp. 3.1 million/ha is insufficient, external agencies loan funds to the city which the local KIP units uses to improve the level of services, or add more kampungs. These funds and their construction contracts are directly managed by the KIP unit, and controlled and accounted separately through the city budget. The financial control arrangements may be much more complex than this as noted in Chapter 4. In the larger cities, where several fund sources are used and funds through local budgets predominate, Cipta Karya has delegated more management activities to the city KIP unit.

3.34. Other administrative arrangements have also been tried. In Surabaya and Bandung, with funds from UNEP, the local universities were contracted to attempt a more locally directed approach to upgrading, emphasizing local technology, support to social services and small business and community-directed planning and management (para. 2.37). While this achieved some success, it required very substantial time inputs from outside to organize community participation; project organization was unclear and perhaps too many dimensions were attempted. In Surabaya, under the "W.R. Supratman" program, the city provides matching grants to residents' contributions of cash, materials or labor. The works, which are largely roads, footpaths and drainage, are then carried out by the residents themselves or by hiring and supervising contractors. The city maintenance divison assists with surveys, costing and supervision of implementation. The quality of work is generally higher than in many KIP schemes contracted by government and maintenance is good. One drawback is that the residents who can afford to pay obtain more grants, and thus the higher-income kampungs obtain more benefit. However, this could be resolved by using a sliding scale of grants. In some towns KIP is financed from INPRES grants; communities propose pieces of infrastructure for construction or improvement, and grant funds are allocated by the local government to the community for building materials. The community then builds the approved project with its own labor. Construction is of variable quality, but often good when suitable and adequate materials are provided. This approach seems to work particularly well in smaller towns where densities are lower, local environmental conditions are less severe and there is a stronger tradition of self-help.

3.35. As indicated in Chapter 2, the KIP must increasingly respond to the varying needs of city size, conditions and capabilities rather than be applied as a standard package. It should be seen as part of a broader local infrastructure works program and fit within the timing and priorities of other city infrastructure. As part of the local infrastructure program, it is desirable that KIP be planned and implemented by city-level staff with guidance, program evaluation, technical assistance (where needed) and monitoring by the KANWIL. In large cities (say over 250,000) the continuation, or establishment of a separate KIP unit may still be appropriate, but in medium and smaller cities it would appear desirable to incorporate KIP within the local Dati II Dinas P.U. At the neighborhood level, greater participation by the LKMDs is needed to define local priorities, negotiate the location of facilities, organize households to locate and operate MCK Keluarga units and water supply taps, and to conduct

cleaning and simple maintenance of drains and footpaths. In order to encourage further local commitment, a sliding scale of local contributions, based on income or house size/condition, might be introduced.

3.36. For the reasons discussed under the drainage and sanitation section, it is recommended that consideration be given to incorporating KIP under a consolidated Environmental Sanitation Directorate in Cipta Karya, and consolidate the funding for KIP into the local urban development grant and loan facilities. Cipta Karya has now instituted measures to place responsibility for managing the various KIP funds and the design and supervision of works with the city KIP project manager. An additional element for KIP which could prove increasingly important would be the home improvement loan fund. The central responsibility for the technical oversight of this fund should rest with the Directorate of Housing although the disbursement and collection of funds would be at the city level.

3.37. Urban Roads. The technical responsibility for urban roads, as for all highways in Indonesia, lies with the Directorate General of Roads and Highways (Bina Marga). Until recently, Bina Marga has been solely concerned with the national primary road system, but with the interurban network now much improved, Bina Marga is turning its attention to the intraurban links; it is presently undertaking a study to establish priorities for urban roads projects and is reclassifying roads. Urban roads form a small part of Bina Marga's budget and program, but their importance is now likely to grow. In some metropolitan areas Bina Marga is now undertaking a number of large road schemes. Bina Marga is a centralized operation; the Directorate of Highway Planning (Bina Program Jalan) undertakes the planning, programming and budgeting functions for all primary roads and bridges from its Jakarta office. Implementation of specific projects then shifts to the Directorate of Highway Development (Pembangunan Jalan) which has project offices at provincial levels which oversee implementation (similar to DSE's PABs); these are to become part of the new KANWIL P.U. Less than a quarter of Bina Marga's total staff are located in the provincial offices.

3.38. The involvement of local governments is substantial, with 70% of all funds for urban roads deriving from the provincial or kabupaten/kotamadya budgets (Chapter 4, Table 4.5). Provincial and kabupaten/kotamadya governments through their Dinas P.U. have responsibility for maintaining all roads and for constructing "provincial" roads (12% of all urban roads) and "local" roads (76% of all urban roads) respectively.

3.39. Construction of new roads and major upgrading of existing roads usually exert the principal influence on the direction and nature of urban growth, have significant impacts on existing development and are closely linked with demands for other services. Because of these factors it will be important for Bina Marga to have a much closer relationship with the local governments as it develops its intraurban road program than has been needed for the intercity and rural roads programs. In some local governments visited by the mission, the BAPPEDAs were making real efforts to define priorities and assign potential fund sources to different road projects, but the complex matrix of jurisdiction and functional classification of roads hinders these efforts. The problem may become more severe if Bina Marga intervenes more deeply in urban road planning and implementation without close linkages with the local government.

3.40. In large cities, construction of new roads as the only solution to urban transport problems and congestion is often very costly and tends to favor upper-income groups and officials having access to motor cars. A close working relationship is therefore needed with the Ministry of Communications as well as with the local government in order to agree on overall transport strategy, avoid duplication of services and focus on least-cost solutions. In the major metropolitan areas, where the costs of intraurban transport amount to a significant proportion of all spending on urban services 1/, it is important that a careful review is undertaken by the BAPPEDAs and BAPPENAS on the priorities and balance of investments in transport compared to other urban services, and assurance that least-cost solutions are proposed.

3.41. In addressing these issues, the following actions are recommended for consideration:

(a) secondment of Bina Marga staff from its KANWIL to the local governments of high priority cities, to establish joint offices with local city planners, and engineeers and the BAPPEDA to prepare a plan and program for urban roads and related traffic management measures, and agree those road improvements to be financed from the local budget as well as from central funds. The plan should take into account the effects on urban growth, land use and impacts on existing residents.

(b) establishment of transport boards in the major metropolitan areas (including the BAPPEDA tinkgat II, Bina Marga, and D.J. Land Transport); these boards would develop a joint policy on urban transport for roads, traffic management and public transport including the level and type of fees, charges and fares, as well as the physical and economic impacts noted above. The consolidated transport proposals, investment and financing plans would be reviewed by BAPPENAS.

(c) provision, through the consolidated urban development grant and the loan fund to local governments, finance for construction and maintenance of local roads. The grants and loans required would be evaluated and monitored through the Urban Services Committee established at the provincial level which would include the Public Works KANWIL (para. 3.79)

B. MANPOWER AND TRAINING

3.42. Questions of manpower are central to the success of the expanded urban services program in the coming years; the lack of sufficiently qualified staff is already a constraint to effective implementation. This section describes the existing manpower situation in the urban sector, and briefly reviews the current manpower development programs and outlines future needs.

1/ The transport requirements for DKI as projected by the JMDP Jabotabek planning study are 61% of all investments in urban infrastructure.

In some sectors (e.g., water supply) training and manpower targets are already established, while in other areas (e.g., sanitation) efforts are still at a very early stage.

3.43. Three broad developments are shaping the manpower needs for the coming years. First, and most obviously, the expanded investment program itself will require a large number of additional staff at both the local and central levels. Second, as the programs expand to the smaller cities, the average size and complexity of projects will tend to fall. Coupled with the need for added attention to operation and maintenance of the investments already in place and planned, this implies an increasing role in the local agencies for lower-level engineering skills 1/ augmented by substantial in-service training programs and supported by access to guidance and supervision from provincial and central offices when needed. This would free up scarce engineering skills at the central level for addressing more complex projects and for upgrading the capacity of local agencies, particularly in those regions (e.g., off-Java) where skill levels are lowest. Third, as cities continue to grow and the number of projects rises, it is essential that greater emphasis be given to raising the ability, experience, and authority of the planning and coordinating bodies (the BAPPEDA) at the city level.

3.44. The Overall Picture. It is not possible to measure the total workforce involved in providing urban services. For example data are not available at the central level on the staffing of local governments; most contruction work is undertaken by private contractors and records are not kept; and for many central government employees, such as those in Bina Marga, it is not possible to categorize their time between "urban" and "rural" services. However, for a number of the key agencies, a rough picture of the quantity and educational background of staff can be obtained. Table 3.2 presents a summary of staffing levels for the key central and local agencies 2/. The table deals only with technical and managerial staff; support staff, manual workers, consultants and contractors are excluded. Despite this imperfect data base, the picture that emerges from these figures is clear. 3/ First, while the average level of formal education of technical and managerial staff at the central government level appears adequate, the

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1/ Particularly bachelors degrees (B.E./B.Sc.) and senior technical high school (STM) qualifications.

2/ The figures for the local agencies are only estimates based upon surveys in six cities, so may be subject to error.

3/ These findings are consistent with those of other studies; see for example "Staff Development Within the Jabotabek Region"; Cipta Karya, Jabotabek Team, Report No. T/10, March 1980.

number of staff is insufficient even for the present investment program, let alone for the expanded REPELITA IV program. With this small number of staff, the chief role of the central government agencies must increasingly be to advise and guide local implementers rather than to be directly involved in designing and approving and administering contracts. Second, technical staffing at the kotamadya/kabupaten level is probably adequate in terms of numbers, but seriously deficient in terms of formal education. There may be significant double counting of staff in the local departments, since, for example, some of the senior staff of the KIP unit also work in the Dinas P.U. or the BAPPEDA 1/, but it appears that a total technical and managerial workforce of 10,000 - 13,000 is a reasonable estimate of the number involved in implementing the program at the tingkat II level. It is these staff who must be the primary target for training and upgrading programs and who must take primary responsibility for the success of the REPELITA IV program. Third, the local planning and coordinating units, the BAPPEDAs, are now stocked with relatively well educated staff. This is encouraging for the key role they must play in coordinating the overall city plans.

3.45. Recognising the severe shortage of skills in the implementation of its investments, the Ministry of Public Works initiated a program of in-service training in the mid-1970s program. Each of the three Directorates General in the Department of Public Works has a training unit (Bidang DIKLAT), and these are overseen by a central training department (PUSDIKLAT). Training consists mainly of short courses given at five regional training centres, and trainees include central and local public works employees, and consultants and contractors. Until now, training of local staff has lagged behind that for central and project staff. For example, the number of trainees attending short courses in 1981/82 was 1700 central staff (14% of total central staff), 3450 project staff (12% of total), and 5250 provincial and local staff (7% of total local staff). In view of the serious skilled manpower shortages projected for the years ahead, the Department has embarked upon a major expansion of its training program. Under a World Bank-assisted Manpower Development Project, 2/ the Department's training and manpower planning units will be strengthened, and curricula materials will be developed. The annual number of staff attending short courses will rise from 10,400 in 1981/82 to over 20,000 in 1986; equivalent to 14% of all central, local and project staff. Other government departments are also involved in managerial and technical in-service training. The following paragraphs review briefly some

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1/ This also accounts for the high (and probably overstated) educational attainment of the KIP units.

2/ See: Public Works Manpower Development Project - Staff Appraisal Report; World Bank, March 1983.

Table 3.2: FORMAL EDUCATION OF MANAGERIAL AND TECHNICAL STAFF IN SELECTED CENTRAL AND LOCAL GOVERNMENT AGENCIES - END 1982
(percent of staff attaining various levels of education)

	CENTRAL GOVERNMENT AGENCIES (PUBLIC WORKS)				LOCAL (TINGKAT II) AGENCIES /a			
	CIPTA KARYA			BINA MARGA				
	Directorate of Sanitary Engineering		Directorate of Housing	Directorates of Planning and Development	Dinas P.U.	PDAMs	KIP Unit	BAPPEDA
	Jakarta-based	Province Level (PAB)						
Masters Degree	30	28	24	17	3	8	20	25
Technical (Ir)	(22)	(23)	(14)	(13)	(1)	(3)	(9)	(4)
Non-technical (Drs)	(8)	(5)	(10)	(4)	(2)	(5)	(11)	(22)
Bachelors Degree	25	24	11	19	8	12	21	52
Technical (B.E/B.Sc.)	(16)	(14)	(4)	(16)	(6)	(3)	(3)	(3)
Non-technical	(9)	(10)	(7)	(3)	(2)	(9)	(18)	(49)
Higher Secondary School	28	43	49	48	60	74	51	19
Technical (STM)	(15)	(35)	(28)	(26)	(47)	(130)	(39)	(7)
Non-technical	(13)	(8)	(21)	(22)	(13)	(44)	(12)	(12)
Lower Secondary School	8	2	6		16	3	5	1
				13				
Primary School	9	3	9		13	3	2	1
	100	100	100		100	100	100	100
Total Staff	194	314	251	250 /b	6000 /c	5500	3400 /d	1000 /c

/a Estimates based on sample towns.
/b Estimated that 20% of Bina Marga staff allocated to urban roads.
/c Rough estimates based on grossing up figures for sample towns.
/d Figure obtained by combining data from mission sample survey with that from "Survey on Manpower and Training in the KIP in Indonesia", Cipta Karya, Directorate of Housing, 1982.

Source: For central government staffing levels: Cipta Karya and Bina Marga.
For local government: Mission survey of various agencies in six cities.

of the issues in manpower development in the water supply, sanitation and KIP programs and in the field of inter-sectoral planning and coordination. 1/

3.46. Water Supply. The number of DSE staff has almost doubled over the last few years in parallel with the growth in its programs. About 85% of the 500 technical and managerial staff work on the water supply sector. Most of this number are resident in the provincial PAB offices (Table 3.2), but even so, qualified staff at the province level are very thinly spread. In West Java, for example, as of end-1982, 5 technical staff, 5 non-technical and 5 support staff must supervise and coordinate the water supply development of 26 towns. 2/ For large projects covering many towns in a single province--such as the World Bank-financed East Java water supply project--DSE has attempted to resolve this manpower shortage by extensive use of consultants, by standard designs for small towns (IKK projects) and by involving the tingkat I and II Dinas P.U. staff in supervision of implementation.

3.47. At the end of 1982 the total staff of the 86 PDAMs 3/ was about 14,000, of which about 5,500 could be classified as technical and managerial. The level and technical expertise of staff varies significantly among water enterprises; PDAMs in cities with foreign assisted water projects appear to have the best staffing. 4/ A recent study of manpower requirements projected that by 1990, the total PDAM manpower must rise to 38,000 (Table 3.3). While the formal technical qualifications of the PDAM staff need not on average be as high as in the DSE since the PDAMs' primary responsibilities are for operation and maintenance and for extending the distribution system, it will nonetheless require a major recruitment and training effort to secure adequate staff for the PDAMs for the rest of the decade.

1/ There is not a section on urban roads because it is not possible to distinguish between manpower development for urban and rural roads, and it was not possible to review the entire Bina Marga training program.

2/ In 21 of these towns BPAMs are still operating, needing considerable support from the PABs; in the other 5, PDAMs have been established, but the PAB continues to provide managerial and technical assistance.

3/ By early 1984, there were 113 PDAMs.

4/ For example in Cirebon the ratio of PDAM staff to total city population is 1:1037, compared with 1:3200 in Padang.

Table 3.3: MANPOWER REQUIREMENTS FOR PDAMS BY SIZE OF PDAM: 1983 - 1990

	Size of Water Enterprise (Number of Connections)					
	IKK	Below 2,000	2,000-7,500	7,500-20,000	Above 20,000	Total Employees
Total Employees						
1982 (thousands)	-	3	2	3	6	14
1990 (thousands)	12	2	6	2	16	38
Employees per 1000 Connections 1990	3.5 per IKK	15	12	10	10	15

Note: Based on assumption of total house connections rising from 850,000 in 1982 to 2.4 million in 1990.

Source: Urban and Semi-Urban Water Supply - Forecast of Manpower and Training Needs 1983 - 1990; Report of the Water Supply Manpower Development Program, DSE/IRC, February 1983.

3.48. The Government has already established an impressive training and upgrading program. DSE has taken the lead in upgrading technical skills having organized a total of 14 different types of courses for BPAM and PDAM staff, government executives, consultants, contractors, manufacturers and suppliers, over the last five years. These have mainly been courses of five days to two weeks, and have tended to rely on a traditional lecture format. In addition, the Department of Home Affairs (PUOD) has recently introduced one month courses for PDAM managers and a number of foreign-assisted projects have established their own training courses 1/. Despite these important efforts, however, the total number of beneficiaries remains small; between 1973 and 1982 a total of only about 2000 people attended these various courses, and only about a quarter of the technical and managerial staff of the PDAMs benefitted from this kind of practical training.

1/ For example the West Java, Aceh and North Sumatra projects supported by the Dutch Government have introduced courses on PDAM performance development, water distribution and pumps and generator operations.

3.49. In view of the manpower needs in the years ahead and acknowledging that there is still a substantial backlog of training required for existing PDAM staff, the Government is embarking upon a major expansion in their training efforts. It is estimated that 7000 staff must be trained in the period 1983-85 and an additional 5000 between 1985 and 1990 1/. These are regarded as minimum requirements. In order to achieve the target of 7000 by 1975, DSE has embarked upon a "crash program" of training directed at five groups of PDAM trainees: managers/directors, section heads, supervisors, key operators, and trainers and consultants. The crash program will consist of 366 courses with an average length of 14 days; courses include both classroom and on-the-job training. For REPELITA IV a "Manpower Development Overall Program" will be established with training targetted at six broad groups: government agencies, BPAM/PDAMs, consultants and contractors, suppliers and manufacturers, educational institutions and professional organizations, and non-government organizations. A cost of about Rp. 6 billion (constant 1982 prices) has been estimated for the training program for the 1983-1990 period.

3.50. Sanitation and Drainage. Within DSE, which has primary central government technical responsibility for these services, less then 15% of staff, or only 70 managerial and technical staff work primarily on sanitation and drainage. As the investment program builds up in this sector it will be necessary for Cipta Karya both to recruit new staff and to switch staff away from water supply. In the provinces where PLPs have already been established, most staff have been switched from the PABs; this is a precedent that is likely to continue, particularly as the investment program in water production begins to "level off" towards the end of REPELITA IV.

3.51. At the local level the total manpower allocated to sanitation through the Dinas P.U. and the Dinas Kebersihan (where it exists) is at first sight quite impressive. However, this is almost entirely due to large numbers of unskilled workers engaged in the solid waste program. Very little technical manpower is allocated to these programs; and the drainage and human waste programs, where they exist, are particularly badly served. 2/

1/ For more details, see, for example, "Preliminary Report of the Working Group for Manpower Development Overall Program for Urban Water Supply in Indonesia", DSE, 1982, and Forecast of Manpower and Training Needs, DSE 1983, op.cit.

2/ It is not possible to obtain data on the actual manpower allocation to these services, since the Dinas P.U. is responsible for all of them. The mission obtained estimates of the allocation of P.U. manpower for roads, parks, solid waste, drainage, etc., from the six sample cities. These are presented in Annex III, Table 2.4.

3.52. In marked contrast with the water supply program, there has been virtually no manpower planning or in-service training, except for that undertaken under the KIP program (para. 3.54). There have been one or two pilot training schemes, usually associated with specific projects, and Cipta Karya has supported a post-bachelor degree course in sanitary engineering at the Institute of Technology at Bandung, but nothing has yet been introduced on a sufficient scale to begin to meet the needs of the expanded program. The principal reason for this has been that until now there has really not been an overall policy or investment program for sanitation and drainage, and no satisfactory administrative framework for implementation. With the strong emphasis on these sectors in REPELITA IV, it is urgent that a major training program be introduced. A broad manpower development program has now been drawn up calling for the training of 100 promoters at the central level, 700 personnel at the province and tingkat II levels, and about 1500 technical staff from consulting and contracting companies. The program is still rather rudimentary in concept, and high priority must be given to translating these general goals into specific programs. 1/ The organization of the program may require some review if these sectors would become part of an Environmental Sanitation Directorate.

3.53. Kampung Improvement. About one third of the 251 technical and managerial staff of the Directorate of Housing are working primarily on the KIP program; this includes both Jakarta-based staff and those assigned to the province (P2LPK) offices, although the P2LPK offices are supplemented with additional staff from the provincial Dinas P.U. The establishment and staffing of KIP units at the city level over the past eight years has been impressive; staffing levels vary according to the size of the program--from 285 in Jakarta and 120 in Surabaya to less than 10 in some of the smaller towns. Most KIP units have between 10 and 30 staff, most of whom are part-time, having been seconded from other local agencies. Partly because of this ability of the KIP units to borrow staff from other sections, the formal education of the technical staff of the KIP units is quite high. The educational levels portrayed in Table 3.2 are consistent with a recent survey of 215 units, which showed that 50% of the technical staff had either bachelors or masters degrees. 2/ This is actually a higher proportion than in the central governmment offices of the Directorate of Housing, although the proportion of technical staff to total staff is higher in the central agency. The capacity to implement the program at the city level varies greatly. In the larger cities where the program has been under way for some years, the KIP units are generally well-equipped to assume greater responsibilities, while in

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1/ For an outline of the overall approach, see "Defining Basic Sanitation Needs for Urban Policy and Strategy" draft report presented by DSE to sanitation workshop in Yogyakarta, December 1982.

2/ Survey of Manpower and Training in the KIP in Indonesia: Cipta Karya, Directorate of Building Research, March 1982.

smaller towns the units are often very weak, and there is a need for continued strong support from the provincial P2LPK offices. Indeed, it is questionable whether it is beneficial to establish KIP units in some of the smaller towns; given the need to integrate KIP with other services it may be preferable to give responsibility to the kabupaten Dinas P.U., with staff from other Dinas being allocated specific liaison tasks.

3.54. A small in-service training program for KIP staff began in 1979. Since that time about 1000 persons have attended training courses ranging from one to four weeks; about 30% of the technical and managerial staff involved in implementation have therefore benefitted. The Directorate of Housing is responsible for technical training and has organized different courses for KIP managers, supervisors, motivators and consultants; and the Directorate of Building Research has organized annual workshops on improving low income residential areas. The Department of Home Affairs has conducted courses for local administrators (camats and lurahs) in the major cities and (with the support of UNICEF) a five-week course on urban social planning within the KIP framework. Finally, the Department of the Environment in collaboration with Cipta Karya, has recently established a training program for KIP motivators. This last program is potentially very important; motivators, who are not government officials, are trained to encourage maintenance of the KIP infrastructure and to stimulate small-scale economic ventures. So far this aspect of the KIP program has been seriously deficient (paras. 2.43 and 3.35).

3.55. Although impressive for its diversity, this training program remains rather modest in its overall coverage and effect. A recent survey of KIP units by the Directorate of Housing found universal enthusiasm for more training; existing courses were regarded as very helpful from a technical standpoint by those who attended but criticized for not involving enough field-work and for not providing enough guidance on dealing with the kampung community, and on promoting participation and self help.

3.56. While overall manpower planning and training for KIP is more advanced than for sanitation, a detailed strategy must still be defined. Implementation of the expanded program will probably require that design, survey and supervisory staff must be increased by about 50% from their present levels. Since most of the new staff will have only senior high school qualifications, a major expansion of practical in-service training will be required. In addition it is important that on-the-job training for construction company staff be widely introduced on a more systematic basis. 1/

3.57. Intersectoral Planning and Coordination. Provincial BAPPEDAs were established in 1974 and kotamadya/kabupaten BAPPEDAs in 1980 2/. Since their

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1/ A government regulation (KEPRES 14A) requires that small indigenous companies be awarded small contracts. Since most KIP contracts are fairly small, the average level of technical competence of contractors is much lower than under other public works programs.

2/ Presidential Decree 27, 1980.

introduction, the Department of Home Affairs has moved quickly to provide the BAPPEDAs with comparatively well educated core staff. In this regard, they are generally better equipped than other local government agencies. Although the process has still long way to go, the BAPPEDAs, especially at the provincial level, are moving away from a passive role of merely endorsing Dinas and KANWIL plans to a more positive formulation and coordination role. This transition is also beginning to occur in some of the larger kotamadya; it is urgent that the process continues and spreads to the medium and smaller towns.

3.58. While there are several institutions involved in management training for local government workers in Indonesia 1/, the primary responsibility for BAPPEDA in-service training rests with the Department of Home Affairs Unit for Education and Training (Badan DIKLAT). While training programs have existed since the early days of the BAPPEDAs, it was only in the early 1980s that a comprehensive survey of manpower needs was undertaken 2/. As a result a much expanded program of in-service training has been instituted with support from USAID. Beginning in 1982, the program has three key features. First, trainers are trained in 16-week courses in Jakarta and in 9-month in-service courses at state universities. Second, two types of course for BAPPEDA staff are offered at regional training centres (SELAPUTDAs). Third, a continuing program of short courses are being designed for BAPPEDA and other local government staff involved in inter-sectoral coordination. The courses are strongly oriented towards problem solving, and the implementation of development plans, and are already making a major contribution. Courses have tended to be oriented towards regional and rural development, and there is a strong case for introducing courses dealing specifically with urban problems.

3.59. The Efficient Use of Staff. In view of the acute scarcity of well-qualified staff it is obviously essential that the most efficient use be made of available skills. In particular, it is important that higher-skilled staff be protected from routine duties that could be delegated to lower levels. In this regard there is scope for considerable improvement in almost all of the urban services. For example, much skilled manpower at DSE is spent in contract administration that could probably be undertaken effectively at the province level. This leaves little time for DSE to develop policy, train staff, and establish effective guidance and monitoring. Improvements in efficiency could also be made at lower levels. For example, the provincial P2LPK offices are involved in routine administration of the KIP Perintis schemes (such as reviewing and approving requests for reimbursements for contractors) which could in most cases be fairly easily undertaken by tingkat II staff, freeing up the provincial staff for supervision and quality control.

1/ For a review of management education for local governments see: K. Davey, G. Glentworth and P. Mawhood: Education and Training for Government in the Provinces, background paper for Indonesia - Management Education Study, World Bank et al, 1984, forthcoming.

2/ See "A National Strategy for Training in Regional Development Planning and Management," Department of Home Affairs, Badan DIKLAT, 1979.

3.60. This dependence on higher-level staff for routine administration appears to be for two reasons. First, there is a legitimate concern that the capacity of local agencies is highly variable and that in some situations delegation would result in an unacceptable quality of work. This can only be overcome by selective delegation according to the capacity of the lower-level unit. For example, whereas the technical requirements for planning and implementing water supply schemes and macro-drainage improvements need higher-level technical capability than that available in most medium and small size towns and cities, many of the activities in the local infrastructure category (KIP, micro-drainage, sanitation, roads) are much simpler and can be planned and managed by tingkat II authorities with some guidance and assistance from the provincial level. Indeed, several of the KIP programs undertaken at the local level (e.g., KIP Supratman and other city-financed KIP) are superior in construction quality to some of the more centrally-managed programs. Second, there are strong although un-intentional incentives to maintain the present centralized administrative structure. Key among these is the paying of honoraria to staff for managing projects; this results in higher levels of government preferring to give "project" rather than simply financial and advisory assistance to local governments, and thereby retaining planning and design control over essentially local schemes. Another effect of this incentive is the proliferation of small "projects" which greatly increase time involved in paperwork, in seeking funds from higher levels of government and in packaging projects. It is highly desirable that financial rewards for monitoring and supervision be made as attractive as those for project management.

C. MANAGING THE EXPANDING URBAN SERVICES PROGRAM

3.61. This section explores alternative approaches to the paradox presented earlier in the chapter: in order to take account of the diversity of needs in different types and locations of cities and to improve the relevance of investments, coordination and management of the overall program must be delegated to the local level; but in order to spread the program as widely as possible, a standardized "top-down" approach for each subsector appears most efficient. The discussion here is divided into four parts. First, the argument for city-level management and coordination of the overall program is made. Second, the scope for further devolution of authority is reviewed for the different aspects of the program. Third, some principles to guide administrative changes are suggested. Finally, some practical suggestions are made for administering the expanded program in the years ahead.

The Argument for City Level Management

3.62. The case for increased city-wide management of the overall program is generally agreed by all concerned. In essence, there are three related arguments. First, urban problems, and priorities for infrastructure and services, vary enormously from one place to another, depending on the size and density of population and topographical characteristics (which may affect unit costs and prices of materials). Until now the fragmentation of responsibilities and the rigidities in central finance, which presently funds the majority of urban services (Chapter 4), means that kotamadya and kabupaten authorities have had little or no influence over the balance of priorities. Finance may be available for kampung improvement when what is needed is

city-wide drainage, or funds available for staff for a Dinas Kebersihan but not for the equipment they need. There is a clear need for flexibility to modify standard solutions and fixed cost allocations, and to allow local discretion on the balance of priorities within the national objectives of addressing basic needs.

3.63. Second, as the number of sectoral programs in a city grows, it is important that standards and the phasing of investment be coordinated. It is obvious that water supply reticulation systems must be extended to serve the MCKs, that water pipes should be laid down before the KIP footpath is laid over them, and that road and footpath improvements be coordinated. But is is remarkable how many MCKs have no water connections more than a year after opening, how many footpaths are dug up months (and in some cases weeks) after construction in order to lay water pipes, and in general how little coordination there is among the various programs. The reason for this is the same fragmentation of authority and finance discussed earlier.

3.64. Third, increased responsibility and control is a prerequisite to a psychology of involvement at the local level. Local involvement has two dimensions: commitment of the local authorities, and participation of the community. Both of these appear to be sensitive to the degree of local management of the program. Many examples of this can be found. Local governments tend to spend a disproportionate amount of their funds and efforts on those sectors which they feel they have most control over (such as local road works) and very little in sectors that they regard as the responsibility of higher governments. Few local governments attach a high priority to providing public water standpipes, partly because they regard this as the responsibility of either the water supply program or the KIP program. The KIP Perintis ("stimulus") scheme, although successful in constructing some infrastructure in kampungs in a great number of settlements, has not been successful in one of its purposes--that of stimulating local authorities to contribute to the program. Indeed, in some cases local programs have been reduced or abandoned on the arrival of the central government program. In order for a real stimulus to occur, it appears that the offer of central grants should be linked to a requirement for local contributions and that responsibility for the program be assigned to the local authority. 1/ The same problems occur at the community level. Although the degree of community participation varies greatly, in most cases there is room for improvement. For example, within kampungs new drains tend to accumulate garbage quickly, and overall maintenance is often not good. It appears that the level of involvement relates directly to the extent to which residents are made to feel "involved" at an early stage (para. 2.44b). Ideally there should be a process

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/1 This was observed by the mission in visits to cities, and has been documented elsewhere, e.g., Review of KIP in Central Java", background report by J. Taylor for ADB preparation mission for the Central Java Small Towns Improvement Program, January 1983.

of continuous consultation involving the lurah, the village council (LKMD) and the local residents. 1/ Experience suggests that this form of involvement is likely to be greater where overall responsibility for the program lies with the local authorities. In view of these concerns Cipta Karya is considering a new approach whereby the central grant for urban improvement must be matched by local funds before funds are disbursed.

Scope for Further Devolution of Responsibilities

3.65. The government has made substantial progress in delegating responsibility to local governments. The rapid expansion of the INPRES programs, the creation and strengthening of the BAPPEDAs, and the loans made to local governments for kampung improvement and solid waste are important elements of this effort. Local governments (province and tingkat II) are currently responsible for spending about 35% of all funds spent on urban services (Chapter 4, Table 4.2), so they are already making an important contribution. While there is no question about whether this process of decentralization should continue--it is universally agreed that it must--there is considerable debate over the appropriate speed of the process.

3.66. The Capability of Municipal Administration. The technical and managerial strength of local governments, both at the province and at the kotamadya/kabupaten level, varies greatly. Some of the larger provinces (which are bigger than most countries in the world) have fairly sophisticated administrative apparatuses, and a relatively high level of technical competence, and the same is true of some of the major kotamadyas. Other provinces and many kabupaten administrations are not yet prepared to assume much greater responsibility than at present. This is a crucial area where more investigation into staffing characteristics is needed to provide a basis for manpower projections and training programs. Nevertheless, some idea of local capacities can be gained by noting the performance of local governments in areas where they have controlled development funds, by reviewing staffing characteristics of sample local governments, and by assessing the administrative environment and constraints which bear on them.

3.67. A recent study of the managerial capacity of local authorities in Indonesia, based on observations of provincial and tingkat II governments in 21 provinces over the last 4 years, reached the following 5 conclusions: 2/

1/ Under the KIP Perintis there is an initial meeting between the local KIP unit and the LKMD to describe the program. This is followed up by later meetings in which local consultants present preliminary plans, obtain community feedback and modify designs. In practice this process may be short-circuited, and local residents may be presented with plans with no scope for discussion.

2/ K. Davey, G. Glentworth and P. Mawhood: "Education and Training for Government in the Provinces" (p.19); background paper for Indonesia - Management Education Study; World Bank et al, 1984, forthcoming. The study drew upon analysis of seven sectors of expenditure, including urban services.

a) although there are still deficiencies, most notably in qualified engineers at the tingkat II level, the professional manpower situation in local government has improved enormously over the last decade;

b) the managerial capacity of local government is severely underestimated;

c) much of the professional/managerial capacity, particularly at the tingkat II level, is severely underutilized;

d) professional managers at the local level are very dependent upon the energy and contacts of those who can allocate or secure and package the money they need to operate;

e) much of what is classed as local mismanagement is really due to aspects of the system beyond the control of local managers.

3.68. When discussing local capabilities, it is important to distinguish two elements: the technical competence of the local departments to assume design and supervision previously undertaken at higher levels, and the capacity to coordinate and manage the overall program irrespective of whether components are implemented by lower or higher levels of government. On the technical side, delegation must clearly be very selective. Few municipalities have the capacity to design or construct water treatment works or even large drainage pipes and canals. However the general success of the INPRES tingkat II, INPRES sekolah dasar (primary schools), and INPRES desa programs suggests that, with support from provincial agencies, the second-level governments have a substantial capacity for design and supervision. In the early days of KIP, from 1971-77, the largest cities implemented the investments almost without any technical or financial assistance from the central agencies, and many cities now manage fairly successful programs outside the "Perintis" framework. Most local officials believe that local officials are better able to design schemes and supervise contractors than is the province-level project office or consultants brought in for a short time to prepare designs 1/. In most kotamadya and kabupaten the Dinas P.U./KIP unit is capable of designing and implementing the whole scheme itself, perhaps with the addition of a surveyor, and with a good set of planning and design manuals and training in supervision of its STM graduates. Similarly, most larger local authorities would be able to plan and implement city-related drainage, probably needing assistance from consultants in design and supervision, which could be provided through the KANWIL or the provincial Dinas P.U. For smaller cities, broader assistance in both planning and implementation would be required from the provincial agencies.

1/ In some cases, designs made by outside consultants have been almost useless due to inaccurate levels, house locations etc, and the KIP unit has had to redesign the scheme itself. Part of the problem is the low design fee of Rp. 100,000 per ha. which is less than adequate for consultants, but it is also due to a lack of familiarity with the area and with the residents.

3.69. Given the variability of local capacities, a flexible approach is necessary. But there has often been a reluctance to grant a level of autonomy to one province or kotamadya that cannot be granted to all. 1/ This reluctance appears to be breaking down, and this is an important development 2/. The "strong" and the "weak" provinces and kotamadya are known to all central managers, and provincial managers can easily rank kabupaten and kotamadya according to technical and managerial strength. To the extent that central authorities are able to selectively devolve responsibilities to the stronger provinces and in turn to the stronger tingkat II authorities, more time and manpower may be devolved to the weaker local agencies, although it must be acknowledged that in the early stage of any process of delegation, the effort may appear to be more trouble than it is worth.

3.70. In some cases, where local authorities are particularly weak, it may be possible to involve the private sector. Experimentation is underway to hire private companies for solid waste disposal and for emptying septic tanks, although there have been some difficulties in ensuring a good quality of service. One possibility worth consideration on a pilot basis, perhaps in the outer islands, is the granting of a water supply concession to a private company. The concessionaire would construct the water supply works with funds supplied by GOI to standards defined by Cipta Karya and would contract to operate the system for an agreed period at tariff levels and operating practices agreed with GOI, and possibly remit an agreed fee to the kabupaten/kotamadya. Such an approach, which is commonly used in West Africa and in France, would test and utilize the capacity of the private sector to deliver a public service. In fact, it is already employed successfully in Indonesia in the transport sector (ferries, etc.).

3.71. In terms of coordination of the various sectoral programs there is certainly greater scope for a local role than at present. Interviews with tingkat II BAPPEDAs usually indicate a lack of an overall view of the development effort, due to the many programs and budgets over which the local authority has no control, and sometimes even no knowledge. Most local authorities do not have information on all that is spent on various sectors within the locality. Improvements to the accounting system is needed to enable consolidated budgets and expenditures from all levels of government for specific services to be prepared so that analysis and planning of service delivery can be undertaken. The tingkat II budget documents cover only about one quarter of all spending on urban services, so it is not surprising that there is not as much complementarity among programs as there should be. In extreme, although not unique, situations, water supply standpipes have been built within ten meters of each other under different programs, one using the PDAM piped system and one using a pump. This is not the fault of incompetent local coordination on the part of the BAPPEDA or the Dinas P.U., but due rather to a combination of two related factors: lack of prior information of

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1/ The exception to this is Jakarta, which has always assumed much greater local management than have other cities.

2/ For example, under the World Bank's Fifth Urban Project, the government is introducing a management structure unique to the four cities concerned: Surabaya, Surakarta, Semarang and Ujung Pandang.

sectoral program plans, and a lack of time to spend on coordination due to the burden of excessive administrative paperwork associated with the various programs and budgets. The government is aware of these difficulties and is gradually addressing them within existing legal and political constraints. For example under the Fifth Urban Development Project, supported by the World Bank, the government intends to consolidate all budgets for KIP from the central level into one, and to strengthen the role of the local agencies; this will significantly improve the scope for local coordination. A related matter which needs attention is the expansion of urbanized areas over the kotamadya boundaries, and the effects of rapidly-urbanizing kabupatens close to metropolitan areas. The kabupaten administrations are rural oriented and do not at present have the focus or capability to deal with urban development. It will be important to review at regular intervals the degree of urbanization of kabupatens, and periodically extend kotamadya boundaries and either create new kotamadya for rapidly urbanizing Kota kabupaten, or strengthen the kabupaten administration substantially in order to manage them. Initiatives have recently been made in D.J. PUOD on this matter (para. 3.77(b)).

Principles to Guide Administrative Changes

3.72. From the foregoing discussion these appear to be three broad areas of concern with regard to the administration of urban services. These can be classified under the headings of (a) clarity and coordination of administrative functions; (b) consolidation and control of funding; and (c) incentives for efficiency. Each is briefly discussed below.

3.73. Clarity and Coordination of Administrative Functions. As the scope and extent of urban services expand, it becomes increasingly important to define the principal roles of each level of government and the key areas and timing of coordination in order to avoid confusion and inertia, and to assign clear responsibility and accountability for the various aspects of allocation, planning, implementation, supervision and maintenance of services.

(a) The Central Departments should increasingly focus on overall policy and ensuring that policies in the technical, financial and administrative areas are both internally and mutually consistent and supportive. Central agencies need to constantly review their internal organization to ensure that assistance to lower levels is provided in a coherent form, minimizing fragmentation and multiple lines of communication. A permanent mechanism needs to be established to bring the key ministries together to coordinate policy, to review regional performance, to allocate funds and timing of assistance and to deal with external funding agencies. Direct involvement in planning, construction and implementation should be rapidly delegated to tingkat II for local services contained within the local administrative boundaries, and to the provincial level for national and regional infrastructure which passes through urban areas. Less involvement in implementation is needed for the large and capable cities and provinces and more attention on strengthening the capability of weaker provinces and smaller cities. Increasing emphasis needs to be placed on training programs tailored to the specific needs of local, provincial, and national level staff, and to stimulating exchange of experience between regions and administrative functions.

(b) At the provincial level, activities should focus on technical assistance to tingkat II and review, monitoring and quality control of their development programs. The Provincial authority should supervise the operations of key local enterprises, including the PDAMs. It would not involve itself in contract management of local municipal services. It would, however, undertake planning (in collaboration with tingkat II) and implementation of major services which cross administrative boundaries, serve several tingkat II, or are technically too complex to be undertaken by the second-tier authorities. Examples include improvements to rivers and major irrigation/drainage canals, primary roads, and new water supply schemes. The latter, however, could increasingly be delegated to the larger and more capable tingkat II, especially the capable kotamadyas.

(c) The local (tingkat II) level would be responsible for identifying its service priorities (within general national guidelines), planning and budgeting for all services (in collaboration with the KANWILs, especially those which will implement certain services), contracting and supervising its local infrastructure program, and maintaining and operating the facilities. It would also take measures to expand its local revenues, improve its financial management and be encouraged to expand its services by taking up loans. Tinkgat II would involve the neighborhood communities at an early stage in identifying priority locations for local services, managing water standpipes and sanitation facilities, and where technically appropriate, encouraging community implementation of local infrastructure, through grants to the LKMD.

3.74. Consolidation and Control of Funds. At present one project in a single locality may have funds from central, provincial and local governments, each with its separate accounting and reporting requirements and even separate project managers. The central funds may be further split into DIP, supplementary budget (ABT), crash program and foreign aid channels. Separate contracts may be let according to the separate fund sources, the contractors reporting to different project managers, and the funds may come down at different times, all making the job of providing a few simple services a monumental task of coordination, and often leading to confusion and inertia. The system also makes it impossible for higher levels of government to monitor the quality, balance and output of services. Chapter 4 discusses the funding system in greater detail and recommends improvements in financial management. The financial matters discussed here relate to the flow and composition of funds as they affect the institutional relationships and management of urban services. In this respect, funds from central government for urban services should be organized to:

(a) be channelled to the level of government which is primarily responsible for the services. In the case of major roads, major drainage, most new water supply schemes, 1/ these would be DIP funds to sectoral departments. In the case of all other local infrastructure, they would be grants and loans paid directly to tingkat II authorities which would construct and maintain these services.

1/ Except for the large cities which would be required to finance their expansion schemes through loans.

(b) provide flexibility to tingkat II to spend on basic services. This would imply a consolidation of the present project grants and local subsidies into a single urban development grant for local services. This grant should incorporate the various grant funds presently expended on KIP, local drainage, sanitation and solid waste, and incorporate the present INPRES Dati II. It would be paid directly to tingkat II and could be calculated on a per capita basis with regional cost variations. In order to ensure adherance to national policy objectives, and to monitor output and quality, the grant would only be paid on review by the provincial BAPPEDA and KANWILs of the physical and financial program prepared by the tingkat II authority.

(c) expand the quantity of finance and stimulate local authorities to undertake longer-term development programs. For the scale of investments proposed by government substantial loan finance will be required. For the categories of local services noted above (and for established PDAMs) a loan fund should be made available from central government to the tingkat II authorities. It may be worth considering allocating the loan funds on a competitive basis. Provinces and tingkat II would not then become passive recipients of central government selection, but would have to demonstrate interest in expanding their activities through a specific infrastructure plan and program, and willingness to hire staff to implement it and to raise revenues to repay loans. The loan fund could revolve so that repayments from tingkat II are applied to finance future phases of local urban infrastructure.

3.75. Incentives for Efficiency. Greater efficiency in the programming and construction of civil works can be expected through the clarification of roles and the consolidation of functions noted in paras. 3.73 and 3.77. However, the problem of adequate remuneration of central-level and KANWIL staff needs addressing (para. 3.60) as the focus of central departments changes from direct implementation to providing policy guidance, technical assistance, monitoring and training. One alternative may be to pay higher salaries to compensate for the loss of project honoraria. If this is not feasible, another approach could be to pay a "technical assistance" honorarium based on a percentage of the disbursements from the urban development grant and the infrastructure loan fund. It would also seem desirable to use the expansion of training for staff at all levels of government as an incentive for performance. Evaluation of the effectiveness of training by testing the recipients' knowledge gained and job performance might be used to promote staff to positions of greater responsibility and higher pay. Efficiency could be increased by allowing the Mayors and Bupatis to have greater discretion in the appointment, placing and grading of staff.

Modifications to Administrative Structures

3.76. The above considerations suggest that in the future some important changes must take place in the way urban services are administered. Some of the changes are already being considered while some may not be possible for several years. The remaining sections in this chapter suggest modifications which appear desirable to support these changes at central, provincial and local levels, and measures which could be taken in the short and in the medium term.

3.77. Central Agencies. If the directions suggested in para. 3.73 are pursued, the following modifications to the internal organization of central agencies, and strengthening of certain functions would seem appropriate:

(a) Department of Public Works. With regard to D.J. Cipta Karya the expanding urban services program suggests a reorganization of the Directorates to comprise (i) the Directorate for Water Supply, (ii) a new Directorate for Environmental Sanitation, which would include human waste disposal, drainage, kampung improvement, solid waste management, and infrastructure maintenance, (iii) the Directorate for Public Buildings, iv) the Directorate of Housing, and (v) the Directorate of City and Regional Planning. Cipta Karya has recently established a new Directorate of Programming (Bina Program) which will coordinate the policies and programs of the other Directorates. This is an important and positive step towards providing consistent advice and assistance to the local governments. Bina Program could also become the nucleus of Cipta Karya's technical advice to the proposed Municipal Development Board (para. 3.78). As noted above much of the emphasis of the central office would be on policy, information systems and training, with technical assistance and quality control through the KANWILs. Training sessions for local officials organized jointly with D.J. PUOD have already been established and it would be highly desirable to expand these activities to also involve the D.J. Regional Development in the Department of Home Affairs (which is responsible for the BAPPEDAs and the INPRES programs). The Directorate of City and Regional Planning would shift its emphasis away from preparing city master plans in the central office, to providing simple techniques and guidance on urban planning and programming to the tingkat II BAPPEDA, city planners and public works offices. With regard to D.J. Bina Marga and D.J. Pengairan, it is proposed that these Directorates-General each establish a liaison group for urban infrastructure to provide close communication with Cipta Karya. As noted earlier, (para. 3.41), the direct involvement of Bina Marga's Directorate of Urban Roads with the tingkat II urban planning and city engineers' offices to jointly develop city transport programs would be very desirable. The same point can be made for D.J. Pengairan where regional drainage construction and maintenance has a major influence on urban areas. These two agencies would also play a major role in strategy and infrastructure planning in metropolitan areas (see para. 3.77(c)).

(b) Departments of Home Affairs and Finance. These two Departments are discussed together since they both have similar responsibilities for local governments in the areas of financial management (paras. 3.09-3.12). A thorough review of financial management practices of local goverment, and valuable recommendations have recently been made, 1/ most of which need not be repeated here. There are, however, four issues which are important in relation to urban services and the themes of this report. First, there is a need for the Directorate Bina Kota to develop demographic and socio-economic

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1/ See series of papers prepared for Departments of Finance and Home Affairs by University of Birmingham Central-Local Government Unit; e.g., B. Binder Financial Management in Local Goverment, March 1982.

data on urban centers which are not kotamadya using appropriate definitions for urban areas devised in conjunction with the Biro Pusat Statistik (see Chapter 1). 1/ These urban centers are not recognized as such at present, and statistics on them are ill-defined, although they contribute a significant proportion of the urban population. Second, as noted in para. 3.26, the mechanism for guidance and oversight of municipal enterprises (including the PDAMs) by the Department of Home Affairs could be improved. Experienced staff are needed at the central level to prepare guidelines and monitoring procedures for these enterprises, especially in the areas of tariffs and connection charges, accounting systems, financial projections, and analysis of maintenance operations (with advice from Cipta Karya). Third, there needs to be a close link established between Directorate Cadaster (D.J. Agraria of Home Affairs), and D.J. Pajak (Taxation, of the Ministry of Finance) for the property cadaster to form the basis of the IPEDA taxation. Finally, in order to improve the local governments' management capability, there is a need to reorganize the tingkat II budget structure, its review procedures and timing to (i) organize the budget on an "objective" basis of programs, projects and activities, to also include the national sectoral budgets proposed in the regions and thus allow a clear analysis of sectoral programs and of capital and recurrent expenditures, (ii) institute a medium-term (say three years) budget and rolling capital program and provide for effective review of programs and projects by tingkat I, (para. 3.73(b)), and (iii) initiate an earlier preparation of the yearly budget and a speedier review. Central sectoral departments should also be dissuaded from making alternative budget proposals for local infrastructure and services directly to BAPPENAS.

(c) BAPPENAS. Local governments could be greatly assisted if guidance could be provided from BAPPENAS on the projected single- and multi-year financial ceilings for national and local infrastructure sectors, province by province. This would provide a basis both for the first and second level regions to plan their investment program with some realism and confidence, and for provincial and central approval and monitoring. The preparation of local rolling investment programs would also allow BAPPENAS to concentrate on the performance of local governments in relation to national goals and reduce its time on detailed approvals. A special problem exists with regard to metropolitan areas where a large proportion of the urban investment budget is spent on national infrastructure sectors by central ministries. The experience of the Jabotabek planning and implementation team suggests that an Office for Metropolitan Regions needs to be established under the Deputy for Regional Development. This would allow BAPPENAS an opportunity to evaluate the efficiency and economy of alternative investment programs involving substantial national investments. This office would also chair teams preparing metropolitan development programs and committees of key sectors on

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1/ Bina Kota is presently finalizing an ordinance with BPS to establish boundaries of Kota kabupaten (non-kotamadya urban areas). This is an important step towards making the medium and small urban centers efficient administrative units (para. 3.71).

metropolitan transport (see para. 3.41(b)) and water resource management (para. 2.15).

3.78. Coordination at the Central Level. As in all governments there is inevitably a split in departmental responsibilities between "technical" matters which are the responsibility of sectoral departments (Public Works being the most prominent), "administrative" matters which are the concern of Home Affairs, resource allocation (BAPPENAS), and "financial" control (Department of Finance). At the local level, the provision of urban services is, of course, a synthesis between technical (planning and design), administrative (staff, land acquisition and tenure, user charges) and finance (funds, auditing, taxation measures). Because these functions and their reporting, accounting and evaluation are segmented into ministerial responsibilities which extend vertically into the various Dinas of the local government, there is often a problem of mismatches in timing between these various aspects of development. As the management of the overall program is progressively delegated to the tingkat II authorities, a more formal mechanism for coordinating central agencies may be required. For example, a major function of the central government under the new system would be an assessment of the overall financial, technical and manpower needs of particular cities, but not necessarily to decide the precise sectoral allocation of investments. No single central agency can currently take this overall view. One possibility would be the establishment of an Urban Development Board comprising the key Departments and BAPPENAS, whose role would be to decide overall policies, funding allocations for the urban sector, to coordinate external financial assistance, and supervise technical assistance. The Board would also play a central role in the coordination of services across province boundaries, such as water systems. In the short term, one possibility would be to expand the activities of the already existing coordinating committee for the Institute for Urban Policy Analysis (IUPA) to take on these additional tasks. 1/ Many countries have some type of urban services board usually in conjunction with an Urban Development Fund for making loans to municipalities. This approach is described further in paras. 4.44-4.45.

3.79. Provincial Level. The major functions at this level are described in para 3.73(b) and would focus on technical assistance to tingkat II, review of their multi-year plans and programs and yearly budgets, monitoring of performance and quality control. The same need for coordination between functions arises here as at the central level. An appropriate way to deal with this may be to establish provincial-level urban services/water supply Committees comprising membership from the BAPPEDA, Public Works, Home Affairs, and Ministry of Finance. Through delegation from their central offices, the Committees would review the investment and financing programs of the tingkat II within the province, approve release of the urban development grants after evaluation of satisfactory performance, and evaluate applications for loans from the local infrastructure loan fund. Guidance and evaluation of the PDAMs operation and management could be a function of a specialist subcommittee of the Committee, headed by the provincial Biro Perekonomian Daerah.

1/ This inter-departmental committee currently is responsible for guiding studies and research on urban topics of interest. It is intended that eventually a permanent Institute will be established.

3.80. Local Level. For Jakarta and some of the larger kotamadya, the Government is encouraging the development of a system of financial and physical planning that bring together spending plans from all central and local sectoral departments. In Jakarta and Surabaya, three-year rolling plans are being introduced, modified for the Indonesian context. 1/ It is intended to develop a standard system of integrated citywide planning and extend it to four more large cities over the next two years.

3.81. For medium and smaller cities a simpler approach is needed. A simple spatial planning process is available which could be undertaken by local staff under guidance and short training courses provided jointly by the Directorates of City and Regional Planning (TKTD) in Cipta Karya and Urban Development (Bangunan Kota) in PUOD. The main features are: i) use of aerial photographs to provide an information base on topography and environmental conditions, and by interpretation, social features of the city. This is facilitated by the large program of urban aerial photographic mapping now underway; ii) definition and ranking by map overlays of areas with environmental problems, plotting income levels, existing and desired growth directions, and existing infrastructure and social services; iii) from (ii), definition of priorities and agreed areas of focus; iv) with review and agreement of the local council (DPRD) and provincial KANWIL and Dinas P.U., the development of action plans for each program area and phasing of programs under budget allocations indicated by central and provincial governments. The various programs would then be assigned to fund sources and implementing bodies.

3.82. This process could be incorporated in, and be the principal focus for, physical services for the local REPELITA. But in addition, it is desirable that these plans be updated more regularly, as three-year rolling plans, reviewed annually. 2/ This would help overcome a serious weakness of the existing local REPELITAs, which is that they are usually drawn up without a realistic view of financial resources available from higher levels of government, and therefore become quickly out of date. This approach will be helped if BAPPENAS and the Department of Finance can provide indicative budget levels.

SUMMARY OF SUGGESTED ACTIONS

Suggested Short-Term Actions (two to three years)

3.83. While major changes in the institutions involved in the sector may not be possible immediately, some of the administrative measures suggested in this chapter could be initiated in the near future to improve efficiency in implementation, and studies could be undertaken to lay the groundwork for structural changes in the medium term.

1/ See for example Cipta Karya: "Financial Planning and Control in DKI", Jabotabek Team, Report No. I/26, September 1982; and M. Page: "The Design and Implementation of a System of Resources Planning, Programming and Budgeting for the Kotamadya Surabaya," April 1982.

2/ Three years is suggested as a representative timescale for the preparation and execution of a single medium-sized project.

3.84. Administrative measures which are urgently needed to support more efficient implementation, include:

(a) modify the Directorates of Cipta Karya (para 3.77(a)), and establish liaison groups for urban infrastructure in D.J. Pengairan and D.J. Bina Marga;

(b) establish Urban/Water Supply Committees (comprising the BAPPEDA and KANWIL P.U.) at the provincial level, initially in Java (para. 3.79);

(c) establish a division of Metropolitan Development in BAPPENAS, together with associated transport and water resource committees (para. 3.77(c));

(d) assign staff from Bina Marga to work with tingkat II administration on local transport plans and programs (paras. 3.77(a) and 3.41);

(e) establish guidelines for preparation of local urban infrastructure plans and programs and procedures for review at the provincial level;

(f) channel grant funds for local infrastructure directly to tingkat II, commencing with provinces on Java;

(g) prepare a pilot urban administration project, in which the kotamadya and kota kabupaten in one province would be given additional responsibilities for management and coordination of block grants and loans from the central government for an expanded infrastructure and maintenance program. Improvements in planning, budgeting, monitoring and local revenue generation would be introduced. The provincial level would evaluate and monitor the local programs. The project would have training and technical assistance components and would be carefully monitored for potential replication; and

(h) expand training programs to key staff at local, provincial and central levels (paras. 3.42 to 3.49).

3.85. Studies to prepare for the medium-term administrative changes could include:

(a) designing an information system on urban services and finance. Currently key data on non-kotamadya urban populations, urban conditions, existing levels of service, consolidated expenditures on services by different agencies and local staffing levels and skills are not available in a form that is required by central decision makers to make policy judgements on overall priorities among cities and sectors. Since the information is essential to several agencies, a joint committee of the Departments of Home Affairs, Public Works and Finance, and BAPPENAS should direct this work. Should it be decided to establish an Urban Development Board, this would be the obvious agency to manage this information system (para. 3.77(b));

(b) a related study to prepare operational details for a revised local budget and audit structure. This would carry to a conclusion the work on financial management of local government prepared for the Department of Finance (para. 3.77(b));

(c) studying options for restructuring grant and loan allocations and the establishment of a Municipal Development Board and Urban Development Fund. The study would review the present grant allocation system and the feasibility of consolidating various fund sources and augmenting them for the expansion of urban services, reviewing the system of internal and external sources of loans with a view to providing a consistent grant/loan system for local governments which would respond to local variations in need and provide incentives for performance. Within this framework it would explore the relative merits of alternative administrative systems for coordinating the overall program (paras. 3.78, 3.84, 3.85);

(d) study of staffing levels and variations in technical and administrative capacities of key agencies at the province and tingkat II levels, training requirements for technical and financial staff, and remuneration levels and mechanisms especially for central office and KANWIL staff (para. 3.75);

(e) development of improved guidelines for oversight of municipal enterprises and mechanisms for guidance, supervision and monitoring (para. 3.77(b)); and

(f) preparation of regulations to rationalize and improve local tax sources (see Chapter 4).

Suggested Medium-Term Actions (three to five years)

3.86. The following measures could be taken following review and modification by government of the studies and actions undertaken earlier:

(a) establishment of an Urban Development Board at the national level, and an Urban Development Loan Fund;

(b) establishment of a consolidated urban development grant system;

(c) strengthening of provincial-level offices for guidance and supervision of municipal enterprises (including PDAMs);

(d) implementation of measures to improve staff pay and benefits, especially for central and KANWIL staff not directly involved in implementation;

(e) implementation of new and expanded local tax measures (see Chapter 4); and

(f) expansion of the local administrative measures tested in the pilot urban administration project, and further defined in the studies, to other provinces.

Chapter 4: FINANCING THE PROGRAM

4.01. In Chapter 2, targets for the coming decade for the various urban services were described. As recently as two years ago these targets would have been thought to be comfortably within reach from a financial standpoint. The availability of funds to finance the program was not thought to be a major obstacle; instead it was non-financial factors, such as shortages of management and manpower, that were perceived to be the principal constraints on progress. While these non-financial constraints have not become less important (Chapter 3), the decline in international oil prices has now raised serious questions about whether such a program can be financed. This is not to say that an expanded program of urban services should not or cannot proceed, but that the existing pattern of finance, whereby the bulk of funds flow from the Central Government, will probably have to be significantly modified.

4.02. This chapter is divided into three sections. In the first, the existing pattern of finance is described. The relationships between central and local government finances are described, first with respect to overall income and expenditure, and then with respect to urban services in particular. The sources of finance for each of the various services are explored in some detail. In the second section, the financial requirements for the proposed program are described and discussed in conjunction with recent projections of central government revenues for the coming years. In order to finance the program under the existing pattern of finance, the proportion of central government funds allocated to these urban services would have to increase by over 100%. While some increase in the proportion of budgetary funds allocated for these services is probably desirable, an increase of this magnitude would probably squeeze out other programs which may be equally deserving. At the very least it is important to explore options for alternative means of finance. This is attempted in the third section of the chapter. In broad terms there are three complementary sources of finance that could increase in relative importance: local taxation, borrowing by local authorities, and cost recovery. The prospects for each are reviewed.

A. THE EXISTING PATTERN OF FINANCE 1/

4.03. Before exploring the sources of finance for urban services in particular, it is important to understand the changing pattern of finance for government spending as a whole. Table 4.1 presents, in simplified form, this overall picture. It is clear that in the second part of the 1970s the role of the Central Government as a source of funds increased substantially in relation to local government. This is entirely explained by the dramatic increase in revenues following the doubling in the international oil price in 1979. Overall revenues for central and local governments combined grew at an average annual real rate of 15% between 1976/77 and 1980/81, while local revenues

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1/ The quality of the data on expenditure and local finances used in this section is weak. Annex IV contains a note on data sources and reliability.

(including "assigned" revenues) rose by an average of only 5.7%, a rate lower than the overall growth in national income.

4.04. Although, as shown in the table, local governments generate well under 10% of total government revenue, they actually account for over 20% of total routine plus development expenditures. If only development expenditures that are incurred in the region 1/ are considered, the percentage of local government to total (local plus central) spending rises to 36%. The difference between local government expenditures and their own revenues is made up by central government grants to these lower levels of government.

Table 4.1: SOURCES OF TOTAL GOVERNMENT FINANCE
(Percent of Total Central and Local Government Revenues) /a

	1976/77	1978/79	1980/81	1981/82 /b
Central Government	89.8	90.1	92.3	92.8
Oil Revenues	(39.0)	(39.3)	(55.3)	(55.9)
Non-oil Revenues /c	(50.8)	(50.8)	(37.0)	(36.9)
Local Government /d	10.2	9.9	7.7	7.2

/a Includes development and routine accounts.
/b Estimate only. Local government accounts are not yet available for 1981/82.
/c Includes foreign aid and loans.
/d "Local" includes province, kabupaten/kotamadya, and desa/kelurahan. Includes local taxes and charges, "other" income, and assigned revenue. The latter category (IPEDA) is formally a central government tax, but accrues to local government. These data represent the mission's best estimate based upon local budgets and surveys, but they should not be regarded as precise.

Source: Department of Finance, and budgetary accounts from the various levels of government.

1/ Some central government expenditures are incurred "centrally"; i.e., they cannot be allocated to particular regions (e.g., defense, central administration, etc.). By "development expenditures incurred in the regions", we refer only to those development expenditures that can be identified as allocated to particular regions. This amounts to about half of all central and local government development expenditure.

4.05. A more complete picture is given in Figure 4.1, which shows schematically the financial flows (both routine and development funds) among the various levels of government for the year 1980/81. This is a considerable simplification, and a number of assumptions have had to be made in compiling the figures. However, it is useful in giving an overall picture of the magnitudes involved and the relative importance of the various sources of finance. Again, the most striking feature is the high level of financial centralization and related dependency on oil. A more detailed discussion of local sources of finance will occur later on in the chapter. Against this overall financial picture we now explore the magnitude and pattern of finance for urban services.

4.06. As a whole, urban services 1/ have over the last four years accounted for about 9% of all central and local government development spending incurred in the regions. Table 4.2 illustrates that the role of local authorities in spending on urban services is about the same as in other sectors, but that in terms of financing, the local authorities play a relatively more important role than in other sectors. Non-grant local revenues finance over a quarter of all development spending on urban services (and most of routine spending) compared with only 10% for all sectors as a whole. This is still a small proportion that must be raised, but it has an important implication; to the extent that local revenues can be raised, there is somewhat more cause for optimism that any cutback in central funds for municipal services could be made up by locally generated funds than in most sectors.

4.07. The various sources of funds for municipal services are listed in Table 4.3. The financing picture is actually more complex than suggested by this list; for example, the local sources listed must be multiplied by two if province and Dati II governments involved in the provision of services, and three, if village (or kelurahan) contributions are to be taken into account. The following general points can be made about the system of finance: 2/

(i) the various funding sources tend to be fragmented and it is difficult to disentangle the financial flows through the system. Not only are contributions to a particular urban service made by several different agencies, such as Dept. P.U., province, kotamadya, and urban village, but there may be several separate financing channels within the agencies themselves. This is particularly a problem within central departments, where, as well as DIP and foreign loans funds, there may be funds from the supplementary Budget (Anggaran Biaya Tambahan or ABT), from special "crash programs", from "equity" (PMP)

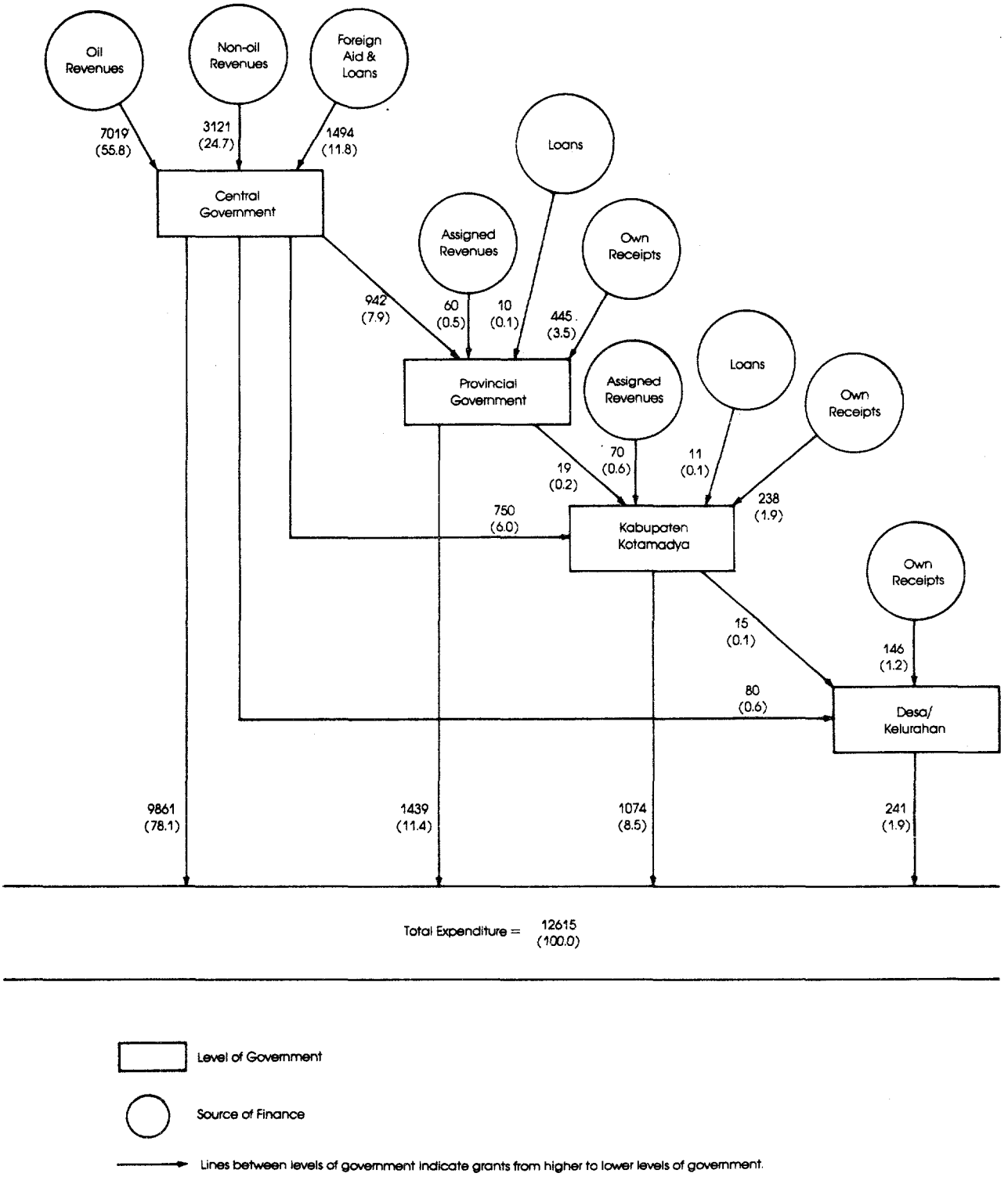
1/ Defined as in Chapter 2, excludes housing.

2/ For a detailed analysis of some of these issues see Brian Binder, Financial Management in Local Government: Study No. 7 of the Central-Local Financial Relations Review for the Government in Indonesia, March 1982.

Figure 4.1

SOURCES AND FLOW OF TOTAL GOVERNMENT FUNDS 1980/81

Rp. Billion, with Percentages of Total Expenditure in Parentheses



Level of Government

Source of Finance

Lines between levels of government indicate grants from higher to lower levels of government.

Source: Analysis of accounts from different levels of government. Village-level receipts are estimates, based on surveys.

World Bank—25357

Table 4.2: RELATION OF LOCAL TO CENTRAL GOVERNMENT IN URBAN SERVICES EXPENDITURE AND FINANCE (Average 1979/80 - 1982/83)

	Urban Services	All Services
Ratio of local government contribution to total development expenditure incurred regionally		
SPENDING	35%	36%
FINANCE (from non-grant revenues)	26%	10%

Source: Budgetary accounts from various levels of government.

Table 4.3: SOURCES OF FINANCE FOR MUNICIPAL SERVICES

Central Sources

- Sectoral department development budget (DIP)
- Supplementary budget funds
  - Anggaran Biaya Tambahan (ABT)
  - Crash Program (e.g., KEPPRES 10)
- Equity contributions to public utilities (PMP)
- Foreign aid to sectoral programs (mainly loans)
- Grants to regional governments (INPRES)
- Loans to, or through regional governments (from both domestic and foreign sources)
- Grants to local authorities for routine expenditures (Subsidi Daerah Otonom)

Local Sources

- "Assigned" central government revenues (IPEDA, etc.)
- Local taxes
- Charges for services
- Miscellaneous sources

Source: Department of Finance.

contributions and from domestically financed central loans (RDI). Each of these sources has its own separate administration and accounting arrangements and may be managed by different sections in the central and service departments. The urban service may also receive contributions from more than one program head in the national budget 1/;

(ii) no consolidated budgets or accounts appear to be prepared at any level which might identify and coordinate the various separate financing sources and the financial and operational plans for the provisions of a particular urban service as a whole;

(iii) while there is usually a fair degree of information available about plans and budgets for DIP programs, there is often less information readily obtainable about the actual progress of expenditure. In addition expenditure against budget is accounted for separately for each year's development programs, so that it is difficult to obtain readily a statement of the actual total expenditure incurred in a given financial year;

(iv) it seems that budget and accounting arrangements for financing through foreign aid, domestic loans (RDI) and equity capital (PMP) are rarely, if at all, made in the sectoral executive departments responsible for the execution of projects, with the consequences that it is very difficult to form an accurate picture of the contribution being made to programs from these sources 2/;

(v) no central statistics appear to be kept--certainly none in a consolidated and consistent form--which identify either budgetted or actual spending in both provinces and second level regions on each main regional service. 3/ This means that it is impossible, for example, to discover what is the total spending on any particular service in any city without referring to the individual Dati I and

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1/ A particular example is that of drainage and flood prevention where there are separate DIPs within the programme "conservation of Forestry, Land and Water" under Dit.Gen. Pengairan, and within the "Environmental Health" program under Dit.Gen. Cipta Karya. The same problem arises in second level regions, where projects being financed from the INPRES Dati II are excluded from the regional budget and treated and managed financially, in an entirely separate fashion.

2/ Central records in the Department of Finance are fragmented between several different responsibility centres and are not usually in a form which allows an easy identification with sectoral programs.

3/ The Department of Finance compiles a summary of province budgets in such a form but the service groupings employed are too broad to be useful in analysing expenditures on specific sectors.

Dati II budgets, which often are not available at the central level. Data on Dati II expenditures on particular services presented later in this chapter could be obtained only by surveying a sample of local budgets; and

(vi) although local budget documents are supposed to adhere to a standard format, expenditure categories are often too general; too much income and expenditure is recorded under "other" or "miscellaneous" 1/ and there are obvious inconsistencies in the treatment of items from one year to the next.

The financial data discussed in the remainder of this chapter must be interpreted in the light of these reservations. Annex IV contains a further discussion on sources of data. Recommendations for administrative changes to resolve the problems noted above are outlined in Chapter 3.

4.08. The allocation of total investment funds among the various municipal services and among the provinces was described in Chapter 2 (Table 2.1). Over the last 4 years the largest share has gone to water supply (29%), followed by urban roads and traffic control (23%), public transport (16%), environmental health (13%), and kampung improvement (7%). Over this period the average annual spending on all regionally provided urban services was Rp. 8,470 per head for the urban population as a whole. A breakdown of the sources of funds for these services in the aggregate is given in Table 4.4, while Table 4.5 presents a more disaggregate picture, distinguishing, as far as possible, the pattern of finance for some of the more important services: water supply, kampung improvement, drainage and sanitation, and urban roads. These national-level figures conceal the extent to which the per capita expenditures and sources of finance differ among cities; this is illustrated in Table 4.6, which presents expenditure patterns for a small sample of kotamadya for which a more detailed analysis was undertaken. Further background data to these tables presented in Annex IV Tables 2.1 - 2.9.

1/ Expenditures recorded under one category in one kotamadya, for example, may be recorded under a different heading in another.

Table 4.4: ESTIMATED SOURCES OF FUNDS FOR ALL REGIONALLY INCURRED URBAN SERVICES SPENDING (Average 1979/80 - 1981/82)

	Rp. billion	Percent of total
CENTRAL SOURCES		
Sectoral Department DIPs	61.6	23.4
Supplementary budget (ABT)	2.7	1.0
"Crash Program" funds	34.8	13.3
Foreign Aid (mostly loan)	55.5	21.1
Domestic Loan (RDI + Inpres Pasar)	16.4	6.2
Equity Capital (PMP; mostly loan)	6.3	2.4
Grants to villages	1.2	0.5
Total Central Sources	178.5	67.9
LOCAL SOURCES (including any funds from INPRES Dati I & Dati II grants /a	84.5	32.1
	263.0	100.0

/a The 32.1% local contribution noted here differs from the 26% in Table 4.2, by the amount of the contribution of INPRES grants. In Table 4.2 an effort has been made to separate out those grants from the truly local contribution. No reliable data is available however which permits the disentangling of spending on services from INPRES funds and spending from local revenues. For this reason in this table, the two sources are left as combined.

Source: Analysis of budget accounts from various levels of government.

Table 4.5: SOURCES OF DEVELOPMENT FINANCE FOR SELECTED URBAN SERVICES
(Average annual figures for 1979/80 to 1982/83)

	Rp. billion	Rp./head	% of total
A. WATER SUPPLY			
Sectoral DIPs (Cipta Karya)	23.4	753	30.7
Supplementary Budget (ABT)	1.6	52	2.1
"Crash Program " (KEPPRES 10)	14.8	476	19.4
Foreign Aid	21.4	688	28.1
Domestic Loan (RDI)	4.7	151	6.2
Equity Capital (PMP)	6.3	203	8.3
Local contributions	4.0	129	5.2
Total	76.2	2452	100.0
B. KAMPUNG IMPROVEMENT			
Sectoral DIPs (Cipta Karya)	3.9	126	21.8
Supplementary Budget (ABT)	1.1	35	6.1
Foreign Aid (Some in grant form)	6.9	223	38.6
Local constributions	6.0	193	33.5
Total	17.9	576	100.0
C. DRAINAGE AND SANITATION			
Sectoral DIPs - D.G. Cipta Karya	2.0	66	5.8
- D.G. Pengairan	12.0	386	34.6
Foreign Aid	4.2	136	12.1
Local contributions	16.5	531	47.5
Total	34.7	1119	100.0
D URBAN ROADS			
Sectoral DIPs (Bina Marga)	17.5	543	30.4
Local contributions	40.0	1243	69.6
Total	57.5	1786	100.0

Source: Department of Public Works (Cipta Karya), Department of Finance, and analysis of local budget accounts.

Table 4.6: AVERAGE ANNUAL DEVELOPMENT EXPENDITURES ON SELECTED URBAN SERVICES IN SAMPLE KOTAMADYA 1979/80 - 1982/83

(Rp. per head and proportion of finance from central government)

	1980 Pop.	Water Supply /1		Kampung Improvement		Urban Roads		Total	
	('000)	Rp./head	% CG /2	Rp./head	% CG /2	Rp./head	% CG /2	Rp./head	% CG /2
Jakarta	6305	1526	81	939	50	2801	7	5266	36
Semarang	1026	1117	75	1039	66	1397	75	3553	72
Malang	511	661	92	305	21	1036	81	2002	75
Surakarta	470	2691	100	388	96	455	68	3534	95
Cirebon	224	10937	100	1826	94	1050	21	13813	93
Magelang	124	260	100	311	60	752	68	1323	72
Salatiga	86	-	-	355	92	29	-	384	85
Bukittinggi	71	549	-	489	92	2168	81	3206	69

/1 Excludes sectoral DIP for 1980/81 and ABT for all years (see Annex IV, Table 2.2).

/2 % CG: Proportion of funds from central government (development budget, foreign aid, loans, etc). This does not include INPRES grants.

Source: Annex IV, Tables 2.2, 2.5 and 2.8

B. FINANCIAL NEEDS AND AVAILABILITIES IN THE EIGHTIES

4.09. Chapter 2 outlined a set of targets for the rest of the decade for the various urban services. Some of these (e.g., water supply, sanitation) were based upon explicity agreed government programs; others (e.g., KIP) were based upon preliminary government plans, not yet approved by BAPPENAS, and the rest were based upon outline programs in preparation by sectoral agencies. The investment plan based on these targets (Table 2.23) showed that for the program as a whole investment expenditure would have to rise by an average of about 18% per year in real terms over the next 5 years, with average investments 2.5 times that expended in the latter part of REPELITA III, in real terms. It was noted that if this level of investment proved difficult to finance, a 25% reduction in the program through selective cuts would be possible and yet at the same time achieve the principal objectives of the government in the urban services sector. This indicative program was outlined in Table 2.24 and discussed in paras. 2.69-2.71. The targets were considered "feasible" from a technical and administrative standpoint. The present section explores their feasibility from a financial standpoint.

4.10. Table 4.7 compares the average annual development expenditures required to achieve these targets with actual expenditures over the last four years and indicates the required annual rates of growth. It is estimated that for the program as a whole investment expenditures would have to rise by an average of about 13% per year in real terms over the next 5 years.

4.11. Even for this reduced program, these rates of growth far exceed the expected growth rates for the central government budget. The decline in oil production from 1.6 to 1.3 million barrels per day in 1982 and the decline in the international oil price from $35 to $29 per barrel in March 1983 have had the combined effect of reducing central government revenues by about $4 billion, equivalent to about half of the central government development budget in 1982/83. While oil production levels are expected to recover gradually, it is now generally agreed that it is unlikely that oil prices will recover to their old levels in real terms for several years. This represents a major downward revision in Indonesia's financial outlook from that of a year ago. For the period 1981/82 to 1989/90 it is now expected that the central government development budget is likely to grow in real terms by only 5.5% per year on average 1/, and to achieve this it will require a major effort of central government domestic taxation and subsidy reduction. 2/ This compares with an average real growth rate of over 14% between 1975/76 and 1980/81.

1/ Including the contribution of foreign aid.

2/ See "Indonesia - Policies and Prospects for Economic Growth and Transformation"; World Bank, May 1984, for detailed analysis of Indonesia's budgetary and balance of payments outlook. During the period 1983-1986, central government investment is projected to rise by an average annual rate of about 4%, rising to 6% per year in the 1985-90 period.

4.12. The proportion of central government development funds allocated to urban services should be raised in some instances for two reasons. First, government investment in some of the services is low by international standards (see para 2.03). Second, given the difficult balance of payments outlook for Indonesia it is important that public funds should be redirected away from import-intensive investments towards sectors using mainly domestic resources. 1/ These arguments are particularly applicable to kampung improvement, sanitation, traffic management, water supply distribution, and road betterment. However there is clearly a limit to which central government funds can be switched away from other sectors towards urban services without squeezing out equally deserving investments. For the purpose of the illustrative pattern of finance presented in Table 4.8, it is assumed that the share of central development funds allocated to urban services rises from 3.2% to 4.5% for the REPELITA IV period. Any increase beyond that would probably be undesirable. As illustrated by the table, this leaves an important financial gap to be filled by the local authorities and by increased cost recovery. This is the key financial challenge for the sector as a whole in the coming five-year plan period; it will require a major cooperative effort on the part of local and central administrators. Without such an effort it is unlikely that the investment program can proceed as rapidly as is necessary. The remainder of this chapter describes progress in raising local finance and cost recovery and makes a number of suggestions in this regard.

1/ This argument applies in general over the entire decade, but it is particularly relevant of the next two years or so when there will be an urgent need for adjustment of government investment programs. A general across-the-board reduction in investment may have the desired effect of improving the balance of payments picture, but could have very severe negative effects on domestic incomes and employment. It is preferable that expenditures be <u>switched</u> rather than simply <u>reduced</u>.

Table 4.7: PROPOSED FINANCIAL REQUIREMENTS FOR INVESTMENT IN URBAN SERVICES IN THE 1980s /a

	Average Annual Expenditure /a 1979/80-1982/83	Required Average Annual Expenditure /a 1984/85 -1988/89	Equivalent Annual Rate of Real Growth (%)
	--- Rp. billions, constant 1982 prices ---		
Water Supply	82	220	19
Drainage and Sanitation	38	96	13
Kampung Improvement	19	38	13
Urban Transport			
- Urban Roads	62	100	12
- Traffic Management	5	13	17
- Public Transport	45	20	-15
- Others /b	34	42	4
Total	285	529	63

/a Development expenditure by all levels of government. Routine expenditures would be over and above these levels, and would amount to about Rp 145 billion/year.

/b Assumed to grow in line with urban population growth.

Note: These financial requirements are derived from the "alternative" program presented in Table 2.4. This is lower than the original investment program of Rp. 701 billion per year, presented in Table 2.3. The principal cuts for government spending are suggested in public transport and urban toll roads.

Source: Chapter 2, Table 2.24.

Table 4.8: ILLUSTRATIVE PATTERN OF SPENDING AND FINANCE FOR SELECTED URBAN SERVICES
(percent distribution)

	REPELITA III			REPELITA IV /b		
	Central Govt.	Local Govt. and Cost Recovery /a	Total	Central Govt.	Local Govt. and Cost Recovery /a	Total
Water Supply	95	5	100	50	50	100
Sanitation and Drainage	52	48	100	48	52	100
Kampung Improvement	66	34	100	50	50	100
Urban Roads and Traffic Management	33	67	100	33	67	100
Public Transport	96	4	100	50	50	100
Others	10	90	100	10	90	100
Total	64	36	100	49	51	100

/a Includes local borrowing from central government, and local spending of central government INPRES grants.

/b These figures are not necessarily indicative of government policy for the coming five-year plan. They are merely indicative of the kind of adjustment in the pattern of finance that would be required to achieve the programs described in Chapter 2. In broad terms the figures represent the mission's assessment of what is feasible in each sector.

C. RAISING REGIONAL REVENUES

4.13. There are four broad sources of revenue for local authorities in Indonesia. These are (a) grants from the central government; (b) assigned revenues, consisting of taxes and royalties levied officially by the central government but assigned to local government; (c) direct revenues to the local authorities, consisting of local taxes, services charges, dinas revenues, profits of local enterprises and miscellaneous revenues; and (d) loans to the local government. Table 4.9 summarizes the proportional contribution that each of these categories makes to the local authorities' budgets.

Table 4.9: FINANCING LOCAL GOVERNMENT SPENDING
(Percentage contribution by source)

Source of Finance	1976/77	1978/79	1980/81
1. Central Government Grant	61.7	64.7	67.7
2. "Assigned" Revenue	5.7	5.1	5.1
3. Local Taxes and Charges	13.2	12.7	12.8
4. Loans	1.0	1.5	0.8
5. Others /a	18.4	15.9	13.6
	100.0	100.0	100.0

/a Includes revenues from locally owned public enterprises, cesses on forestry product and cloves, and miscellaneous income and mis-categorized funds from other sources. The large size of this "other" category partly reflects a lack of uniformity in accounting practices.

Source: Department of Finance and analysis of Province and second tier budgets.

4.14. This section is concerned with non-grant revenues only 1/, on the grounds that it is these revenues that must make a greater contribution to financing urban services in the coming years. Over the longer term, as the responsibility for the planning, construction and operation of urban services is increasingly devolved to the local level, so too the financing of such services should also derive from the local level.

4.15. On average, non-grant revenues amounted to Rp. 5,770 per capita in 1980/81, equivalent to about 2.5% of personal per capita income. However, great variation in collection occurs across the country as is seen in Table 4.10. Per capita receipts range from over Rp. 56,000 in East Kalimantan to only Rp. 2,400 in Central Java and West Nusa Tenggara. 2/ There are many reasons for such wide regional variation; some are easily seen, others are not. It is clear that provinces with large populations and less natural resources collect less revenues per head than the more sparcely populated resource-rich provinces; the average per head revenues for the three major provinces on Java of about Rp. 3,000 contrast dramatically with the average of over Rp. 25,000 for the four Kalimantan provinces. But this relationship is not strong when other provinces are included. It is reasonable to expect that some correlation should exist between regional revenues and measures of regional income; however an analysis indicates that when the extreme cases of East Kalimantan and Jakarta are excluded, there is no significant relationship between revenues and regional GDP. Variation in revenue collection is particularly hard to explain at the dati II level of government with some kotamadya and kabupaten collecting revenues which are multiples of the receipts in others.

Table 4.10: REGIONAL GOVERNMENT (PROVINCE AND DATI II) NON-GRANT REVENUES FOR HIGHEST AND LOWEST PROVINCES 1980/81 (Rp. per head)

East Kalimantan	56,180
Central Kalimantan	25,411
DKI Jakarta	20,601
Central Sulawesi	12,647
Lampung	3,225
East Java	3,087
Central Java	2,408
West Nusa Tenggara	2,388
All Indonesia Average	5,770

Source: Annex IV, Table 3.1

1/ "Non-grant" local revenues consist of items 2-5 in Table 4.9.

2/ Annex IV, Table 3.1.

4.16. It is important to attempt to distinguish between two broad sets of factors leading to such variation in receipts. First are factors that are primarily outside the control of the local authorities themselves; these include natural resources, the level of economic activity, the number of hotels, etc. Second are factors that can be influenced by the local governments; most important here are rates of taxes and charges (to the extent that these are determined at the local level) and the collection effort, measured as the ratio of actual to potential receipts. To the extent that receipts are outside the control of local governments there is some justification for the central government attempting to equalize overall income levels by compensating low-receipt regions for their "bad luck". This can take the form of varying central government grants and sectoral spending in inverse proportion to local revenues. However, to the extent that high local revenues reflect increased effort on the part of local authorities, such regions should be rewarded, and given an incentive for further good effort. At present there appears to be no relationship between central government allocation of funds and local efforts at raising revenues. In the coming years it may be desirable to consider instituting a system whereby central funds are seen increasingly as supplementing local efforts to raise revenues and recover costs. Such an approach could contribute importantly to financing urban services. The kotamadya, and urban areas in general, are usually better placed to raise revenues than rural areas, and access to subsidized loan funds in particular could usefully be linked to local efforts. The following sections, dealing with local taxes, cost recovery, and loans to local authorities, explore the potential for rasing local revenues and the role that the central government might play in encouraging such efforts. 1/

4.17. For the sake of the discussion here it is useful to consider the potential for increased local finance under three headings: local taxation (including assigned revenues), borrowing by the local authorities and recovering costs through service charges. Table 4.11 shows, in summary form, the current receipts from these sources. More detailed provincial, kabupaten and kotamadya data are given in Annex IV, Tables 3.1 - 3.7. In this chapter prospects for raising revenue from taxes and loans are considered, while Chapter 5 deals with questions of cost recovery.

1/ This section does not attempt to give a comprehensive overview of local finances; it attempts merely to suggest options for financing urban services. To the extent that financing for these services comes from general funds it is of course necessary, however, to consider the sources of such funds. For a full survey of regional finances see e.g., Kenneth Davey: "Central - Local Financial Relations"; Report for the Ministry of Finance, May 1979.

Table 4.11: REGIONAL GOVERNMENT (PROVINCE AND DATI II) NON-GRANT REVENUES 1980/81 /a

	Total (Rp. billion)	Total per head (Rp.)
Regional Taxes	308.0	2088
Province and Dati II	(226.1)	(1533)
IPEDA Land Tax	(81.9)	(555)
Service Charges and Dinas Income /b	92.8	629
Loans	12.8	87
Other Income	437.4	2966
Total	851.0	5770

/a Includes balances held over from previous years; excluding these balances, the figure is about 10% lower.

/b The distinction between taxes and charges is not clear cut. Many of the charges included in local budgets are in the form of licence fees (e.g., for buildings, shipyards and for factories for rice hulling, brick making). In addition local charges include weighbridge fees, river ferry permits, gravel extraction fees, etc. Most of these accrue to the general budget and bear little relation to the cost of service provided by the local authority; they are therefore more correctly defined as taxes than as service charges. Data on past performance are therefore included in the discussion of local taxation in this chapter rather than in the discussion of cost recovery in Chapter 5.

Source: Department of Finance and Local Accounts.

Local Taxes and Charges

4.18. Both provincial and second tier governments are authorized to raise revenues through a wide variety of taxes and charges. Apart from taxes on motor vehicles, hotels and restaurants and the household and business registration taxes, which are levied at uniform nationally-fixed rates, local authorities are permitted to adjust rates and to introduce new taxes and charges. Changes in tax and charge rates at the provincial level and the introduction of new taxes and charges at the provincial and second tier level require the authorization of the Minister of Home Affairs, while changes in rates of existing second tier taxes need only the approval of the provincial government. Proposals for new taxes are generally referred by the Department of Home Affairs to the Department of Finance, in order to ensure consistency with national taxation policies and no adverse effect on existing national taxes. Despite the requirement for central government approval there is apparently no centrally available listing of different local tax rates. In practice tax rates are usually fairly similar across regions and local authorities request permission to introduce new taxes only on rare occasions.

4.19. Tables 4.12 and 4.13 show tax and charge receipts by level and type of local authority. A number of important patterns can be seen:

(a) Urban areas (defined here as kotamadyas) are able to raise more revenues per head then are rural (kabupaten) areas. This is true of local (non-assigned) taxes, local charges, and the basic (perkotaan/perdesaan) IPEDA tax, where the ratio of kotamadya to kabupaten receipts per head are 6:1, 4:1 and 1.6:1 respectively. 1/ Jakarta which is an extreme case of this tendency raises seven times as much local revenue per head as the national average.

(b) The rate of growth of regional revenues has not been impressive. Overall these receipts grew at a rate below the rate of growth of the economy as a whole in the latter part of the 1970s and early 1980s. (Incidentally this poor performance was similar to that for non-oil tax revenues at the national level.) Non-IPEDA tax and charge receipts in the kotamadya actually fell in real terms during this period, although there was reasonable progress at raising urban IPEDA. These low rates of growth indicate that there may be good scope for improvement; there is no reason why overall revenues should not grow at a rate considerably higher than the growth of economic activity as a whole. 2/

1/ Total IPEDA receipts (including taxes on forestry and mining) are roughly the same in kabupaten and kotamadya.

2/ The relationship of receipts to economic growth is known as the tax "buoyancy". Experience from other countries suggests that a buoyancy of 1.5 (i.e., growth of revenues 1.5 times the growth of the economy) is a reasonable target for Indonesia to aim at.

Table 4.12: LOCAL TAXES AND CHARGES BY LEVEL OF GOVERNMENT
(Excludes Assigned Revenues)

	Average Receipts 1980/81 (Rp. per head)			Average Real Growth Rate /a 1976/77 - 1980/81 (% per year)		
	Taxes	Charges	Total	Taxes	Charges	Total
Province	869	130	999	19.8	-2.3	15.3
Dati II	203	417	620	3.3	2.3	2.7
Kotamadya	1119	1378	2497	-0.8	-1.3	-1.1
DKI Jakarta	11508	2400	13908	-3.0	1.8	-2.2
All Authorities	1533	630	2163	8.3	1.5	6.1

/a Nominal growth rate deflated by rate of inflation of wholesale prices (excluding exports).

Source: Annex IV, Tables 3.4 - 3.6.

Table 4.13: AVERAGE LEVEL AND GROWTH OF IPEDA COLLECTIONS IN KABUPATEN, KOTAMADYA, AND DKI JAKARTA

	Average Receipts 1981/82 (Rp. per Head)		Average Real Growth /a 1976/77 - 1981/82 (% per year)	
	Basic IPEDA /b	Total IPEDA	Basic IPEDA /b	Total IPEDA
Kabupaten	321	609	-8.9	-3.5
Kotamadya	508	605	5.8	2.5
DKI Jakarta	1163	1210	-0.8	-0.1
Kotamadya + DKI	710	791	2.1	1.2
All Indonesia	378	636	-6.4	-2.7

/a Nominal growth rate deflated by rate of inflation of wholesale prices (excluding exports).

/b "Basic" refers to IPEDA Perkotaan/Perdesaan (i.e., normal tax levied on wholesale, businesses, etc.). "Total" includes IPEDA taxes on forestry and mining (see following section).

Source: Annex IV, Tables 3.2, 3.3.

4.20. Taxes on Land and Property. There are currently three taxes on land and property, corresponding to the three main levels of government. The net wealth tax (PPK) accrues to the central government; the household tax (pajak rumah tangga) is a provincial tax; and the IPEDA land and property tax is effectively a kotamadya/kabupaten tax (although 10% of revenues accrues to the province). Experience in other countries suggests that on average it is reasonable to raise total revenues from wealth taxes in the range of 1% - 1.5% of total wealth. In Indonesia collections are about one tenth of this level.

4.21. There is considerable overlap among these three taxes and potential for improved coordination and consolidation. The provincial household tax, which is not collected in all provinces, is particularly ineffective and complex. It is levied on the assessed annual rental of houses (at 5%), motor vehicles (at 5%) and the value of furniture (at 2%). Different teams collect revenue for the household tax and the IPEDA tax from the same households and from the same tax base. Records are generally not shared and there is apparently very little coordination. There seems to be a strong case for absorbing the household tax into IPEDA. The IPEDA tax has the greatest potential of the three property taxes and it is the most relevant for the financing of urban services; the remainder of this section is therefore devoted to IPEDA with particular emphasis given to its urban component.

4.22. The IPEDA property tax is by far the most widely collected direct tax in Indonesia. It is regarded as a "people's" tax--an opportunity for all to make a contribution, however small, to the development effort in the region. 1/ There are almost 30 million registered IPEDA tax payers, about one hundred times the number of income tax payers. There are two broad categories of IPEDA tax: property taxes for urban (perkotaan) and rural (perdesaan) households, businesses and farms; and "extraction" or land use taxes relating to the yield from mining, forestry and plantations. 2/ For each of these sectors IPEDA is in theory a 5% tax on actual or potential revenue from the land use. Table 4.14 shows the revenues from these different tax categories. Receipts from perkotaan/perdesaan property taxes, which amounted to Rp. 57 billion in 1981/82 (equivalent to 0.1% of GDP), declined in real terms in the five-year period 1976/77 - 1981/82. Urban IPEDA performed much better than rural IPEDA, but this partly reflects the transfer of land from the rural to the urban category.

1/ IPEDA--Iuran Pembangunan Daerah--means "Regional Development Contribution."

2/ The latter taxes (known as "sector PIII") are very much less broadly based than the urban and rural property taxes; revenues are collected by the IPEDA Inspectorates within the vertical structure of the Department of Finance rather than by agents of the local governments as for rural and urban IPEDA.

Table 4.14: IPEDA - AVERAGE LEVELS AND GROWTH OF RECEIPTS PER HEAD BY TAX CATEGORY

	Average Receipts 1981/82 (Rp. per head)	Average Real Growth /a 1976/77 - 1981/82 (% per Year)
Basic Property Tax	378	-6.4
Urban (Perkotaan)	(137)	(3.1)
Rural (Perdesaan)	(241)	(-9.2)
Mining, Forestry and Estates (Sector PIII)	258	5.1
Total	636	-2.7

/a Deflated by inflation of wholesale prices (excluding exports).

Source: Annex IV, Table 3.2.

4.23. Urban IPEDA, of which there are about 3.5 million registered payers, is designed to be a 5% tax on the imputed rental value of the land, with the annual rental value calculated as 6% and 3% of the assessed value of commercial and residential land respectively. The assessed value in turn is 60% of estimated market value so that the effective tax is therefore designed to be 0.18% (5% x 6% x 60%) of market value for commercial land and 0.09% (5% x 3% x 60%) of market value for residential land. Buildings on the land are taxed at a slightly lower rate. Market values of land and property per m^2 are not estimated on an individual plot basis, but according to the street or zone in which the property is located. 1/ The present system derives from a 1978 decree which introduced a market value based system of assessment. Land values were to be updated by survey every three years; although this has not happened, assessments were raised by an average of about 40% in May 1982. For commercial properties, rates now range from Rp. 1.3 to Rp. 504 per m^2 for land and Rp. 19.6 to Rp. 352 per m^2 for buildings; for residential properties, rates are half these amounts.

4.24. On average about 50-60% of current assessments is collected by the end of the tax year and another 20-25% is usually collected in future years; the overall collection ratio is therefore about 70-80%, which is reasonable by international standards. However collection rates vary considerably by type of property, with first year receipts in poorer residential areas often only 30-40% of assessed value, compared with over 80% for commercial properties.

1/ There are 32 categories of urban land and 16 categories of building.

4.25. Collection also varies greatly by city for reasons that are not entirely clear. It is to be expected that more prosperous cities with higher land prices would collect more tax per head than less prosperous cities; however with the exception of Jakarta, which, as with most local taxes, collects more than any other city, there does not appear to be any clear relationship between size, growth or economy and per head yields. Table 4.15 presents per capita receipts for IPEDA perkotaan/perdesaan for selected large and small cities. A complete listing of kotamadya receipts is given in Annex IV, Table 3.3. More important than real economic factors in determining yields appears to be the collection efficiency of the local authorities and the targets ("guidance") given by the central government each year. Targets are in theory computed as 80% of total assessments plus 50% of arrears and are usually just met. Receipts are generally increased by collecting the tax from more properties rather than raising the tax rate. There appears to be no incentive for local authorities to exceed targets by any substantial margin, even although the targets are often easily attained. In some cases targets may rise dramatically for no clear reason. 1/ There would seem to be a good case for encouraging more local responsibility in this regard.

Table 4.15: IPEDA RECEIPTS IN SELECTED CITIES
(PERKOTAAN/DESAAN ONLY: EXCLUDING PIII)

City	Province	1981/1982 (Revenues (Rp. per head)	Average real annual growth per head /a 1976/77 - 1981/82 (% per year)
Jakarta	DKI	1164	-0.9
Surabaya	E. Java	900	12.2
Bandung	W. Java	401	3.8
Semarang	C. Java	360	-7.1
Palembang	S. Sumatera	336	6.6
Ujung Pandang	S. Sulawesi	541	-0.3
Pontianak	W. Kalimantan	227	-11.0
Pekanbaru	Riau	436	14.4
Gorontalo	N. Sulawesi	303	-5.6
Mojokerto	E. Java	635	6.6
Sabang	Aceh	1222	10.4

/a Deflated by inflation of wholesale prices (excluding exports).
Source: Annex IV, Table 3.3.

1/ In one city visited by the mission, the kotamadya authorities were instructed (after the beginning of the financial year) to double IPEDA collections. This was achieved by mobilizing boy scouts and other semi-official groups to assist in collection.

4.26. The current rates of land and property taxation are low by international standards. In many countries the effective rate of taxation is about 1% of the market value of property rather than the 0.1% in Indonesia. 1/ A tenfold increase in the effective tax rate for IPEDA perkotaan/perdesaan would require a major sustained effort, but would not be an unreasonable target for, say, the end of REPELITA V. By the early 1990s receipts from urban IPEDA (Rp. 21 billion in 1981/82) could finance about a third of all new investments in urban services and could almost singlehandedly compensate for any declining relative contribution from the central government. Higher effective tax rates may also bring some subsidiary benefits such as restraining the growth in land prices, encouraging investment and discouraging speculation in idle land. 2/ 3/

4.27. A number of studies have explored the scope for increased property tax rates and increased collection efficiency. 4/ In addition to raising the basic 5% rate on the assessed rental value, recent studies have recommended raising the ratio of assessed value to market value (currently 60%), raising the ratio of rental value to assessed value (currently 6%), fully taxing residential property (instead of the current 50% exemption), abolishing the ceiling on assessed property values (which results in undertaxation of high-value commercial property) and reviewing market land data more frequently (generally IPEDA assessments do not keep pace with rising land values, particularly in high value and improved areas). Consideration is being given to adopting a number of changes on a pilot basis in Surabaya following a recent study 5/ which recommended the adoption of a new assessment system based upon market

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1/ In some countries it is much higher. For example, in Taiwan the land value tax is graduated from 1.5% to 7.0% of assessed value and in Jamaica from 1.0% to 4.5%.

2/ See D. Shoup: "Taxation and Public Ownership of Land," in Dunkerley (ed): "Urban Land Policy", World Bank/O.U.P., 1983.

3/ General property taxes may be supplemented by special measures to strengthen these effects. For example Taiwan and Chile have vacant land taxes to stimulate development in certain zones, and in Korea, speculative gains in land value are taxed.

4/ These studies include: Holland, Oldman and Lerche: "Jakarta Real Estate Tax Study," 1972; Lerche: "The Revenue Potential of the Land Tax for Urban Finance in Indonesia", Bulletin of Indonesia Economic Studies, 1975; Jeffries: "The Design and Implementation of a System of Market-Based Urban Property Valuation in Surabaya", December 1980; and many internal memoranda of the Department of Finance.

5/ Jeffries, ibid.

valuation of individual properties rather than the present classification system. The valuation system would be based on an analysis of sales data to establish land and building values. Improved mapping techniques would be introduced and site data would be computerised. Central business district properties would be professionally appraised, and a major effort would be made to improve land registration and monitor changes of ownership. 1/

4.28. Collection efficiency could also be improved by reducing the number of small taxpayers and concentrating collection efforts on improving collections from more affluent households and commercial property. Currently the majority of taxpayers contribute very little revenue; probably one third of all taxpayers fail to cover the average cost of collection. 2/ The average assessment in Jakarta in 1982 was Rp. 14,000 but 50% of all taxpayers were assessed less than Rp. 5000 (implying collections of less than Rp. 3500). For other major cities average assessments are about half of the level in Jakarta. Only a very few households are assessed in the middle and upper income categories. In Surabaya, for example, only 7% of households were required to pay taxes of more than Rp. 15,000 in 1982, although Surabaya has much middle-class housing and is one of the richest cities in the country. Collection costs tend to be higher in poorer areas, as often several visits must be made to households to ensure collection. Some consideration might therefore be given to exempting all households contributing less than say Rp. 2500 and redirecting efforts towards ensuring more accurate classification of middle and upper income properties.

4.29. Taxes on Vehicle Use. Owners of vehicles may pay taxes and charges to regional goverments in five ways - through an annual licence fee (SWP3D) 3/; a vehicle transfer fee (BBN) 4/; a wealth tax which includes vehicles (pajak rumahtangga); a provincial surcharge on gasoline sales; and through parking charges. The first four of these accrue to provincial governments and the last to kotamadyas. At present only the first two raise significant revenues. The third, the wealth tax is currently only collected in a few provinces (not including Jakarta); it probably costs more to collect then it raises, and it duplicates other taxes; it should probably be eliminated. The gasoline surcharge and parking fees currently raise little revenue but could have good potential for the future.

1/ Land registration would be encouraged through a special program (PRONA) and all marketing of properties would be regulated by licenced real estate agents.

2/ Data on collection costs are not available in any detail. However if the 10% collection fee is added to the 11% overhead charge (announced for overall IPEDA in 1981), the average collection charges were over Rp. 2000 per assessment in 1981.

3/ SWP3D: Sumbangan Wajib Pemeliharaan dan Pembangunan Prasarana Daerah (An obligatory contribution for the maintenance and development of regional infrastructure).

4/ BBN: Bea Balik Nama (A charge on ownership change).

4.30. The SWP3D and BBN taxes dominate the budget at the provincial level. Their combined annual revenue currently amounts to about Rp. 150 billion, equivalent to 80% of province-level tax receipts. The licence fee, which was raised in 1981/82 is equivalent to about 2-3% of the market value of the vehicle. 1/ The BBN is a transfer fee based on the assessed value of the vehicle at the time of sale. A rate of 10% is applied for the first transfer and a rate of 5% for subsequent transfers. Revenues from these taxes have been rising rapidly with increased vehicle ownership and can be expected to continue to form the backbone of the provincial balance sheet. It can be argued that DKI Jakarta benefits at the expense of other areas; up to 70% of all first-time transfers of vehicles throughout Indonesia take place in Jakarta, and about 19% of all vehicles in the country are registered in Jakarta. 2/ This is a complaint sometimes voiced by towns on the periphery of Jakarta but outside DKI borders, such as Bekasi and Tanggerang which must maintain roads for many vehicles with DKI licence plates, but receive little revenue from vehicle taxes. Currently government vehicles are exempt from these duties; it may be desirable to abolish this exemption, thus making government departments more aware of the economic costs of operating vehicles. In the same vein, license fees for trucks and buses, which are currently lower than those for cars, despite the fact that they contribute more to the deterioration of the road surface, should probably be raised to more closely reflect the cost of road maintenance.

4.31. A surcharge of Rp. 1.05 per liter is currently levied on gasoline, with revenues accruing to provincial authorities for road maintenance. At this low rate revenues are small; in 1980/81 only Rp. 4.8 billion was derived from this source. Over the longer run, however, this has a good potential and, along with vehicle taxes, could finance the entire road maintenance program. Of course in theory it makes no difference whether taxes on gasoline accrue to central or regional government 3/. However, experience indicates that there may be some advantage to allocating part of these revenues to the provincial authorities and of linking part of the tax to road improvements. Resistance to increased taxation is generally less wherever the tax more closely resembles a charge for a specific service. A surcharge of Rp. 10 per liter of gasoline could contribute an additional Rp. 40 billion to help finance roads.

1/ The annual fee on an average one-year-old car would therefore amount to Rp. 200,000 - Rp. 300,000.

2/ 34% of passenger cars are registered in Jakarta.

3/ Following the 60% increase in gasoline prices in January 1983 and the 27% devaluation in March, the economic rate of taxation on gasoline imposed by the central government is about 30%; a large subsidy (about 33%) still remains on diesel fuels.

4.32. Charges for parking are only collected in large cities and are generally set at Rp. 50, Rp. 100 or (in central Jakarta only) Rp. 200 for an indefinite stay. These charges added about Rp. 1 billion to Jakarta's revenues in 1980/81. It has been estimated that to maximize revenues in the largest cities in Indonesia, charges should be raised to Rp. 1,000 - Rp. 2,000, close to the level of charges in other busy international cities. 1/ A more modest increase is probably desirable in the short run, to say Rp. 500 for large city centers and Rp. 200 elsewhere.

4.33. As an alternative or complement to increase parking fees, it has been suggested that city governments might consider licencing vehicular access to city centers. Two recent studies 2/ have suggested that a scheme similar to that in Singapore, might be adopted. Vehicular access to central locations would be permitted only to those vehicles bearing stickers, which would be available on a yearly, monthly or daily basis. It has been estimated that if the fee were set at say Rp. 300,000 per year or Rp. 2,000 per day, a revenue of over Rp. 40 billion could be raised for the Jakarta treasury, equal to about 30% of DKI's own revenues. There are a number of difficulties associated with such a scheme, such as the need for adequate alternative routes for through traffic. The government is currently exploring the viability of the approach.

4.34. Other Local Taxes and Charges. There are a large number of other local taxes and charges, some of which have good scope for making a serious financial contribution, and others of which are insignificant and should probably be abolished. Most taxes at the kotamadya/kabupaten level 3/ fall into one of two categories: taxes on entertainment and recreation, and taxes on economic activity. In the former category are taxes on cinemas (pajak tontonan), radios, alcoholic beverages and dogs. In the latter category are taxes on hotels and restaurants (pajak pembangunan I), slaughterhouses, advertisements, and company registration. Taxes which don't fall into these categories include a tax on foreigners and a tax on non-motorized bicycles. Charges are collected at the province and at second tier levels of government. Provincial charges are made for weighbridges, vehicle fitness testing, river ferry and shipbuilding permits, provincial hospitals and for legal documents. Second tier charges are extremely numerous and of greatly varying importance in different authorities. They include charges for health services, markets, planning permits, gravel extraction, bus stations, toll roads, building inspection, citizens cards, brick manufacture, rice hulling permits, losmen licences and many others.

1/ Jabotabek Team: "Jakarta Finance and Implementation Report," Cipta Karya, 1981.

2/ Jabotabek Team: Report T/22, Cipta Karya 1981; Colin Buchanan and Partners: "Traffic Management and Road Network Development Study for DKI Jakarta", D.G. Land Communications, January 1983.

3/ Provincial taxes consist of the vehicle taxes and the household tax, which have already been discussed.

4.35. Receipts from local taxes and charges vary greatly by province and by city (Annex IV, Tables 3.5 and 3.6). For example second tier tax revenues in Bali and East Kalimantan averaged Rp. 1002 and Rp. 897 per head respectively in 1980/81, while at the other end of the scale receipts in Bengkulu, Central Java, and East and West Nusa Tenggara were under Rp. 100 per head. City tax receipts were equally diverse with 1980/81 per head levels (excluding Jakarta) ranging from Rp. 2,236 in Banda Aceh down to Rp. 223 in Kediri, with the other 48 kotamadya distributed fairly evenly throughout the range. Tax revenues in the kotamadya are consistently higher than in the kabupaten; in no kotamadya is the per head tax level lower than that of the second tier average in the province. The growth of local tax revenues also varies greatly by city, ranging (for the period 1976/77 to 1980/81) from almost 40% per year in Bengkulu to 5% in Gorontalo. The same diversity occurs in receipts from service charges. Per head figures in 1980/81 ranged from Rp. 3944 in Sukabumi to Rp. 416 in Palangka Raya. Growth rates ranged from 42% in Sawahlunto to 3% in Madiun.

4.36. In some cases these variations in tax and charge receipts are easily explained; for example the extremely high local tax revenues in Bali are due almost entirely to the tax on hotels and restaurants. But usually there is no clear explanation; variations in receipts per head and growth rates are generally uncorrelated with population size or growth, or with measures of economic development such as the level and growth of provincial gross domestic product.

4.37. Variations in revenues can be decomposed into three elements: variations in tax rates, taxable bases and collection efficiency. Differences in tax rates appear to be less important than the other factors; however data on local tax and charge rates are not available at the central level, so this conclusion is based upon a limited sample of local authorities. 1/ It is not clear how important are variations in the other two factors--taxable base and collection efficiency--in contributing to overall revenue disparities. Apart from the IPEDA tax, which has been analysed in a number of studies, local revenues have received little study. 2/ A deeper understanding in this area is essential in order to develop an improved framework for increasing local revenues. In this regard it would be particularly useful to undertake a study on the detailed financial and physical procedures involved in assessing, collecting and accounting for local revenues. In particular, there are three aspects to the measurement of collection that might be analysed: (a) the success in identification of potential tax payers and in making assessments; (b) the proportion of the amount assessed that is actually collected; and (c) the cost of collection (average and marginal) in relation to income realized. It is certain that room for improvement exists in each of these areas and that substantial variation exists among local governments, but little more can be concluded without further study. As a first step it may be desirable to

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1/ Indeed part of the difficulty in assessing the scope for increased local revenues is due to the lack of up-to-date data on local revenue for individual taxes and charges. Annex IV, Table 3 gives the most recent consolidated data (1978/79) for second tier tax revenues.

2/ Thus, for example, there appears to be no information on the extent to which the entertainments tax is enforced or how easy it is to evade the hotel or restaurant tax.

improve the collection of revenue data and introduce a system of revenue costing. Currently, revenue collection activities are not costed in regional accounts, so it is not clear which revenues are particularly expensive to collect. The introduction of such a system would probably make it quickly apparent that some taxes, e.g., on dogs, radios, non-motorized vehicles, alcoholic drinks, yield negative net revenues, and would provide guidance concerning which taxes and charges should be emphasized for further collection effort.

4.38. Although there are many uncertainties concerning local revenues, it is clear that per head receipts are low by international standards. A major increase in revenues may require the introduction of new taxes, as well as the improvement of collection efficiency on existing tax. One recent suggestion has been for the introduction of a new general tax on economic activity. Currently the "development tax" (pajak pembangunan I) taxes only restaurants and hotels. A new "pajak pembangunan II" could extend this to include retailing and manufacturing. There need be little competition with central government taxation since many or most of the potential tax payers for such a tax currently pay no central government income or corporation tax. A recent study of Surabaya has suggested that a modest rate of such a new tax could yield revenues sufficient to finance the bulk of new investments in urban services in the coming decade. 1/

Borrowing by Local Government

4.39. Borrowing by local authorities has been relatively unimportant. As Table 4.9 shows, borrowing has accounted on average for about 1% - 1.5% of local government spending in recent years. 2/ Loans to provincial governments are insignificant; loans to second tier governments account for about 2-3% of second tier spending; while loans to Jakarta have accounted for 4-7% of the capital city's total spending. Loans to local authorities can be divided into five broad categories:

(i) The Inpres Pasar program provides interest-free loans to second tier authorities for the construction or upgrading of markets, for the use of poorer traders. This is the most widespread of loan schemes available. By 1982, outstanding loans amounted to over Rp. 50 billion, equivalent to about Rp. 350 per head of total population.

(ii) Three types of loans are available for water supply projects. First the central government may make a "domestic" loan (RDI) to the local water authority (PDAM). Second the central government may make an interest-free loan to the local government for passing on as equity

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1/ Martin Page: "The Application of PPBS Concepts in an Indonesia Urban Environment for the Kotamadya Surabaya", D.G. PUOD, Dept. Dalam Negeri, 1982.

2/ There are no central statistics available on total levels of loan finance to local authorities. For the present exercise data was collected on individual types of loans from a variety of sources. While it is believed that figures given in Tables 4.9, 4.5 and Annex IV are reasonably accurate, it is possible that some loans have been missed or double counted. It is desirable that an effort be made to consolidate data on the indebtedness of individual local authorities.

to the PDAM. Finally foreign loans may be passed on to local authorities or PDAMs as loans (usually low interest or interest-free). 1/ By 1982, outstanding loans for water supply amounted to over Rp. 95 billion, equivalent to about Rp. 700 per head of total population.

(iii) Foreign loans for Kampung Improvement are sometimes passed on as loans to the local authorities. As with foreign loans for water supply on-lending terms and conditions vary, with funds sometimes passed to local authorities in the form of grants. By 1982, loans amounting to Rp. 44 billion had been made to Jakarta, and Rp. 23 billion to another 13 major cities.

(iv) The "Bum Ipeda" program provides interest-free loans to local authorities to finance development on the strength of expected increases in Ipeda yields. Second tier authorities in only 8 provinces have benefitted from this program, and total outstanding loans amounted to only Rp. 4 billion in 1982.

(v) Low interest (2.5% p.a.) loans are provided to provinces for passing on to the Regional Development Banks as equity.

4.40. As is evident from the above list, most loans to local authorities have been made to municipalities for the provision of urban services. Indeed, although loan finance plays a relatively insignificant overall role in local government finance, its role in urban services is substantial. If it is assumed that half of all foreign loans for water supply and KIP are onlent to local governments, then about one fifth of all investment in these activities are financed by local authority borrowing (see Table 4.5), although almost always at subsidized or zero interest rates. However in many instances, although the central government may itself borrow funds for urban investment, these are passed on in the form of a grant. Thus, for example, buses which are financed by foreign loans are given as grant to public bus companies.

4.41. Loans to local authorities vary greatly by province (Table 4.16 and Annex IV, Table 1.4) with no clear pattern emerging; allocations appear to be unrelated to total or urban population or to local resource availability. West Java's borrowing in the period 1976/77 - 1980/81 was about three times that of East and Central Java on both a total and a per capita basis; and South Sumatera local authorities borrowed ten times (on a per capita basis) the amount borrowed by North Sumatera. However, an analysis of kotamadya borrowing does indicate that the larger cities tend to borrow more (on a per capita basis) than do smaller cities (see e.g., Annex IV, Table 2.2).

1/ Sometimes foreign loans to the central government are passed on as grants to the PDAMs; this makes it difficult to measure total local liabilities from foreign sources.

Table 4.16: LOANS TO FIRST AND SECOND TIER LOCAL AUTHORITIES (EXCLUDING KIP) FOR SELECTED PROVINCES 1976/77 - 1980/81

	Total Loans (Rp. billion)	Total per Head (Rp.)
DKI Jakarta	20.6	3161
West Java	38.2	1390
East Java	14.9	511
North Sumatera	2.6	311
South Sumatera	15.8	3406
East Kalimantan	4.9	3988
Central Kalimantan	0.6	629
North Sulawesi	1.5	688
Bali	1.2	483

Source: Annex IV, Table 1.4.

4.42. It is desirable that richer local authorities should be increasingly required to finance a higher proportion of their development from loans rather than from DIP or grant finance. Jakarta and Bandung provide examples of this practice in the finance of water supply (Annex IV, Table 2.2). However, other relatively high-resource cities such as Balikpapan and Banda Aceh have received substantial DIP finance for water supply and have borrowed fairly little.

4.43. Lending to local authorities has four important advantages over grant finance. First, it encourages increased cost recovery for services. 1/ As Chapter 5 indicates, there is good scope for raising cost recovery in urban services, and in this regard it is appropriate that loans be made to municipalities for particular urban services. It is preferable if debt service payments are linked to charges for the services for which the loan was made. In some instances this already occurs (such as water supply, where loans are passed on directly to the PDAMs, which rely on water charges to service the debt). However in most cases loans are repaid by regional governments from general revenues 2/ which tends to reduce the benefits of borrowing on financial discipline. Second, the provision of loans rather than grants will, over time, tend to reduce the burden on the central government budget, as funds become available from loan repayments and from the banking system. Third,

/1 Indeed, without increased cost recovery and/or increased local taxation, there is little justification for increased loan finance.

/2 Often loan repayments are charged to the development budget, which differs from general accounting practice that debt service should be treated as a current account obligation and a first charge on current account revenues. So it is possible for example that debt service be financed from the general Inpres Dati I and Dati II development grants.

lending to local authorities provides an indication of relative needs and priorities (at least as perceived by the local councils (DPRDs) and thus encourages efficient allocation of resources. Finally, it provides an incentive to minimize costs, improve accounting standards, and maintain and operate the system efficiently.

4.44. Many, if not most, countries have established independent institutions for allocating loans to local authorities and managing the subsequent revolving fund from debt repayments. These municipal development financial intermediaries (MDFIs) may be in the form of banks, credit corporations, funds or loan boards, but they mostly have been established to bridge the gap between local authorities and the financial and banking system and to encourage a reduced dependence on central government funds. In Indonesia, the Regional Development Banks (RDBs) are authorized to lend to local authorities but, except for short-term liquidity loans, to provincial governments, seldom do. 1/ Consideration could be given either to increasing the role of the RDBs in lending to local authorities for specific investments or to establishing some form of Urban Development Fund (para. 3.78) at the national level for this purpose. A recent study 2/ of MDFIs suggests that these institutions have played a very important role in mobilizing and allocating loan funds in many countries, but that care must be taken in designing institutions and credit policies appropriate to local financial conditions and to the commitment of the local and central governments to increase local revenues. Table 4.17 illustrates that the types and sources of funding for these institutions varies greatly by country. In the early days of such a institution in Indonesia, the bulk of funds would probably have to come in the form of grants and loans from the central government and from foreign aid. As the capacity to service debt improves, interest rates might be raised from their current highly subsidized levels. As interest rise closer to free-market levels, it may be possible to mobilize private deposits, particularly from institutional savers such as pension funds and insurance companies.

4.45. Ideally, such an urban financial institution should be linked to the entire planning and budgetting process. Three-year rolling expenditure plans could be prepared at the kabupaten/kotamadya level. These would be appraised by the BAPPEDA and KANWILs at the provincial level. At the central level, a municipal development board consisting of relevant Directors General from the Departments of Home Affairs, Finance, Public Works, Communications, and BAPPENAS would review the proposals and authorize a financial package consisting of DIPs, INPRES funds and foreign and domestic loans. The loan part of these funds could be channelled through holding banks (perhaps the Regional Development Banks) to the local authorities. A revolving fund would grow at the central level so that government contributions could be gradually reduced. The existing IUPA Committee (para. 3.78) could be strengthened by adding a technical secretariat (drawing upon seconded staff from the various

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1/ The Regional Development Banks act as bankers to provincial governments and sometimes make bridging loans in the case where INPRES funds from the central government are delayed.

2/ L. Clarke: "Municipal Development Banks and Related Financial Intermediaries - Catalysts for Resource Mobilization and Development in LDCs"; World Bank memorandum; January 1982.

Table 4.17: MUNICIPAL DEVELOPMENT FINANCIAL INTERMEDIARIES (MDFIs) - TYPICAL SOURCES OF FINANCE

Types of Funding	Sources	Some Country Examples: Developing	Some Country Examples: Industrialized
1. Grants	(a) Central Governments	(a) Colombia, Costa Rica Guatemala, Honduras Kenya, Venezuela	
2. Loans	(a) Central Governments (b) International/External Agencies	(a) & Kenya, Tanzania (b) Kenya, Tanzania	(a) France, Spain, (b) United Kingdom
3. Share Capital Contributions	(a) Central Government (b) Municipalities (c) Investors	(a) Honduras (b) Israel	(a) Japan (b) Netherlands (c) France
4. Own Resources (Reserves or Revenues)	(a) Municipalities (voluntarily) (b) Municipalities (statutorily) (c) National Savings Banks	(a) Guatemala, Kenya, Niger (b) Honduras)	(a) Austria (b) France, Italy (c) France, Germany, Italy, Portugal
5. Deposits	(a) Private Institutions or Agencies (b) Postal Institutions or Agencies (c) Own Regular Deposits	(a) (b) (c) Niger, Thailand, Tanzania, Turkey	(a) Austria, Belgium (b) Italy
6. Securities	(a) Other Financial Institutions (b) Private Market	(a) Honduras	(a) Austria, Netherlands, Sweden (b) Belgium, Denmark, Japan, Netherlands
7. Pension or Related Social Security Funds	(a) Municipalities	(a) Brazil	(b) Denmark, Norway, Canada
8. Special Funds or Allocations	(a) Central Government	(a) Sudan, Guyana	(a) Norway
9. Special Tax	(a) Central Government	(a) Guatemala, Turkey Tanzania, Paraguay	

Source: L. Clarke, World Bank, 1982, Ibid.

Departments) to form the beginnings of an Urban Development Board. This suggested approach would take time to implement. At this stage, preparatory work is needed to (i) develop a consistent set of policies and procedures to allocate and determine the terms for grants and loans to local governments, and to operate a Municipal Development Fund, (ii) provide guidelines for local governments to develop multi-year investment and revenue programs, (iii) define the criteria and methods for provincial government (and central government for the weak provinces) to appraise the physical, financial and administrative aspects of the local programs submitted for funding, and (iv) provide a framework to coordinate the provision of external aid for urban development.

Chapter 5: COST RECOVERY FOR URBAN SERVICES

5.01. With a 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 is possible, recurrent expenditures should be recovered through user charges but that the initial capital investments should be provided to users as a grant. This policy has been based upon arguments of affordability and fairness. It has been doubted that the poor could bear the burden of full cost recovery and it has been considered unfair to charge poorer sections of the community for physical improvements in their living conditions, when more affluent neighbourhoods which perhaps received improvements several years earlier, were not required to pay for such improvements. Sometimes subsidies have been justified on "basic needs" grounds (water supply, sanitation) and sometimes on the grounds that there are "external" benefits to others by individuals using a service (e.g., public transportation, which alleviates congestion). At a time of relative abundance of financial resources these policies provided a means of spreading the benefits of the oil boom and were therefore in most cases entirely appropriate. In the present environment, however, continued high subsidization of services is likely to constrain the further expansion of services. Policy makers face the choice of providing subsidized services to a few, or extending the services to the rest of the population while recovering costs. This section reviews recent progress and explores, for selected urban services, options for raising levels of cost recovery further. The discussion is divided into five sections: water tariffs, charges for sanitation, charges for public transport, the scope for betterment taxes, and cost recovery for housing.

(i) Water Tariffs

5.02. The present policy of the Government with respect to cost recovery for water supply is that operating revenues should cover operation, maintenance and depreciation. This policy is not being fully implemented and in some cases cost recovery is well below this level. However, consideration is being given to increase cost recovery in light of the current budgetary difficulties and the major investment needs of the sector. In the mid-1970s DSE issued a Guideline for Tariff Structure which prescribed unit price ratios for various consumer groups and levels of consumption. The general principle has been that wasteful consumption of water should be discouraged by progressive tariffs. This results in a cross-subsidy from consumers of large quantities of water to small consumers. For house connections, tariffs per m^3 are based on the quantity of water consumed by the household. The guidelines are currently under review by Cipta Karya and the Department of Home Affairs; probable changes include a reduction in the monthly minimum consumption base for households from 15 to 10 m^3 (60 litres per capita per day), and an increase the in progressivity for consumption above the base. Table 5.1 shows the proposed unit price ratios for different categories and the contribution to total revenues that these categories might be expected to make in a typical PDAM. At present, ratios prescribed in the guidelines are not mandatory and individual PDAMs are free to adjust them, but consideration is being given to having a more rigid policy on this. Wide variation exists in practice, as is illustrated in Table 5.2. 1/ Average tariffs vary greatly due to both

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1/ The PDAMs included in the table are intended to be representative. They were not selected particularly to show a high degree of variation.

varying costs of production and distribution and to different terms and conditions attached to funds from central government and donors. Thus, for example, average tariffs in Samarinda are over four times those in Bandung, partly because of differences in topography and access to a suitable water source and partly to different financing packages. The degree to which tariff schedules are progressive also varies greatly. In some cities (Majene, Banyuwangi), unit charges are constant irrespective of the quantity consumed, while in other areas (Malang, Banyumas) unit charges for households consuming more than 30 m^3 per month are, as in most developing countries, about three times the charge for basic needs quantities. This is not meant to imply that connection charges or the level of progressivity should be standardized, but it might be useful for the government to specific a minimum level of progressivity, such as that illustrated in Table 5.1. Installation charges for house connections also vary by city and not according to any firm rule. Charges are generally in the range of Rp. 90,000 - Rp. 130,000 and usually exceed the actual costs of installation, sometimes by as much as 40%. This has tended to discourage house connections, resulting in low water sales, illegal connections and reduced revenues for the PDAMs. However, changes are being considered. For example, under a recent project, the government has agreed that the charge for connections would be based upon average actual costs, and that lower-income households would be permitted to pay over a period of three to five years.

Table 5.1: WATER TARIFF AND TYPICAL PDAM REVENUE STRUCTURE UNDER REVISED GUIDELINES

	Unit Price Ratio /1	Percent of Total Revenues /2
House Connections		
Less than 10 m^3/month	1.0	5.6
10 - 15 m^3/month	1.4	13.1
More than 15 m^3/month	2.0	43.1
Total House connections		61.8
Standpipes	0.8	11.3
Non-Residential		
Government	1.5	2.8
Commercial	2.0	6.7
Industrial	5.0	11.1
Social	1.2	6.3
Total Non-Residential		26.9
Total	1.6 /3	100.0

/1 Ratio of charge (per m^3) to minimum house connection charge. Based on Revised Guidelines for Tariff Structure (Cipta Karya and Dalam Negeri); draft 1983.

/2 Illustrative only; based on survey of eight cities (population 100,000 - 500,000) and 42 small towns in East Java. See World Bank: First East Java Water Supply Project -- Staff Appraisal Report, April 1983.

/3 This measures average to minimum tariff.

Table 5.2: WATER TARIFFS CHARGED BY SELECTED PDAMS
(Rp. per m^3; as of October 1982)

	House-connections			Standpipes	Industry
	0-15m^3	15-30m^3	More than 30m^3		
Kotamadya					
Malang (E. Java)	50	75	150	25	250
Samarinda (E.Kalimantan)	115	175	345	95	575
Jambi (Jambi)	80	120	235	65	390
Padang (W. Sumatera)	30	45	75	-	145
Bandung (W. Java)	25	35	45	25	150
Kabupaten					
Banyuwangi (E. Java)	40	40	40	25	80
Banyumas (C. Java)	40	60	120	20	200
Badung (Bali)	35	40	60	25	-
Majene (S. Sulawesi)	25	25	25	-	35
DKI Jakarta	40	80	80	60	250

Source: Cipta Karya.

5.03. There are two important questions that deserve attention in preparing the water supply plans and policies for REPELITA IV. First, is it desirable and feasible to raise further the overall level of cost recovery in the sector? As has already been noted, the medium term budgetary outlook facing the Government has deteriorated markedly since the water supply targets for the rest of the decade were drawn up in 1981. As a proportion of the government's development budget, allocation to water would have to increase about fourfold by the mid-1980s (from 1982 levels) at present cost recovery levels, if these targets are to be met. The viability of the investment program may therefore depend fundamentally on increased cost recovery. Table 5.3 presents the implications of various financing alternatives. Option I (recovery of operation and maintenance costs and depreciation of revalued fixed assets) corresponds to present government policy but would require its implementation in practice. Options II and III imply higher rates of cost recovery. Although the effects of these higher options are not dramatic immediately, they soon begin to make an important contribution to financing the overall investment program. For example, if funds were lent to PDAMs at a low 4% p.a. rate of interest, instead of being made available as grants or equity contributions, by the end of the decade debt repayments could be financing over a third of all new investments. Of course, although the effects are not immediate in the short term (because of the required grace conditions), it would be necessary to implement the system now in order to reap these medium-term advantages. The short-term benefits of such an approach might be that it would open up new financing channels; for example it would be possible to borrow funds from the banking system and thus to reduce the strain on the central government budget, and would therefore provide a greater capacity to subsidize the truly needy.

Table 5.3: COST RECOVERY OPTIONS FOR URBAN WATER SUPPLY INVESTMENT

Option I /1 : DEPRECIATION (REVALUED ASSETS).
Option II : 20 YEAR LOAN, 4% INTEREST
Option III : GRANTS FOR FIRST 30 LCD, THEREAFTER 20 YEAR LOAN, 6% INTEREST

	1985	1987	1989	1991
Cummulative Funds Recovered /2 (Rp. billion)				
Option I	1.7	18.8	62.3	146.8
Option II	7.8	56.0	161.1	345.8
Option III	6.2	44.4	12.8	274.5
Percent of Annual Investments which can be Financed by Cost Recovery				
Option I	1.3	5.2	8.4	17.4
Option II	5.8	13.6	19.9	37.0
Option III	4.6	10.8	15.8	29.3

/1 Each of these options assumes that O&M costs will also be recovered.
/2 Based on investment program described in Table 2.9.

Source: Bank Staff Estimates.

5.04. Care must be taken that any tariff increases do not unduly burden the poor. Evidence from income and expenditure surveys suggests that there is still good scope for increased water tariffs, particularly for water quantities above basic need levels. Experience from other countries as well as Indonesia indicates that consumers are willing to pay about 4% of their incomes for clean water on a regular basis, and up to about 7% when they are paying off debts for connection charges. Table 5.4 presents expenditure on water by different income groups for a number of cities around the world. It is evident that the proportion of income allocated for water is highly variable, depending on costs of production, the amount of new finance needed for investment, and the extent to which the authorities encourage cross--subsidization from high- to low-income groups. By way of comparison, data from a selection of cities and towns in East Java are included, under the assumption that water charges would cover all operation and maintenance costs plus depreciation. A footnote to the table explains the other assumptions in making the calculations. Row "A" shows the payments required during the period when connection charges are being amortized (over a five-year period). In row "B" it is assumed that consumers have paid off these capital charges. The tariff schedule is shown to be fairly progressive with middle-income consumers allocating about the same proportion of their income to water as low-income consumers. The ratio of the average per unit tariff to the minimum per unit tariff under the new guidelines is 1.58:1, which is about average for developing countries. 1/ Some consideration might be given to making the schedule even more progressive to place a greater burden on households consuming more than 20-30 m^3 per month. 2/ In addition to raising revenues this also tends to discourage the more affluent from consuming more than their fair share of available water. If it were decided that over the medium term a higher cost recovery level was desirable, it would be necessary to gradually raise real tariffs over the coming years. For example, Option II of Table 5.3 could be achieved by the end of REPELITA IV, by raising average real tariffs by about 5% a year until then. Given that real incomes should also be rising, this would not be an excessive burden. It could be facilitated by allowing longer pay-off periods for connection charges and by allocating a disproportionate amount of the increase on high consumption households.

5.05. Second, <u>what is the appropriate pricing policy for public standpipes</u>? The present government policy is that half of all beneficiaries of new investments should receive water from standpipes. This is a good and equitable policy, but there are currently two difficulties facing the program. First, the usual system whereby an intermediary is employed at the standpipe to sell the water and to ensure that wastage does not occur, inevitably results in very high charges to recipients. Table 5.4 shows how dramatically water costs can vary according to whether or not water is purchased through a vendor. 3/ For the poorest 20% (who are not able to afford house-connections), consumption of 30 LCD from a standpipe would cost

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1/ However because the <u>base</u> level tariff (on minimal quantities of water) is very low (highly subsidized) in Indonesia, the unit costs on larger quantities are substantially below the average for other countries.

2/ For example, households consuming more than 20 m^3 per month could be required to pay 4 times the unit cost of those households consuming basic needs levels.

3/ By "vendor" here we refer to the overseer (usually a woman) at the standpipe and not to the person who sells water from house to house. In the latter case the water is even more expensive.

Table 5.4: WATER CHARGES /1 AS A PERCENTAGE OF ESTIMATED INCOME FOR SELECTED CITIES

	Income Group				
	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Top 20%
Addis Ababa	9	8	8	6	2
Bogota	1	1	1	1	2
Bangkok	1	1	2	2	1
Kingston	2	3	6	4	1
Lima	5	2	1	1	1
Manila	9	2	2	2	1
Nairobi	7	6	6	4	2
Sao Paulo	5	2	3	3	1
East Java Cities /2					
House Connections A	-	4.5	4.1	3.6	3.3
B	1.1	1.5	1.9	2.1	2.3
Public Standpipes /3	13.0	7.1	5.2		

/1 Includes both consumption charges and amortization of installation charges. Part of the variation is explained by the fact that in some cities installation charges have been fully paid off.

/2 A: Includes amortization for installation charge.
B: After installation charges paid off.
Assumptions for calculations as folows: Consumption of water from bottom to top quintile respectively per household 4.7 m^3 (30 LCD), 10 m^3 (64 LCD), 15 m^3 (96 LCD), 20 m^3 (128 LCD), 30 m^3 (180 LCD). 5.2 persons per household. Unit charges as in Table 5.1, with first 10 m^3 at Rp. 50 per m^3. Installation charge of Rp. 1,000 per month (Rp. 60,000 repayable over 5 years, zero interest). Monthly incomes from bottom to top quintiles (mid-point) respectively Rp. 18,000, Rp. 33,000, Rp. 45,000, Rp. 65,000, Rp.100,000, at mid-1982 prices.

/3 Figures based on Rp. 10 per 20 liter bucket; consumption of 4.7 m^3 per family (30 LCD) irrespective of income level.

Source: Non-Indonesian cities from: Klaus Ringskog, "Pragmatic Water Planning"; Economic Development Institute, World Bank, 1979 (Data for mid-late 1970s from surveys). East Java Cities: from surveys undertaken in preparation for First East Java Water Supply Project. See World Bank's Staff Appraisal Report, April 1983, Annex 14. This survey data is consistent with national data from SUSENAS surveys.

only slightly over 1% of income if they were able to purchase it at the official tariff. Generally however water is purchased at the standpipe from the vendor for Rp. 10-15 per "ember" (20 liter bucket). At say Rp. 10 per ember, a poor family would have to spend about 10-15% of income to purchase 30 LCD for each family member. In these circumstances demand is understandably low. Standpipes are usually assumed to service 200 people but a casual survey suggests that in many cases the number served is very much less than this. 1/ In addition many standpipes are locked up for much of the day; a customer therefore must either find the overseer to ask for the key or wait until "opening time". Several new approaches are being explored to overcome these problems. In some areas standpipes have been made the responsibility of groups of (twelve to fifteen) families, who "buy into" the scheme and are given exclusive rights of use. Since this group has responsibility for paying all bills to the PDAM, there is no need for an intermediary or vendor. 2/ This approach is also being successfully employed for MCKs (para. 5.07). However, this approach is only equitable if the standpipe program is large so that everybody who wants to join such a scheme may do so.

1/ This observation is based on a visit to six cities. It was not found possible to obtain data on water consumption from standpipes at a more aggregate level. There are also other indications that consumption may be lower than official targets. For example revenues from 30 LCD for 200 people at Rp. 10 per ember would be Rp. 3,000. Of this amount only Rp. 360 is paid to the PDAM (Rp. 40 per m^3 and assumption of 33% wastage at the tap), leaving Rp. 2,640 for the vendor. This would appear excessive, particularly since the vendor is selected by the community and that it is a part-time job. Even an average of Rp. 1,000 per day for the vendor would appear to be on the high side, suggesting a maximum clientele of about 80 per day. In some cities the returns to intermediaries is apparently high. For example, in Cirebon, the PDAM charge for water to standpipes was recently raised to Rp. 150 per m^3 (nearly four times the national average) on the grounds that since Rp. 10 per ember was being charged by the vendors, part of the return should accrue to the PDAM! A survey of standpipe use would be helpful.

2/ This approach is currently working well in Bali and in a few other areas. Names of families with access to the standpipe are usually painted on a board. This system may even permit some recovery of capital costs, since per unit tariffs are usually less then one tenth of those from a vendor. Another approach which is increasing in popularity, particularly in parts of Sumatera, is for local residents in close proximity to standpipes to "rent" access to the standpipes for periods during the day using plastic hoses into their houses.

5.06. Another problem associated with the program is that currently there is no incentive for PDAMs to construct standpipes. Charges for house connections are usually set at above cost and are therefore highly profitable, while public standpipes are a pure drain on financial resources. Even the unit water rates are lower for standpipes and repair costs more frequent. As a result the official targets are generally not being met 1/ (para. 2.10). In one city visited the number of standpipes was actually being reduced. In discussions with PDAM staff a common argument was that as long as demand for house connections remained higher than the construction capacity, there appeared no good reason to build standpipes. In many cities therefore, it is the more affluent members of the community who benefit most from the subsidized water supply program. The problem here is neither the fault of Cipta Karya, nor of the PDAMs, both of which are operating according to their respective terms of reference. The problem usually begins when the initial "project", which provides for water production and primary distribution, is complete and when the PDAM is given responsibility for expanding the final distribution network. On the one hand PDAMs are required to operate as commercial enterprises, and on the other to function as promoters of social welfare, even though funds are not always available for this purpose. Some further thought could be given to linking central government grants especially with the provision of public standpipes. For example, production and distribution could be financed with loan funds, and the construction of standpipes by grants.

(ii) Charges for Sanitation

5.07. Human Waste. The Government is involved in providing human waste disposal facilities in three ways (para. 2.24). Under the pit latrine program (Department of Health), beneficiaries are required to contribute actively to investment costs through the provision of labor, in addition to taking responsibility for maintaining latrines after construction. This arrangement appears to work well; the burden on the government budget is not excessive and a mass replication of the program is feasible from a financial standpoint. This section therefore concentrates on cost recovery under the other government interventions--the MCK program and sewerage systems.

5.08. Under the MCK program, the initial investment is invariably provided to the community as a grant except for the land which must be donated. Charges are generally levied according to use and are designed to cover costs of cleaning, minor repairs and (sometimes) the cost of emptying the pits when they are full. The system of collection is usually similar to that for public standpipes and suffers from the same drawbacks. Charges are necessarily high to pay an adequate wage to the collector/cleaner and facilities are consequently often underutilized. Few children are willing to pay Rp. 10 to use the MCK, when they can defecate at no cost in the river. Benefits, in the

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1/ There are some exceptions, notably Surabaya where there are now over a thousand standpipes in operation.

form of improved health, from the sanitary disposal of human waste accrue to the community as a whole, not to the individual user only. Where such "externalities" occur it is desirable to keep user charges low to encourage use. At the same time, however, cost recovery is desirable if the required facilities are to be constructed and financed in the coming years. One solution to this dilemma is to charge a fixed monthly fee and to allow unlimited use within that period. This approach is now being employed in a number of schemes around the country. So far, the experience seems to indicate that this approach works much better for the "MCK Keluarga" than for the larger multiple-unit communal facilities. It has already been noted (para. 2.27) that these smaller one-unit facilities with access limited to 5-10 families are generally more popular than the larger, less personal, communal MCKs. It now appears that cost recovery may also be easier. This is important because without recovery of most of the capital costs in addition to O&M costs, any major replication of the "MCK Keluarga" approach throughout the country would either be impossible to finance (since the number of the small units required to cover the entire unserviced urban population would be huge 1/) or unfair (since some would be excluded from this subsidized service).

5.09. A one-unit "MCK Keluarga" including water connection, serving 5-7 households can be constructed for Rp. 350,000 - Rp. 600,000 (1982 prices). 2/ If the unit is connected to the PDAM system the cost will generally be at the top end of this range, while if the water source is from a spring or from a hand pump, it will fall at the bottom of this range. A charge of Rp. 2,000 per family per month would be sufficient to pay for water charges to the PDAM, for emptying the pit annually, and for repaying an interest free loan for the investment cost in four years. For poorer families without house connections to the PDAM system, this monthly charge would finance not only the human waste disposal and washing facilities but also water supply. It would therefore not impose an undue burden on any households, except the very poorest, for whom more traditional MCKs could be provided. Indeed, for those previously purchasing water from public standpipes via a vendor, this system would actually involve a smaller monthly outlay. 3/

1/ In order to provide access to sanitation to the entire 1990 urban population, about 1 million "MCK Keluarga" would have to be constructed (in addition to existing sanitation facilities).

2/ There appear to no economies of scale in MCK construction; larger MCKs do not cost less per unit. Thus for example a recent study in the Jabotabek area found that a four-unit MCK cost about Rp. 2.5 billion to construct.

3/ For households in the poorest three quintiles the Rp. 2,000 per month charge would be equivalent to about 11%, 6% and 4% of monthly household income respectively. These figures can be compared with those for water from public standpipes (Table 5.4).

5.10. The coverage of sewerage systems is very limited in Indonesia (para. 2.24). However in the context of the upcoming Jakarta sewerage project, cost recovery options are being studied. The government has established guidelines that sewerage charges will be set at levels so that revenues will cover operation and maintenance costs and meet depreciation or debt service requirements, whichever is greater. This level of cost recovery will require substantial cross-subsidization, with commercial customers paying twice as much as industrial customers who in turn pay three times as much per person as residential households. 1/ The average household charge would be about Rp. 800 per month (in 1982 prices), representing an estimated 1.4% of the household income of a family at the 50th percentile in the income distribution. This is well within limits that have been found to be affordable in other countries. However, it must be acknowledged that the area in which the Jakarta sewerage project is to be undertaken contains a higher proportion of commercial properties than the average for the city and consequently the high level of cross-subsidization may not be repeated in future projects. A study has been commissioned to consider issues of cost recovery in detail. Questions of how the charges will be collected will also be addressed; alternatives include adding a surcharge on water rates (which has the drawback than many beneficiaries are not linked to the PDAM scheme), adding a surcharge to IPEDA collections, betterment taxes (see para. 5.18), or through direct charges.

5.11. Solid Waste. Responsibility for house-to-house collection of garbage (sampah) lies with the lurah. Charges are levied and are designed to cover labor costs of collection and transport to the transfer station or to the local dump site. On average Rp. 50 - Rp. 200 is collected per month from each household benefitting from the system. Capital investments, such as transfer stations and even the hand-carts for house-to-house collections have increasingly been provided as grant from the central and local governments. A major expansion of the solid waste program is required and the government is encouraging "in-kampung" solutions to bring down costs. A gradual increase in charges could make an important contribution to refinancing the expanded program. In addition there is good scope for increased cross-subsidy from high income residential and commercial (markets) areas to poorer areas.

(iii) Charges for Public Transportation

5.12. Over 99% of trips undertaken on urban public transportation in Indonesia are by road vehicles (see Chapter 2). Since most of these trips are by bus (city bus, micro-bus, or opelet/microlet), this section concentrates on cost recovery through bus charges. Fares are controlled for each type of bus; most fares are subsidized, although only the government-owned PPD and P.N. Damri are explicitly subsidized. In January 1983, bus fares on large city buses were doubled from Rp. 50 (which had been unchanged since 1977) to Rp. 100. Microlet fares were raised from Rp. 100 to Rp. 125. Although these increases made a significant contribution to raising cost recovery, and to improving the profitability of the private sector, substantial subsidies remain.

1/ Households benefitting indirectly from the sewerage service through the collection of wastes through open drains, would not be required to pay.

5.13. Bus transport is currently subsidized in four ways. First, the central government provides buses free to the two publicly-owned bus companies (PPD for Jakarta, P.N. Damri for other cities). This has amounted to an average of about Rp. 30 billion a year for the last three years. Second, PPD, the Jakarta bus company receives an "operating" subsidy to cover operating losses which have risen from Rp. 1.8 billion in 1979 to Rp. 4.3 billion in 1982. 1/ P.N. Damri makes smaller economic losses. Third, diesel fuel is sold at about 33% below international price, adding an additional economic subsidy on urban public transport estimated at about Rp. 8 billion in 1981. 2/ As a result of domestic oil price increases in early 1982 and 1983, this subsidy is expected to fall to about Rp. 6.5 billion in 1983. The domestic price of diesel is currently (mid-1983) about 60% of its international level. 3/ Finally public transport is assisted by generous access to subsidized credit through the state banking system.

5.14. There are two main arguments in favor of subsidized public transport in cities. First, low prices for journeys by public transport can help to discourage private (particularly automobile) transport, and congestion can consequently be alleviated. There is some merit for this argument where public transport is a comfortable and viable alternative to private means and where the decision between private and public transport is marginal. However in Indonesia where only the relatively affluent can afford automobiles, it is highly unlikely that many car drivers would use buses if the fare were Rp. 50 rather than Rp. 100. It is probable that there may be some substitution between travel by motorcycle and public transport, but this is also probably quite limited. Anyway, it is now well established that subsidies on public transport are very much an inferior solution to the problem of congestion. 4/ Other approaches, such as traffic restraint programs (paras. 2.63 and 4.33) are generally much more effective.

5.15. Second, low and subsidized bus fares can enable the poor to use public transportation, which they might otherwise not be able to afford. In developing countries, poor people generally spend between 1% - 10% of their incomes on transportation. Any substantial increase in tariffs, it is argued, would place an undue burden on these people. There is no doubt that large

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1/ If depreciation allowances were included losses would be about twice these levels.

2/ In these calculations it is assumed that 4,500 buses were in use in 1981.

3/ See World Bank: "Indonesia - Selected Issues of Energy Pricing Policies," draft, May 1983, for a detailed discussion of fuel consumption in the transport sector.

4/ See e.g., Johannes Linn: "Cities in the Developing World - Policies for their Equitable and Efficient growth", World Bank/O.U.P. 1983, p. 112.

increases in bus fares can significantly reduce real incomes of the lower-income groups. However the relevent question here is why should bus rides be subsidized rather than other goods and services which also account for a large proportion of lower- and middle-income groups' expenditure bundles? Urban transportation is only one of many "basic needs"; should they all be equally subsidized? More importantly, to the extent that capital grants are only given to nationalized companies and these companies only operate in the largest cities, urban dwellers are being subsidized at the expense of rural dwellers; in Chapter 1 it was shown that almost all indicators suggest that urban dwellers are generally better off than their rural cousins, and it is surely not desirable to make urban areas even more attractive to potential migrants from the countryside.

5.16. There is nothing inherently wrong with holding down bus fares below cost levels; at a time of resource surplus, subsidies can be usefully directed to help the poor. But they often have side effects which are unintended and undesirable. First, controlled bus fares are often not fully compensated by subsidies from the government. This leads to poor service and, in the case of private bus companies, may squeeze profitability and result in bankruptcy. Controlled fares in Jakarta have resulted in bankruptcies of eight of the nine private city bus companies which have now been taken over by the government-owned PPD. It has been demonstrated in many countries that when competition from the private sector is reduced or eliminated, the quality of bus-service falls. 1/ The elimination of private city bus companies in Jakarta has already occurred and there is a worrying sign that this may happen in a number of other cities also. 2/ Second, by controlling bus fares at one fixed level the government prevents bus companies from providing different levels of service for different income groups. In particular, price-fixing prevents the development of higher-service "white-collar" bus lines which charge a higher fare and which could become a reasonably comfortable alternative to the automobile. These high service buses are effectively prohibited in Jakarta, although the recent introduction of "Patas" express buses at a higher fare has been an encouraging development.

5.17. In general, the provision of public transportation below cost, whether public or private, tends to increase transport use and exerts additional pressures on resources; it causes people to live in more outlying areas which accentuates urban sprawl; and it leads to pressure to build more and higher standards of roads. Over the long run, it is desirable that

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1/ See e.g., "Ownership and Efficiency in Urban Buses": World Bank Staff Working Paper No. 371, February 1980; and "Costs and Scale of Bus Services", World Bank Staff Working Paper No. 325, April 1979.

2/ In 1983, the government-owned P.N. Damri took over bus lines in three additional cities--Ujung Pandang, Padang and Palembang.

subsidies be reduced further; this would require the further raising of bus fares for public companies and could be accompanied by some decontrol of private fares. The January 1983 doubling of fares was an important, if painful, contribution in this regard. It resulted in declining real incomes of 5%-10% for some poor people. It is therefore probably not desirable to have further significant real fare increases in the near term. However the recent increase was only necessary because fares had been falling in real terms for the previous five years; it is therefore essential that nominal fares are increased at least in line with inflation. Over the longer term real fares could be raised to levels consistent with full cost recovery.

(iv) Betterment Taxes

5.18. When an area is "improved" through investments in road surfacing, drainage, footpaths, water mains and the like, it is often not possible to allocate benefits precisely to each household by charging specific tariffs for each new service; the benefits from such upgrading programs are "public". However, to the extent that as a result of these investments land prices rise, it is entirely appropriate to tax away part of the windfall gain to landowners. In many parts of the world these betterment or "valorization" taxes are able to recoup most or all of the investment costs. Unlike general property taxes, which as noted earlier have often been disappointing, the performance of local betterment levies for specific projects has been impressive. 1/ Betterment taxes may be in the form of specific charges whereby the cost of betterment is roughly allocated to households, or in the form of an excess-value surcharge whereby increases in the value of land in excess of the increase in unimproved land are taxed. 2/

1/ See for example, Doebele, Grimes and Linn: "Participation of Beneficiaries in Financing Urban Services", Land Economics 55 (February 1979), for an analysis of betterment levies in Bogota, Colombia; and Macon and Merino Manon "Betterment Levies in Latin America: Nature, Experience and Recommendations", Washington D.C.: Inter-American Development Bank, Economic and Social Development Department (1975).

2/ It is commonly observed that, following the introduction of infrastructural services, the value of land rises more than the cost of investment in the infrastructure. This means it is possible to recoup all of the costs of investment (through e.g., excess value levies) and still allow the landowner to enjoy part of the windfall gain in landprices. See e.g., D. Shoup: "Intervention through Property Taxation and Public Ownership"; and A. Walters, "The Value of Land", both in H. Dunkerley (ed), "Urban Land Policy - Issues and Opportunities," World Bank/O.U.P., 1983.

5.19. Both of these elements are incorporated in Jakarta's "pajak khusus" (special tax) which is the only example of an active betterment levy in Indonesia. 1/ It is currently being extended by the Jakarta city government and it provides a potentially significant way of financing new urban infrastructure. 2/ The legislative basis for the pajak khusus is a 1972 regulation 3/ permitting city authorities to recover 60% of the cost of new and improved infrastructure (including roads, bridges, drainage, water supply, electricity, etc.) in those areas designated by the Governor. The special tax consists of two parts. Part I is in the form of a fixed charge whereby 60% of the cost of improvement is divided between the beneficiaries according to the length of road frontage, with properties directly fronting onto the road paying more than those only indirectly connected, in the ratio 7:3. (Buildings and land used for social and government purposes are excluded.) The tax is calculated and announced to taxpayers before the improvements are made and must be paid within three years (in twelve quarterly installments) after completion of the work. In addition to financial penalties for late payment, no building permit will be granted until the tax has been paid. Part II of the pajak khusus is an explicit tax on "excessive" increases in land prices due to betterment. If the value of a parcel of land increases by more than 300% within two years of the completion of the works, a charge of 50% is charged on all increases above the 300% price increase. This tax is collected on change of ownership.

5.20. Part I of the pajak khusus has been fairly successful in recovering costs in the small number of areas of Jakarta where it has been approved. For example, in Tebet (the first area where the tax was collected) 47% of the cost of betterment was collected between 1974 and 1980, equivalent to 79% of the potential collection. The average assessment was Rp. 110,000 per plot and most (about 83%) was collected in the first three years. These figures are fairly representative of subsequent efforts; for more recent periods the average assessments have risen to Rp. 200,000 to Rp. 300,000, and in some cases collection rates of 90-95% have been achieved. However the total amount collected remains extremely small. In the seven-year period 1974/75 - 1980/81, only Rp. 750 million was collected. Since then receipts have risen, reaching Rp. 192 million in 1982/83 and are budgeted for Rp. 330 million in 1983/84. Part II of the pajak khusus has apparently never been implemented.

1/ It is not clear whether other cities are planning to institute similar taxes, but one city at least (Padang) has expressed an interest.

2/ For an analysis of pajak khusus and recommendations see, Jabotabek Metropolitan Development Planning Team: "Jakarta Finance and Implementation Report", Report I/8; Cipta Karya, June 1981.

3/ Peraturan Daerah No. 1, 8th March 1972.

5.21. The pajak khusus tax is well-designed in principle and it is highly desirable that it should be expanded both within Jakarta and to other cities. However there appear to be a number of practical problems which tend to reduce its effectiveness and may discourage other municipalities from adopting a similar approach. These problems include late notification of the tax department that an area will be improved and consequent late notification of landholders, difficulties in tracing landholders due to unregistered land transactions, and a lack of data on land values and a lack of staff to collect this data.

5.22. A number of modifications might be instituted, which could significantly raise collections. Publicity in areas scheduled for betterment could be increased; sign boards should make clear what the tax is, who is responsible for paying and that no land may be transferred without payment. Work on the infrastructure should not begin until all landowners have been notified; Dinas Agraria could assist the tax department in tracing landholders. Dept. Dalam Negeri could delegate the power to approve individual schemes for pajak khusus to the Governor of DKI.

5.23. Currently the tax is only designed to recover 60% of costs. Given that some taxes are not collected and that three years is allowed for tax payments (without adding interest charges), the pajak khusus collects at most 50% of any improvements. Consideration should be given to raising this substantially. It is sometimes argued that this would place an unfair burden on the poorer beneficiaries. While further study should be undertaken on this question, particularly if the tax were to be extended to other cities, the evidence from Jakarta suggests that as long as standards are not set too high, construction takes place in stages and the major burden is placed on middle- and upper-income beneficiaries, betterment levies are easily affordable. Table 5.5 summarises the analysis of the Jabotabek team in this regard. Lot sizes 1/ and frontages are assumed for each income level and the cost allocated accordingly. Higher-income groups are able to afford better access to facilities, but this tends to occur even when no betterment charges are levied as land prices rise faster near access ways.

5.24. The excess-value surcharge (Part II of pajak khusus) also provides good potential for raising cost recovery although some modifications are necessary. The great attraction of this form of tax is that it is not a burden on anybody, however poor. Since it is only levied at the time of land sale, it effectively pays for itself, with funds from the sale being used to pay the tax. Table 5.6 indicates that the effect of investment in infrastructure on land prices is substantial; the introduction of KIP to an existing poorly served kampung results in roughly a doubling of land prices, while the construction of an access road may cause prices of adjacent land to triple. However, the table suggests that a quadrupling of prices in two years

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1/ In many parts of the city minimum lot sizes are set by law and are often much too high (e.g., 90 m2 in South Jakarta). This reduces affordability of both land and betterment taxes.

Table 5.5: AFFORDABILITY OF COST RECOVERY FOR AREA IMPROVEMENTS
(1980 prices and incomes)

	Income Group Owning Land				
	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Top 20%
Average Monthly Household Income /1	20,000	42,500	87,500	150,000	300,000
Lot size (m2)	20	45	90	130	250
Frontage (m)	4	5	7.5	10	12.5
Service Received /2	FII	FII	FIII	AI	AII
Cost of Construction (Rp. 000/m2)	4.2	4.2	13.4	14.4	24.3
Monthly Payment (Rp./household) /3					
60% recovery	140	175	834	1200	2532
100% recovery	233	292	1396	2000	4200
Percent of Income					
60% recovery	0.7	0.4	1.0	0.8	0.8
100% recovery	1.2	0.7	1.6	1.3	1.4

/1 As would be expected these income figures (derived from survey in Jabotabek) are significantly higher for middle- and upper-income levels than those in Table 5.4 (E. Java small towns), although they are about the same at the lower end of the scale.

/2 Service Levels:

	FII.	FIII.	AI.	AII.
Access	Within 40m of sealed footpath.	Within 20m of sealed footpath.	Same as FII plus within 250m of access road.	Sames as FII plus within 125m of access road.

Drainage All dwellings within 20m of side-drained footpath.

Water All new household within 125m of public standpipe.

Sanitation Technical assistance for household construction of toilets, and dinas provision of garbage collection.

/3 Cost recovery to take place over 3 years; taxes allocated according to frontage.

Source: Jabotabek Metropolitan Development Plan: Report T/29 on "Proposed Guided Land Development Program", Cipta Karya, December 1980.

Table 5.6: EFFECT OF BETTERMENT ON LAND PRICES
(Land prices on periphery of Jakarta in Mid-1980)

Type of Land /1	Rp. per m2
Sawah	4,000
On dirt footpath	5,000 - 6,000
In KIP area	11,000 - 12,000
On Access Road	16,000 - 18,000
On Distributor Road	18,000 - 25,000
On Arterial Road	25,000 - 40,000

/1 Based on survey of land prices at periphery of Jakarta; All land at roughly the same distance from the center; it is only the infrastructure that distinguishes different types of land.

Source: Jabotabek Team, Report T/29, December 1980.

(the minimum required before the tax is levied) is unlikely. It may therefore be preferable to lower this threshold to, say, 200% and to extend the period to three to five years. In addition, to avoid double taxation for betterment, landowners should be permitted to deduct taxes already paid under the pajak khusus (part I) from the 50% excess value surcharge.

5.25. On both economic and social grounds it is desirable that betterment taxes be extended. It has been estimated that all costs of the Guided Land Development Program (with the exception of arterial roads) could be recovered through these levies (see para. 2.80). From an equity standpoint, betterment charges permit a redistribution of income and can prevent some of the regressive income-distributional effects of betterment. As already noted, the effects on land prices of public investments can be substantial; currently upper-income landowners not only enjoy the improved facilities, but can make substantial gains when selling the land. Large landowners therefore benefit much more than small landowners; this is particularly true in Indonesian cities where rich and poor homes tend to be mixed together much more than in most countries so that it is very difficult to direct upgrading programs specifically towards the poor. Betterment taxes can prevent these disproportionate gains from accruing to the better off. In addition, to the extent that charges are levied for betterment, land prices will stay lower, with consequent social and economic advantages.

(v) Cost Recovery for Housing

5.26. The provision of housing was discussed in Chapter 2 (paras. 2.66-2.80). Given that the private sector is certain to play the central role in the construction of housing, it was argued that a central question for government policy was how to support the private sector. By far the most important support required by potential houseowners is access to long-term mortgage credit. The mortgage market remains small in Indonesia. Even with the impressive expansion in lending planned for Bank Tabungan Negara (BTN) for REPELITA IV, only about one-fifth of new housebuyers in urban areas will have access to the formal mortgage market. But it is not clear that under the present pattern of finance, whereby mortgages are highly subsidized, even this can be achieved. Although intended to benefit the poor, experience in other countries and in Indonesia suggests that subsidies actually hurt many lower- and middle-income families by limiting their access to credit. Because it is expensive to provide subsidies, credit has to be limited and it is usually the case that, wherever credit is rationed, it is the upper-income groups and those with good contacts who find their way to the front of the queue.

5.27. Interest Rates on Mortgages. The funds used by BTN to finance public (PERUMNAS) housing are obtained from yearly budgetary allocations (PMP funds at 0% interest from the Department of Finance), while the rest of BTN's mortgage lending is financed largely by 3% liquidity credits from Bank Indonesia and to a much lesser extent (about 10% of total resources for privately developed units) from Tabanas savings mobilized through the post office network. The low cost of its funds has allowed BTN to maintain low mortgage rates (5-9% for PERUMNAS units and 9% for non-PERUMNAS units). The magnitude of subsidies implied by this system of housing finance is very large. During the period 1976-83, the direct budgetary subsidy for PERUMNAS units was Rp. 120 billion, and the interest rate subsidy for non-PERUMNAS units was estimated at more than Rp. 150 billion (equal to more than one-third of the amount lent for these units). Moreover, the distribution of subsidies was

weighted towards non-PERUMNAS units, which benefitted from more than half of the total subsidies. Since more than 80% of these units are affordable only by families earning at least Rp. 180,000 per month (the top 20% of the income distribution), most of the subsidies have clearly not been received by low-income families.

5.28. BTN's lending rates need to be increased substantially (to a range of say 12-18%) in order to reduce the large and misdirected subsidies implied by current rates, and to enable BTN to mobilize the resources required for an expanded housing program in REPELITA IV. The recommended higher lending rates need not significantly reduce the affordability of housing for lower-income families, as can be seen in Table 5.7. Families at the 20th percentile of the Jakarta income distribution, earning approximately Rp. 50,000 per month, could still afford units priced at Rp. 1 million if they devoted 20% of their income to housing and made a down payment of 10%. If PERUMNAS could not build a housing unit at that price, beneficiaries could have it built privately or the government could provide more effective, targeted subsidies to the lowest-income families which would make up the difference. 1/

5.29. In view of current macro-economic constraints and the large magnitude of resources required to finance the REPELITA IV housing programs, BTN will have to mobilize a significant proportion of its funds from sources other than the budget or Central Bank liquidity credits. However, mobilizing funds from alternative sources, such as institutional investors and individual savings, would raise BTN's average cost of funds sharply and would require that BTN raise its lending rates to more realistic levels. It is not yet clear whether BTN can offer the attractive yields and security required to mobilize these resources, but possible new sources of funds for housing include: (a) domestic capital market resources or institutional investors such as insurance companies and pension funds; and (b) increased local savings mobilization, either through existing Tabanas accounts or new saving instruments such as "saving-for-housing" schemes. The latter could be marketed through banks with large branch networks and would guarantee a mortgage loan at the end of a specified period in which savings would be deposited in a special account (with penalties for early withdrawal). Experience in other countries indicates that saving-for-housing schemes can generate a considerable amount of additional resources, both from individual savers and community groups or savings cooperatives. Finally, the resources required to finance the REPELITA IV program could be reduced by raising the presently very low down payment requirements, particularly for higher-priced units. For example, down payments could be raised from the current 5-10% level to 10-30% depending on the price of the unit.

1/ Urban families in the bottom 20% of the income distribution could not afford to buy a house at these suggested interest rates, but they currently do not have access to the current higher subsidized system anyway.

Table 5.7: SUGGESTED MORTGAGE POLICY FOR BTN AND IMPLICATIONS FOR AFFORDABILITY

PERCENTILE ON INCOME DISTRIBUTION	AVG. FAMILY INCOME (Rp./Month) a/	MORTGAGE * TYPE	% INCOME SPENT ON HOUSING	MORTGAGE AFFORDABLE (Rp. MILLIONS)	APPROX. HOUSE PRICE AFFORDABLE (Rp. MILLIONS)
20 %	52,000	A	20 %	0.99	1.10
30 %	66,000	A	20 %	1.25	1.40
40 %	81,000	A	20 %	1.54	1.70
50 %	99,000	A	25 %	2.35	2.60
60 %	121,000	B	25 %	2.30	2.90
70 %	148,000	B	25 %	2.81	3.50
80 %	190,000	C	30 %	3.69	5.25
90 %	280,000	C	30 %	5.44	7.75

* MORTGAGE TYPE	DOWN PAYMENT	INTEREST RATE	LOAN PERIOD
A	10 %	12 %	25 years
B	20 %	15 %	20 years
C	30 %	18 %	20 years

a/ In Jakarta.

Note: Income figures are based on estimated end-1983 levels and prices. These data are therefore much higher than those presented in Table 5.5, which are based on 1980 prices and income levels.

Source: World Bank Housing Sector Mission, November 1983.

5.30. Institutional Issues in the Mortgage Market. If BTN is increasingly to enter the commercial financial markets for funds it will be necessary for it to gain the confidence of investors and savers by improving its institutional performance. BTN has already made good progress in improving the operation of its branches and in the introduction of automated systems. However, serious administrative and financial problems persist, in both its savings and lending operations. It is suggested that BTN take measures urgently to: (a) reduce arrears, (b) computerize its operations, (c) refine its project appraisal practices, and (d) improve financial management and accounting systems to permit an unqualified audit. All of these will probably require significant organizational and staffing changes as well as policy decisions. In the absence of these measures to improve BTN's institutional performance, it will be difficult for it to attract and manage the resources for the REPELITA IV housing program. One of the key operational weaknesses of BTN is the high and increasing level of arrears in loan repayments. Measures are needed to prevent new arrears and recover outstanding arrears. There is also a need for effective mortgage legislation to provide the legal underpinning for BTN's operations and give both BTN and its debtors a clear picture of their obligations and sanctions.

5.31. BTN's processing of mortgage loans for beneficiaries of PERUMNAS projects is presently rather slow. In order to accelerate mortgage processing (and hence PERUMNAS sales) consideration must be given to (a) the need to combine applications and coordinate procedures for house allocation and mortgage processing; (b) the need to establish pre-occupancy saving programs and give priority to those applicants who meet other criteria and also have collected down payments (i.e., do not require a preliminary sale or PPJB period); (c) the need to process mortgages on the basis of prices announced by PERUMNAS well in advance of project completion; (d) the need to accelerate land titling and registration to protect both the debtor and BTN and release to PERUMNAS the amounts withheld for this purpose; and (e) appraisal of PERUMNAS projects based on commonly-agreed criteria.

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