REPUBLIC OF INDONESIA

NATIONAL REPORT FOR

HABITAT II

MAIN DOCUMENT

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National Committee for Habitat II
Jalan Kebonsirih 31, Jakarta, Indonesia

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Annex :

ABBREVIATIONS AND ACRONYMS

AFTA	Asean Free Trade Area
BKPN/BKP4N	National Housing Policy Board
BPS	Central Bureau of Statistics
BTN	State Savings and Loan Bank
Cipta Karya	Directorate General of Human Settlements, Ministry of Public Works
GBHN	General Guidelines for National Development
GERBANGKERTOSUSILA	Greater Surabaya area to include five neigbouring local governments
GOI	Government of Indonesia
IUIDP	Integrated Urban Infrastructure Development Programme
JABOTABEK	Greater Jakarta Area to include three neigbouring local governments
KASIBA	Large scale land development
KREDIT TRIGUNA	Credit for land puchse, house construction and economic venture (three use)
KIP	Kampung Improvement Project
KLH	State Minister for Population and Environment (pre-1993 Cabinet)
KPR	Home Ownership Loan Programme
LISIBA	Medium scale land development
MLH	State Minister for the Environment (post-1993 Cabinet change)
NUDS	National Urban Development Strategy
P2LDT	Rural Housing Improvement Scheme
PDAM	Local Government Water Enterprise
Perumnas	National Urban Development Corporation
PJP	Long Term Development Plan
PLN	State Owned Electric Company
REPELITA	National Five-Year Development Plan
TAPERNAS	National Housing Saving Fund
TKPP	Coordination Team for Urban Development
RSDK	Rehabilitaion for poor area

Summary

This report highlights the Shelter and Settlement condition and plan Tk. I Indonesia to the conference on Habitat II in Istambul 1996. It includes changes that have taken place in Indonesia since the implementation of consecutive Five Year Development Plans or *Repelita* that has achieved considerable progress in meeting the nations social and economic development goals includes to shelter and settlements. Since the Habitat Conference in Vancouver, Indonesia has aligned its housing and human settlements policy to the Vancouver Declaration. As Indonesia continues to make economic gains, standards for living conditions and housing in urban settlements will continue to increase, not necessarily without problems or constraints.

The Changing Environment for Shelter and Settlements

On 30 November 1995 President Soeharto of Indonesia inaugurated the completion of the construction of over 240,000 units of various types of low cost housing and flats built since April 1994 (the sixth Five Year Plan) in all 27 provinces of Indonesia. This equal the performance of the last Five Year Plan and can only be reached due to the fact that Indonesia put housing development at high priority since it gained its independence fifty years ago. However, consistent and systematic construction of low cost housing was only effective by implemented after housing institutions were established (1974) and sustained economic growth was maintained. This only proved that a strong link exist between housing and economic development that further leads to high urban growth and urbanization which now showed a global character.

One factor that has contributed to an overall increase in well being for Indonesians is the successful reduction in total population growth rates over the past two decades, from a 2.4% annual average in the 1970s to a 2.2% yearly average during the late 1980s and 1.7% in the 1990s. Despite the achievement, however, urbanization is increasing rapidly as urban areas become the centres of growth with enhanced employment opportunities. Over 34% of the population now live in urban areas, and the urban growth rate for the past decade has proceeded at an annual rate of 5.4%. Not long after the turn of the millennium half of the population in Indonesia is expected to live in urban areas.

Changes in the physical and economic environment have impacted shelter conditions both positively and negatively. Indonesians enjoy larger living spaces in their homes and are more likely to have better access to physical infrastructure and services than twenty years ago. Higher per capita incomes have resulted in greater investment in household construction and amenities. The informal housing supply system has been able to provide the majority with shelter, and the Government has been able to increase spending for the provision of public housing to cover shortfalls. It has also been able to afford more public spending on the construction of physical infrastructure such as water supply, roads, sanitation, and waste disposal. The Government has demonstrated its commitment to an improved urban environment by consistently allocating approximately 40% of the total development budget for this kind of spending. On the other hand, they also more directly experience the ramifications of an increasingly polluted environment.

The Institutional and Regulatory Framework

To meet the shelter and physical infrastructure needs created by changing demographics of the country, Indonesia has established a maturing regulatory framework and an evolving administrative structure. Changes over the past two decades include the development of an urban policy strategy, and institutional changes such as the establishment of a State Ministry of Housing and a Ministry of Population and Environment; now *State Ministry for the Environment*

and State Housing of Population. A national lending institute was established nearly twenty years ago, with a variety of modifications made in its structure and functions in the intervening period.

A broader institutional change that will bring urban management more to the local level is the Government's intention to press forward with the decentralisation of infrastructure planning, management, and financing. The Government is committed to strengthening the capacity of local governments to manage infrastructure financing and to lessen decision-making dependency of local governments on central government ministries and agencies. While this commitment has been a conspicuous aspect of national policy since 1974, the shift of decision making power is occurring slowly. During the late 1980s, locally collected revenues increased by about 10% per year, a change that required local governments to take more responsibility for accountable financial management. To this end, the Ministry of Finance has been providing technical support to local governments to improve financial management, has also established a special lending account, the Regional Development Account (RDA), for making loans available to local governments specifically to support infrastructure development. This year (1995) Indonesia is launching a pilot program in which 26 selected local governments (Level II) exercise greater autonomy over their regions on a two-year trial basis.

Evolving National Policies and Plans for Shelter and Infrastructure

Perhaps the most accurate record of the Government's evolving approach to shelter and urban infrastructure issues is the succession of Five Year Development Plans (*Repelita*), which document policies and set goals and objectives of national development activities for each five-year period since April 1969. The report will also review *Repelita* I-V, beginning shortly before the first Habitat Conference, and ending with the most recent Repelita. Over that period, one continuing theme of the Government's development strategy has involved the Integrated Urban Infrastructure Development Programme (IUIDP); now a holistic Integrated Urban Development Programme (IUDP), which has developed plans for infrastructure investment packages on a city-by-city basis. An integrated approach to address urban infrastructure needs has been evolving since the second Repelita, but can be discussed in terms of urban development "generations" since Repelita I (1974-1979). The current program combines the efforts of the Ministry of Public Works, National Development Planning Agency, Ministry of Finance, and the Ministry of Home Affairs into a urban development approach that attempts to prepare local governments for a greater role in the management of urban physical environments.

Selected Government Programs

Indonesia has implemented a number of highly successful programs related to improved shelter and urban infrastructure, including the internationally recognised Kampung Improvement Program (KIP). A more recent housing program, known as Social Rehabilitation of Poor Areas (*RSDK*), has been implemented by the Ministry of Social Affairs, in connection with activities supporting the annual observance of National Social Solidarity Day (*HKSN*). *RSDK* relies heavily on community participation, and has already benefited over 3.3. million people. Background information on these and other Government efforts is detailed in the report, along with descriptions of a variety of other successful programmes.

National Plan of Action

The goal to achieve adequate shelter for all and a sustained settlement development in an urbanizing world will only be reached through series of objectives. Decent housing for all, especially for the low-income group should be directed towards the fulfilment of a secure,

healthy, environmentally acceptable, socially and economically integrated housing, through enabling all parties involved. Strategies should ensure accelerated delivery of adequate and affordable housing for all, including programmes such as sites and services and low-cost housing. It also need to promote housing development through urban renewal and improvement programmes; resettlement for displaced population; apply partnership in housing development by government, private sector and the community; as well as apply and expand community-based housing development.

The effort to achieve sustainable settlement development, is among other formulated in the Urban Policy Action Plan (UPAP) that outlines national goals and policies of urban development for the second long-term development plan (1993-2018). As outlined the goal of sustainable human settlements development in an urbanizing world will be achieved through series of short-term objectives, that includes accountable autonomy; improved capacities of local government in managing human settlement development; expansion of participation and partnerships of government, private sector and the community in human settlements development; provide safe, healthy, green, balanced and socially-integrated settlements; increase employment opportunities for all, particularly the low-income, vulnerable and disadvantaged groups; sustainable spatial and land-use development; safe, convenient, affordable and sustainable transportation system; support settlements that promote regional and national economic development; efficient and effective settlements management, and many more.

International Cooperation and Assistance

A substantial amount of external assistance and financing for public investment in settlements and housing development has so far been provided with positive result. Future assistance by international and multi-national agencies will be directed specifically to strategic programmes that accelerate the achievements of objectives in settlement and housing developments as outlined in section C. Cooperation and assistance at international level among others include institutional and capacity building, funding, expertise, training, equipment and the combination of these. It will also be directed to support the establishment and dissemination of urban and housing programmes to local government and communities, especially out side Java; accelerate the decentralisation of urban and housing development and management to local government as well as accelerate partnership with the private sector and the communities in accordance to local needs and potentials; and to carry out innovative pilot projects.

"We shall not be able to build a complete Indonesian being, we shall not be able to enjoy spiritual and material well-being, we shall not be able to improve the quality of life, unless the problem of human settlement and shelter can be fundamentally overcome."

President Soeharto, 1987, Addressing the Human Settlements International Seminar

Part A: Introduction

A.1 The process

To prepare the Indonesia's National Report for Habitat II, a technical team was set up consisting of members drawn from a wide range of institutions, including representatives from related public sectors, the private sector, institutions of higher learning NGOs, etc.. The technical team act mainly as a steering committee responsible to the National Committee for Habitat II. Further, a working team was established to prepare the material of the report, consisting mainly of members from universities and NGOs in the disciplines of housing and urban development. In the process of preparation, two seminars with a number central government officials NGO, university communities, private sector by mayors and city government officials were organised to review the results of the working team and provide further inputs to enrich the final result. Finally, when the draft report was ready, it was discussed by the National Committee and the National Housing Board. After their approval, the final report was produced and forwarded to UNCHS-Habitat in Nairobi (see appendix for the overall time schedule). .

A.2 The participants

To meet the need to participate in the Habitat II Conference in Istanbul Turkey, four teams were set up. The main team is the National Committee for Habitat II consisting of members of the bureaucracy, parliament, community leaders, the private sector, institutions of higher learning and NGOs (see appendix 1). As has been mentioned above, a technical team was set up with the main task of overseeing the preparation of the report (steering committee). Another team is responsible for putting together the material of the report, and a separate team to select best practice cases throughout the country (see appendix 2). As can be seen, some of the members overlapped in different committees or teams. For attending the conference, a team of delegates will be set up consisting mainly of members of the National Committee. Most of the members have a wide understanding of the issues and possess long experience in housing development with and for the people.

It is important to note that two separate meetings attended by local government leaders have been organised, attended by Mayors and other leading local government staff.

The first meeting was to discuss the first part of the report, namely the existing conditions. One month later a second meeting was held to discuss the Plan of Action and international co-operation for further inputs and agreement to support the future implementation of the plan. Inputs from both meetings have been incorporated into the report. Finally, before the report was finalised to be sent to UNCHS Nairobi, the draft report was presented and discussed by the Committte National for Habitat II for their views and comments. Many other informal meetings were held involving as many stakeholders as possible, including community representatives.Nevertheless, it is not possible to cover all interest groups from a country of more than 17,000 islands with about 200 million population.

Part B: Assessment and priorities

B.1 The broad setting

On 30 November 1995 President Soeharto of Indonesia inaugurated the completion of the construction of over 240,000 units of "very low cost" housing (US $ 2200-3000), "low cost" housing (US$ 4000-5000), and substantial numbers of low cost flats built since April 1994 (the begining of the sixth Five Year Plan) in all 27 provinces of Indonesia. Also 350,000 unit of very low cost transmigration houses (US $ 1165) have been built. This achievement equals the total performance of the entire fifth Five Year Plan and has only been attained because Indonesia has consistently put housing development at a high priority since it gained independence fifty years ago. However, consistent and systematic supply of low cost housing has only been effectively implemented since housing institutions were established (1974) and sustained economic growth achieved. This again proves that a strong link exist between housing and economic development leading to high urban growth and urbanization, a global phenomenon which is increasing rapidly.

The United Nations indicate that urbanization in Asia will continue to accelerate, leading to a transfer of large number of rural population to urban areas. In 1970 the urban population in Asia was about 23% of the total population, and increased tremendously to almost 35% in 1990. During this period the urban population in Asia increased 4.1% per year, contrasting with only 2.9% for the world. If no fundamental changes in the Indonesian urban systems are introduced, the unprecedented growth will create extraordinarily large cities. In fact, it is estimated that many Asian cities will exceed a population of 50 million by 2020, whereas the total urban population will have reached 2,649 million or 56% of Asia's population.

The links between the urban economy and global systems of markets for capitals and commodities has in turn affected the internal structure and physical form of the cities and labour market. The internal structure of large cities is clearly marked by a growing segmentation of housing, land use, and the labour market. The main physical outcome is a sharp increase in space production that includes vertical and horizontal expansion, and also renewal of old city areas. The process has also created externalities, notably congestion and pollution, generating social costs that have to be shouldered by the public including the poor. In addition, the urban restructuring has caused social tensions: first, the expansion of business space into traditional urban residential areas has resulted in direct conflicts with inner city areas. Second, the skyrocketing of land prices has caused a break-up of urban residents all over the cities.

Global economic restructuring tends to widen the imbalances in concentration of economic activities between large cities on the one hand and smaller urban centres and rural areas on the other. Large cities that have better infrastructures and social amenities are obviously more attractive locations for private investors to expand their businesses. Some observers have even noticed that the socio-economic links between large cities and their hinterland and smaller urban centres are increasingly weakening, whereas those between large cities within the global networks of urban centres, such as Singapore, Hongkong, Tokyo, and Seoul, are substantially intensified.

In terms of physical structure, urban growth in many Southeast Asian countries has recently been characterised by the emergence of fast-growing urban regions and corridors connecting large cities; strong rural-urban linkages; and a mixture of urban and rural socio-economic patterns. Traditional agricultural activities are now located side by side with industrial estates, new towns, and even golf courses. These patterns of development have resulted in a growing intensity of rural-urban linkages and are blurring traditional urban-rural distinctions, especially in high density areas such as the northern coastal area of Java.

The current patterns of urban growth in Southeast Asian countries are to a large extent also reflected in Indonesia. The urban growth in Indonesia is highly marked by spatial imbalances between growth of large urban centres, such as *Jabotabek, Gerbangkertosusila,* Bandung, Semarang, and Medan on the one hand, and smaller urban centres on the other. Currently about 15% of Indonesia's Gross Domestic Product (GDP) is produced in Jabotabek, the largest urban concentration in Indonesia, which nonetheless has only about 8% of the national population. In fact, this region is the most attractive area for domestic and foreign investment due to its better infrastructures, high concentration of and access to mass markets, and high access to the decision makers.

Approved investment from 1967 to 1995, not including oil and gas, showed that almost 11% and 17% of the domestic and foreign investments respectively in Indonesia have been located in Jakarta and its surrounding area. The respective figures for West Java, the adjacent Province, were around 35% and 29%. However, the investment in this area are mostly located in the *Botabek* (Bogor, Tangerang and Bekasi) area immediately around Jakarta. And recently interest has extended to Serang and Karawang, so the outer areas of *Jabotabek* are increasing as well. This has made the *Jabotabek* region grow even faster, especially during the last decade. To some extent the phenomenon has also been taking place in *Gerbangkertosusila (Surabaya Metropolitan Region)*, Bandung Raya, Semarang Metropolitan Area, and *Mebidang* (Medan Metropolitan Region). It should be pointed out that the recent economic growth in many large cities have been triggered by the deregulation policies launched by the government since the mid 80's to stimulate sounder economic growth.

Jabotabek's development has in turn attracted people from other regions, notably from West Java, Central Java, and Sumatera, to come to *Jabotabek*, especially in the peripheral areas of this region, i.e. Tangerang and Bekasi, where most industrial activities are located, causing rapid population growth in these areas. This situation has exacerbated problems of under employment and deteriorating housing conditions in the cities, as employment opportunities and housing provision cannot keep up with the demand.

Over the last two decades, unparalleled economic growth has also caused several other problems. The growth has combined with a number of other factors, including rapid urbanization and rising real incomes, transformed the Indonesian housing market. Fundamental to Indonesia's quality of living conditions is the economic status of its people. Twenty-five years ago, Indonesia was one of the world's poorest countries with a per capita income of only US$ 50. Since then, it has achieved an average GDP growth of nearly 7 % per year; while per capita income increased at about 4.5 %, reaching US$ 884 in 1994. During the oil-boom years of the 1970s, Indonesia's development strategy emphasised channelling oil revenues into increasing agricultural output and developing physical and social infrastructure. The economy grew nearly 8 % per year during those years.

In the mid-1980s, external shocks rocked the economy --oil prices collapsed, international interest rates rose, and the US dollar depreciated. During 1983-88, the impacts of these shocks is estimated to have cost Indonesia about 7-8 % of its GDP in income loss. To reorient the economy away from its dependence on oil, Indonesia began to promote the private sector and encourage a more outward-oriented economic structure. Structural reforms also included fiscal and monetary restraint to re-establish macro economic stability. The economy recovered from the effects of the shocks, and growth averaged 7 % during 1988-91. Deregulation in the 1980s encouraged private investment. The private sector responded by contributing 70 % or more of GDP during the 1983-91 period.

However, in 1989-90, the domestic economy overheated, causing accelerating inflation. Stabilisation measures were imposed, and these had the anticipated outcome. Recent adjustments in the economy include the dramatic reduction in the non-oil trade deficit, a slowing of inflation, and the elimination of subsidies for most fuel products. The continued diversification of the economy is demonstrated by the growing contribution that manufacturing makes to national GDP. In 1983 it contributed nearly 13 % of GDP; in 1993 up to 22.3 %. The oil and gas sector contributed only 9.6 % in 1993, compared to about 21 % in 1983.

Between 1970 and 1990, the population of Indonesia rose from 120 million to nearly 180 million, an increase of 50 %. During this same period, the number of households rose from 24.5 million to nearly 40 million, an increase of 62 %. According to the 1990 Census the urban population was about 55.4 million, accounted for 31% of the total population. The annual growth rate of urban population during 1980-1990 was 5.36 %. A projection made by the Institute of Demography at the University of Indonesia showed that urban population in Indonesia will reach 116.5 million and 140.3 million which constitute approximately 50% and 55% of the total population by the years 2010 and 2020 respectively.

During the 1980s, urban incomes grew faster than the national average GNP per capita. The proportion of urban residents with expenditures at or below the absolute poverty line decreased from approximately 60 % in the late sixties to 29 % in 1980 to about 17 % in 1990. Now it is estimated to be less than 13 % (1993) and hopefully it will reach 10 % after the year 2000. Several elements contributed to this reduction, including substantial investment in economic and social infrastructure.

Indonesia's urban areas are considered as the "engines of growth" -- for industry, as well as higher education, capital investment, and other critical areas essential for economic development. This means that the major factor driving housing demand, household formation, has been growing at a faster rate than the general population. Another factor contributing to changing housing market conditions has been the nation's rapidly expanding urban population, which is the result of an increase in manufacturing jobs in urban areas, among other factors.

B.2 Current Condition

Three main issues of macro urban development need to be addressed to deal with current conditions. First, the gap in terms of economic growth between large and smaller urban centres and housing quality, that will tend to widen in the future. One of the tasks of urban and housing development policies is how to cope with this expanding gap. Second, growth of large cities seem to be inevitable. It means that another main task of urban development policies is the ability to manage the high population and socio-economic growth in cities. This includes the provision of urban infrastructures and housing, which

should involve participation of all concerned parties including central and local government, private sectors and communities. Third, another policy area that should explicitly be outlined is urban employment generation, especially for the lower income groups. It should also be noted that effort to ease congestion in over crowded area, idel and potential land have gradually been developed as transmigration area.

Growth of cities

The period 1971 - 1990 showed that the distribution of cities in Indonesia was heading towards an integrated and dispersed urban system. Development of cities in Indonesia tended to create mega-urban areas. Some examples of mega-urban areas in Indonesia are *Jabotabek*, Medan-Lubuk Pakam-Binjai-Stabat-Tebing Tinggi, Bandung-Cimahi-Lembang-Banjaran-Majalaya, Semarang-Kendal-Demak-Ungaran- Salatiga, *Gerbangkertosusila*, Banjarmasin and its regency, just to quote some recent examples.

Problems of urban development can be distinguished into macro and micro problems, such as: tendency towards the formation of a "primate city" (especially in Java) although in lesser degree this has lessened the function of big cities as catalysts for regional development. Small cities that grow around the central city are mostly not self sufficient; they suffer deficiencies in urban infrastructure and services urban transportation problems, environmental degradation, slum areas, industrial pollution and inefficiency in urban land use as well as poor access to housing for new migrants.

In general, economic growth is concentrated in several urban areas which have better environments for industrial activities, such as the availability of reliable power, telecommunications, water supply and other public utilities, banking and credit institutions, intra- and inter-urban transportation and human resources. As a result, although economic growth is increasing, its spread is inequitable. Furthermore, disparity between rural and urban, among regions, and increased poverty are emerging.

If monthly expenditure is used as an indicator of community welfare, it shows that the urban population is relatively better-off. Although the share of low income groups in the percentage of monthly expenditure increased between 1980 and 1990, the distribution of monthly expenditure in urban areas was unequal compared to ural areas. Economic disparities between urban and rural areas, in turn, influenced the growth of urban population. Although the growth rate of the urban population is higher than the national average some Indonesian cities like Medan, Jakarta and Surabaya were far below the national urban population growth rate.

Urban development in Indonesia can fulfil only some of the growing population's needs. In 1993 only 14.71% of total urban households were served by clean water; 55.29% by electricity and 2.14% by telecommunications network. Compare to other urban services, the availability of electricity is better, particularly in the cities of Medan (93.81%), Bandung (97.32%), Semarang (91.79%) and Banjarmasin (98.40%). Telecommunication services only reach 2.14% of the population; in large cities the percentages exceed at least to six times. Lack of urban infrastructure and services will have a greater effect on low income groups, as they have weak financial capability to fulfil their needs.

Land tenancy and rights of land ownership are not evenly distributed. This creates a feeling of insecurity for people, social conflict, and stimulates poverty in some urban areas. Urbanization pressure and its global economic impact are bringing about a shift in urban land's function from social to commercial. Land has become a potential speculative commodity. Changes in urban land use are becoming more intensive and difficult to

manage. Even in buffer or border areas development of real estates, industrial estates and large scale settlements (new town) has grown rapidly.

High land prices, particularly in strategic urban locations, and limited land availability for housing encourage the growth of informal shelter in urban areas. On the other hand, high income groups usually have several houses with large plot areas that in turn causes inefficienct use of land. Disparity in economic growth as the result of the concentration of economic activities (industry and service) in urban areas has increased urbanization. The urban informal sector has become the obvious choice of jobs for many unskilled migrants. Those that cannot enter the informal sector, due to many restriction imposed by city government, become unemployed.

The informal sector in urban areas has an important role in providing employment compared to the formal sector. In 1993, 43.61% of all employees in urban areas worked in the informal sector. High levels of unemployment and the widening gap among groups in urban population has caused many social problems, such as increased urban crime and poverty.

The growth of the industrial sector in major urban centres has helped push up Indonesia's urban growth rate. Population and industrial growth create a concentration of various forms of pollution created by human and commercial activities, which threatens to lower the quality of human life and destroy the natural resources which many economic activities are based on. Urban environmental degradation is increasingly being recognised as one of the serious side effects of Indonesia's economic development.

Household waste is the main source of surface water contamination. For water in Jakarta, domestic sludge creates a pollution BOD load of 152 tons/day. Lack of adequate sanitation facilities is another primary cause of faecal contamination of water supplies. Recent census shows that only about 48% of all Indonesians use private or shared toilet facilities; the remainder use alternative solutions such as pit latrines, etc. Between 15 and 40 percent of all urban solid waste is not collected, and not all collected waste is disposed of in a safe or sanitary way.

In Medan, Jakarta, and Bandung, a portion of the uncollected wastes is burned (85%, 71.94% and 92.22% respectively), and less than 25% of land is used as "informal" dump sites. Waste disposal problems will be exacerbated both by continued population growth and higher per capita income lifestyles that tend to produce more waste as incomes increase. In Jakarta, prevailing trends indicate that waste generation is growing by 6 %. Future growth in Surabaya has been estimated at 5 percent a year.

Industrial pollution tends to concentrate in Indonesia's urban areas. With continued industrial growth, pollution loads will likewise continue to increase substantially. Recent monitoring of the discharge of large industries indicates that industrial pollution constitutes from 25% to 50% of the total pollution load in different rivers in Java. Ground water also tends to be polluted in urban areas, where water tables are also dropping and salt water intrusion is affecting aquifers in coastal areas.

Emissions inventories conducted on three major cities (1988) indicate that Jakarta's industrial sector emissions contain approximately15% particulate, 16% nitrogen oxides, and 63% sulphur oxides loading. In Surabaya, the industrial sector's share of these pollutants was about 28%, 43% and 88%, respectively. Bandung recordings revealed pollutant shares at 20% for particulate, 29% NOx and 71% SOx. Precise levels of toxic and hazardous substances disposed of are difficult to establish. Evidently, quantities of toxic and

hazardous waste are disposed of in uncontrolled landfills, dumped in rivers along with other industrial wastes, and in some cases, spread to agricultural areas by irrigation water and wind.

The World Bank estimates that the environmental costs of air and water pollution are $1 billion per year in Jakarta. Jakarta also suffers significant losses (up to $26 million) each year due to floods. Another cost of water pollution is that an estimated 1% of Jakarta's GDP is needed just to boil drinking water. Although incomes are rising in urban areas, this does not reflect real incomes that allow for congestion and environmental conditions that influence health and well being. Traffic congestion could cause losses to communities, indicated by travelling time between home and work.

Many of the rural poor who have migrated to urban areas have only changed their status to become urban poor without any significant improvement in their welfare. This has resulted in the increase in the extent of urban slums and environmental degradation, reductions in basic urban infrastructure services, and limited employment opportunities. Environmental improvement and facilities provision for the urban poor is not easy, as due to their low economic potential they need subsidy. Meanwhile the financial ability to provide subsidy, especially by local government, is limited. As a result, some of the slums have not been adequately served by urban services.

Indonesia, on the other hand, has been able to increase access to various infrastructures and services. For example, from 1981 to 1992 access to electricity has increased from 46.7 % to 89.29% for urban areas and 5.6% to 35.24% for rural areas, similarly access to piped/pumped water has increased from 38.6% to 54.44% for urban areas and 4.4% to 12.26% for rural areas (World Bank). Other improvements and problems can be seen in the following key issues.

Shelter

The housing indicators of Indonesia in 1993 did show that the average housing in Indonesia was in favourable condition. The average house per person reached to over 14 sqm and each house was occupied by 1.08 households. Owner-occupied housing also reached record levels. Services and infrastructure served more housing, including the poor, due to extensive implementation of the Kampung Improvement Programme (KIP). However, the lowest income group still faces many problems, including the substandard situations mentioned above and hazards to health and safety.

So far, the percentage of direct Government investment in housing provision remains low. In urban areas, housing provided by the government meets a small percentage of total housing needs. About 85% of the existing housing stock is still provided by the private and community sector. The community hardly has the opportunity for support, nor easy access to the resources needed.

A lack of planning has contributed to abnormally high density housing in some kampungs, as well as environmental problems such as over-use of aquifers acting as sources for ground water and wells. In general large cities such as Jakarta and Medan have smaller percentages of authorised housing stock. This situation can be related to the imbalance between urban planning and the rate of housing construction.

Land has an important role in determining housing cost. Land prices in urban areas are expensive. In the urban fringe, land prices vary depending on whether the land has been developed or not. Housing costs in the formal sector have risen by 153% between 1980 and 1990 (slightly higher than the general inflation rate for the same time period, which is about

133%). Differences in the price of housing can be caused by differences in land prices from one location to another.

The size of both the dwelling and the land it occupies may reflect the condition of housing. In urban Indonesia, the median floor space is 14.4 sqm/capita. In general, the type of dwelling unit is single with less than 5 rooms. Based on data from six cities, the average floor space per capita in Jakarta is the highest than other cities reaching 15.04 m^2 per capita However, the extreem between the largest to the smallest is also wider for Jakarta than any other cities.

The inability of low income communities and the ever increasing land prices in urban areas as a result of the increased need for commercial space in commercial areas and increased land speculation, have led to the growth of more slum housing, particularly on public land and marginal areas (river banks or next to railroad tracks), or slum kampungs with unsuitable housing and environment conditions.

Low income communities generally have little access to decent housing. So far there exists few loans for housing improvement or construction by informal communities and the low income group with the monthly income between Rp. 50,000 and Rp. 200,000. However, to lessen the problem, the government has implemented several programs in order to improve housing supply, including infrastructure programs.

The Programme of urban housing development as a part of the national housing programme was initiated in Repelita I with research on construction and locally available material; the construction of 1,039 pilot urban low cost housing in Java and East Kalimantan; and the formulation of housing sector policies. The Programme of urban housing was officially began in Repelita II, consists of new housing development, improvement of existing housing through Kampung Improvement Programme (KIP) and urban renewal.

In Indonesia there are two delivery systems of housing, the informal or owner-occupant construction and the formal housing supply system. The informal owner-occupant construction system in urban areas provides over 85% of the total housing units needed. A three-in-one loan scheme known as *Kredit Triguna* has been introduced by *BTN* (*Bank Tabungan Negara,* the National Savings Bank), enabling organized households to purchase land, build houses and infrastructure, and initiate small businesses that will enable them to increase their income significantly to sustain their new housing condition.

In order to overcome the problem of financial un availability for the low income group, government has initiated *TAPERUM* scheme (a national housing saving scheme) for civil servants. Basically every civil employee has to save a small portion of their monthly salary directly deducted by the Ministry of Finance and deposited in bank. The fund can be used to assist individual civil sercvant to finance part of the construction cost of low cost housing they build or to pay down payment for the house they buy from developers.

The formal housing supply provides approximately 15% of the total units supplied in urban areas, comprising of housing directly developed by the National Housing Corporation (*Perum Perumnas*) and private real estate developers.

To fulfil demands from the low income group, the government introduced a balanced housing development regulation (1 luxurious : 3 medium : 6 low and very low cost houses) which requires private developers to also build housing for the lowest income groups along with the middle and high income. In practice, developers do not supply housing for the low

income groups at affordable prices due to the high cost of land. The so-called "low cost houses" produced by private developers are still beyond the financial reach of the urban poor.

Kampung Improvement Programme (KIP) includes the improvement of water supplies and drainage, footpath/ alley upgrading, the development of communal bathing and toilet facilities, health care clinics, waste disposal facilities, and occasionally schools. KIP, which was formerly implemented and funded by local government, was considered appropriate to improve existing low income housing with limited access to urban infrastructure. In some cases, local government participation was negligible, due in part to the projects' implementation being dominated by central government funds with no requirements for local cost sharing. A lack of participation on the part of the beneficiaries (i.e. the communities) has led to a lack of care and maintenance.

The Urban Housing Renewal Program provides funding for walk-up flats under a cross- subsidy scheme, while encouraging the community to play an active role in redevelopment activities. The sale or rental of the units are to be managed by the National Housing Corporation (*Perum Perumnas*). The concept of the Urban Housing Renewal Program has however often been misinterpreted by private developers, since it usually entails clearance of existing kampungs, large scale relocation of residents, and replacement of old structures with modern, large, multi-storey buildings. Current experiments by *Perum Perumnas* in kampung renewal allowing replacement of housing units in-situ are considered more humane and acceptable.

Perum Perumnas was established to develop new residential areas intended to meet the affordability of low- and moderate-income households. The *BTN* and Home Ownership Credit (KPR) was established as part of the approach. In 1974, *BTN* became a housing savings and mortgage bank, implementing the national Home Ownership Credit scheme (KPR) which offers to the low income people below mostgage loan with market interest rate.

Clean water supply is an ongoing Program started in Repelita I. The regional water enterprises (*PDAMs*) administer the Program, with the Ministry of Public Works responsible for technical aspects and the Ministry of Health responsible for water quality. The Sanitation program, also begun during Repelita I, and continued until today. The goal of the Program is to provide services for handling waste water and garbage, and to provide drainage systems.

Institutions

Financial sources for the development of urban and regional infrastructure come from both public and private participation. Development funds come from tax, revenue and foreign loans. The central funds are channelled through the national budgets of sectoral departments andCentral Government Grant to local governments.

Local government funds come mostly from local tax revenue, retributions, self-managed funds from higher level government (central government, or provincial level), loans and other sources. Until the end of Repelita V, dependence of local government on central government funding was still high (more than 50%). Sectoral role in the development of urban and regional infrastructure is also high. Therefore overlapping in development authorities in local areas often occur.

In the meantime, at the central level a structural change is underway which is demanding a greater role for local government. Some examples of this structural change are changes in domestic revenue from oil and gas to non-oil and gas, especially tax

revenue; and the growing role of the private sector surpassing the state sector in investment financing.

With increased autonomy for local authorities, the role of local finance has become more important. As a consequence, local governments are encouraged to be more active in mobilising local revenue and other financial sources. At the same time revenue received from the higher government should be managed more efficiently. To avoid overlapping and to reduce the burden on the central government, decentralisation policy becomes more important and capacity building of local government staff should be increased.

Although efforts have been initiated to give more authority to local government, matters such as the management of loans for local development are still decided by central government. However, the levying of local tax and project implementation in local areas have been fully managed by local government.

Existing regulations have not given enough room and stimulation for the private sector and communities to participate actively in many government-initiated projects. The existing regulations have also not given enough direction for the provision of a competitive service on a larger scale, while there are not enough sanctions against those who have neglected the provision of basic services for the poor.

The problem in expanding the housing stock in urban areas for the lower income group is the unavailability and limited access to low cost finance. The present housing finance for low income group is to a certain extent subsidised by the government, whilst the ability to provide such subsidy is limited. Commercial loans through both government and private banks are still considered expensive. Direct loans to low income households served by *BTN*, are limited.. Other problems in financing of low income housing especially for rental housing are the unavailability of long term low interest mortgages to developers and households, and especially to non-fixed income households.

B.3. The past 20 years

Over the past twenty years, Indonesia has made remarkable progress in its socio-economic development and has advanced in a variety of sectors that determine the quality of housing and urban settlements. National housing policy typically promotes a number of national goals. Housing not only contributes to growth by providing construction employment and promoting related industries, it also acts as a savings incentive for households, and it can potentially serve as a platform for the development of home-based enterprises. Indonesia's housing policy has, over time, addressed the following goals:

- Improving housing quality
- Increasing the availability of more affordable housing
- Encouraging adequate living space
- Improving tenure choice
- Facilitating security in tenure
- Acquisition of minimum home amenities
- Minimising discrimination in housing selection and finance
- Promoting a healthy and safe living environment

Over the last twenty years, the Government has focused particularly on three overall goals, namely:

- Expanding the availability of housing
- Promoting home ownership, particularly in urban areas
- Improving urban neighbourhood quality

Indonesia provides public funding for the provision of housing; these efforts have been financed and managed by central agencies. The investment has steadily increased with Indonesia's economic prosperity. Traditionally the responsibility for housing supply falls on the local community and the individual, while the Government strives to create an environment that encourages private investment. This policy perspective, along with funding constraints, has meant that the percentage of direct Government investment in housing provision remains low. In urban areas housing provided by formal means meets approximately 15% of the total annual housing needs, and the remaining 85% is provided by the people's sector.

The Government believes that its small but significant housing Programme expenditures can be viewed as carefully targeted economic investments for the nation. It is estimated that each billion Rupiah invested in housing yields 1.7 billion Rupiah in income, in addition to 105 individuals benefiting from direct employment and another 365 from indirect job opportunities. Housing constituted 4.5% of total development expenditures in 1990-91.

During the past 20 years, Indonesia's housing market has largely been successful in meeting the shelter needs of the nation's growing population. Since the early 1970s, housing stock grew with very little planning -- approximately 90 % of the existing housing stock was built incrementally, and only about 5 % followed a formal planning process. Lack of planning has contributed to over-density in some kampung areas, as well as environmental problems like over-use of aquifers that are the ground water sources for wells.

Housing costs in the formal sector have risen by 153 % between 1980 and 1990 (slightly higher than the general inflation rate for the same time period, of about 133 %). The combination of high land prices and high interest rates causes constraints on the production of dwellings for households with incomes around the 70th percentile of the income distribution. This group, however, has been the largest beneficiary of a homeowners credit Programme established by the Government (this program--*KPR*--is described in the "Programmes" section below).

Over the past ten years, physical conditions of dwellings have improved substantially, as indicated by increase in the size of both urban and rural dwellings. The percentage of homes measuring less than 30 square meters decreased from 23.5% to 18.7%, while those homes measuring between 70 to over 100 square meters increased from 30.5% to 35.2% of the housing total. While keeping pace with demand, the Indonesian housing system has been able to supply larger dwelling spaces.

Indonesia's housing policy foundations lie in the principles established by the General Guidelines of State Policy (*GBHN*), which describes the people's view that housing is a community and individual responsibility. While Indonesia's housing and human settlement development programmes and policies take into account the developments in the institutional shelter delivery system, the changing shelter needs, and population growth, these programmes cannot finance homes for all people via the public budget. To meet the long-term objective announced by the National Housing Board in 1990 --shelter for all Indonesians by 2001-- the Government has tried to encourage alternative financing by providing a supportive environment for the housing market, and through programmes such as cross-subsidy schemes. In other words, the Government has offered programmes that

provide incentives for private investors to invest in housing for low and medium level income groups.

Various stages of the Government's policy approach to infrastructure development can be classified in terms of "generations" of an integrated project approach. Beginning with the first Five-Year Development Plan (Repelita I, from 1969-74), the Government has developed five generations of policy toward urban infrastructure planning, preparation, and management. Recognising in the late 1960s the problems that sectoral approaches can create when infrastructure projects are isolated from each other and when physical requirements are considered separately from financing, the Government began to try a more comprehensive approach to urban environment needs.

The performance of urban development at the end of the first long term development plan or *PJP* I (1992/1993) in the housing sector can only meet a limited number of total housing needs. Limited housing supply and poor access for the low income group to the appropriate key resources (land, housing, infrastructure, finance, technology and institution) to obtain a decent housing unit are problems in Indonesia.

In the period of 1969 - 1974, it was believed that Indonesia experienced a lack of housing supply as the result of the imbalances between population growth and housing construction. This growing population needed at least 400,000 new housing units per year (1974-1979), but the ability of people to build housing was limited. In the period 1989 - 1994, around 200,000 - 250,000 housing units were built annually; however, the need for housing in urban areas was slightly higher (at least 436,000 housing units annually). It was later understood the people did built more housing than perceived at that time.

The "first generation" approach, during the early 1970s, provided support for several services in *kampungs* (low income, traditional neighbourhoods), placing emphasis on improvements at the micro level. By the "fifth generation" (beginning 1989/90), Indonesia had formalised the co-ordination of several ministries involved in financing, planning and public works; implemented a nationwide agenda for integrated service planning; and institutionalised implementation of a Policy Action Plan for the urban sector. It was then known as the Integrtaed Urban Infrastructure Development Programme (IUIDP) These changes permit greater quality and scale in the provision of the urban infrastructure and services that create healthy urban environments.

Below are brief histories of significant programs that has been implemented to realise the goals of a healthy urban environment and improved shelter for its people; especially the low income group.

Social Rehabilitation of Poor Areas (Rehabilitasi Sosial Daerah Kumuh) is using a combination of support from the private sector, community groups, and local governments. The program has been active in slum areas in all 27 provinces. Beginning in 1991, the program has supplied social services for disadvantaged groups (including orphans and the elderly), and has built and rehabilitated physical facilities such as footpaths, roads, bridges, public toilets, and water supply systems. Over 3.3 million residents have been affected by the programme.

The Urban and Regional Planning programme is an umbrella program for several related urban and regional development activities that began in Repelita I and continue on through Repelita VI. This program provides guidelines for the development of urban master plans, urban spatial plans, and regional plans, as well as the implementation of those plans.

Physical Planning Units were established in each provincial capital by the conclusion of Repelita III (1984). These units help local government officials with city and regional planning activities, provide technical assistance to local level governments, and channel financial resources for the preparation of plans.

Housing Development Programme Intensification of this program began during Repelita I when the government intensified research on the quality of construction work and materials. This program also included construction of over 1,000 pilot, low-cost housing units. It consists of construction of new housing, improves existing housing, and involves housing and urban renewal activities. It also supports a rural housing program that includes housing, an environment improvement program, and a rural growth centres development program.

Urban Renewal Programme Initiated under Repelita III, this ongoing program provides funding for apartments under a cross-subsidy programme, while encouraging the community to play an active role in redevelopment activities. Under Repelita V, a slum renewal component was implemented in order to stimulate sharing and efficient land use .

Transmigration Programme. Indonesia's transmigration programme is the largest voluntary resettlement program in the world. The overall goals of the programme have been to promote the balanced development of all geographical regions of the country, as well as strengthen the ability of these regions to produce food and stimulate development. The programme has had a major impact on reducing village-to-city migration because it helps to move rural residents leaving marginal lives to more productive locations. Typical programme benefits per family include a 2 hectares plot of farmland, a basic house on a quarter hectare lot of land, farm equipment, technical assistance, and food for up to two years.

Kampung Improvement Programme (KIP). Significant effort has been made to improve the physical conditions of kampung areas. Between 1984 and 1995, approximately 24,100 hectares of kampung area were upgraded, benefiting approximately 6 million households. Although the programme does not directly provide housing, the objectives of KIP seek to improve housing quality in poor neighbourhoods, which have been built primarily through informal sector activities. The programme focuses on the provision of physical inputs. Initiated by the city administrations of Jakarta and Surabaya during the Repelita I period, KIP was later formalised under Repelita II (begining in 1974). In 1979 KIP became a nation-wide programme affecting 200 cities. That number has since grown to 500 and now to all towns and cities. Currently it operates typically as a component of the integrated urban infrastructure development programme (IUIDP). The programme includes the improvement of water supplies and drainage, footpath upgrading, the development of communal bathing and toilet facilities, health care clinics, waste disposal facilities, and occasionally schools. As part of IUIDP, KIP components now included social development and community building programmes supported by credit managed and guaranteed by the respective community. To increase its effectiveness local NGOs is suppoting the implementation of this programme.

A 1987 study showed that when neighbourhoods received US $ 100 KIP funds, households invested an additional US$ 220 more than investments made by comparable, non-KIP areas. For homeowners, the difference was even larger -- US$300. It is estimated that every Rp 1 million invested in KIP stimulates another Rp 1.9 million in private expenditure. Additionally, land and house values in KIP neighbourhoods have risen significantly faster than those in non KIP areas . Short term impact studies indicate that the KIP programs that involved greater participation by residents had longer term results, whereas those with less community involvement returned to original or near-original

condition after five years. Exemplifying this experience is the city of Surabaya, which received the UNCHS World Habitat Award in 1991.

Perum Perumnas. The National Housing Corporation was established in 1974 as a state-owned corporation to develop new residential areas with focus on low income housing, originally receiving direct government capital . It was given the power and financial resources to acquire large tracts of urban and suburban land and was directed to complement its housing construction activities with extensive infrastructure improvements (roads, water, electricity, and waste disposal). The houses built were intended to be affordable to "low- and moderate-income households," defined as households with incomes between the 20th and 80th percentile of the national income distribution. That is, the programme was not targeted at the lowest income groups. Since Repelita II, 302.559 housing units in 131 cities across Indonesia were built by Perumnas.

Bank Tabungan Negara (BTN) and ***Home Ownership Credit (KPR).*** In 1974, BTN became a savings and mortgage loan bank, implementing the national Home Ownership Credit Programme (*KPR*) that offers below market interest rate loans and provides mortgages to the same income group served by Perum Perumnas. The *KPR* programme provides mortgages up to with 20-year terms . Between 1976 and 1990, approximately 638,000 housing units were financed by the *KPR* programme. Of these, approximately 196,000 were built by Perumnas. On a year to year basis the number of units built has varied tremendously, with fewer than 10,000 units being built annually prior to 1980 and more than 110,000 units built in 1989. The average number of houses built tended to move upward.

PT Papan Sejahtera. This was initially a private non bank financial institution founded under Repelita III to provide mortgages . Much smaller in scope than the BTN , the PTPS is originally aimed at middle income groups, with interest rates that are not quite as low as those offered through the KPR. It was created in 1980, and as of 1995 PTPS had issued 52.785 mortgages with the average loan being valued at Rp 15.3 million.

The Clean Water Supply Programme. This ongoing programme began under Repelita I. By the end of Repelita I, 15,222 liters/second of clean water were produced. During this time period feasibility studies were carried out in eight cities. The Water Supply program expanded under Repelita II, increasing the number of water supply facilities and repairing existing networks to reach a wider distribution. Distribution systems for kampung areas and Perumnas housing units were expanded and hydrants constructed. Production capacity increased to 20,312 liters/second. Capacity increased to 38,564 liters/second under Repelita III, while distribution increased to 710 big, medium and small size cities. Repelita IV increased the production capacity to 51,000 liters/second, and Repelita V additional of more than14,000 liters/second have been supplied.

The Sanitation Programme. This programme also began under Repelita I and continues today. Its goal is to provide services for the handling of waste water and garbage and the provision of drainage systems. Initially, this programme focused on capital cities, harbour towns, industrial areas, and tourist resorts. Under Repelita II these activities expanded to include research on sewage and solid waste disposal, as well as to increase services. Financing for water supply and sanitation systems changed under this programme from central government grants to providing loans and including local government participation. Studies and surveys were conducted in several cities in preparation for waste disposal master plans.

Development of Housing through Cooperation. Since the Third Five Year Development Plan/Repelita III, cooperative has conducted its role and participation in housing development by building simple houses for the low income community. Houses built by cooperative especially conducted by Workers Cooperative with the price up 5% to 10% cheaper than house built non-cooperative institutions. Total amount of houses built by cooperative societies up to the end of January 1996 is 58,183 units out of which 41,000 units were built by Workers' Cooperative. In the Sixth Five Year Development, cooperative is targeted to build 60,000 units of simple houses/very simple houses.

Housing Savings by Civil Servants **(TAPERUM-PNS).** This scheme was initiated by the President of Indonesia in 1993, and formalised by the Presidential Decree no. 14/1993. It covers 4 million civil servants consist of 15.4 % the lowest category; 67.5 % second lowest category and the rest belong to the higher and highest categories. The lowest category civil servant monthly save US $ 1.3; $ 2.2 for the second lowest and $3 and $ 4.4 for the third and fourth category civil servants. Since March 1993 to November 1995 the balance in the bank account was about US $ 200 million. The sum loaned to PRUMNAS was about US$ 25 million, and total assistant to civil servants was US$ 55 million. About 75,000 civil servants have been assisted in a house, almost 11,500 assisted to build their own house, and about 24,500 retired civil servants received their saving.

Integrated Urban Infrastructure Development Programme **(IUIDP - P3KT).** Initially to ensure the success of KIP, related city wide infrastructure was included in the programme such as the improvement of urban clean water piping network, urban drainage, city wide waste management, etc. Finance from different resources needed to support the programme were also pooled; not necessarily from individual sectoral budget as before. In the mid eighties many towns and cities managed to improve majority of the kampungs. However, further improvement of the urban infrastructure is still needed and receive higher priority to support the economic growth of the cities. Starting in the late eighties, major cities and towns in Indonesia implemented the IUIDP (or *Program Pembangunan Prasarana Kota Terpadu - P3KT*) where KIP is included as part of the total infrastructure programme.

In the sixth *Repelita* (1994-1999), the aim is for equitable provision of housing and urban services, especially to the poor. People's participation will be further encouraged in various ways and means. During this development period 500 000 new low cost housing should at least be supplied. Slum clearance/up grading programme will be implemented to serve people living at least in 21 250 hectares located in 125 cities and towns; improving 20 000 less developed villages as part of poverty alleviation programme to reduce people living below the poverty line to less than 10 %. A 30 000 litre per second of water production will be implemented to serve at least 22 million urban population. Water supply in 20 000 villages will be initiated to serve 16.5 million persons. The environment and sustainable development are stressed stronger than ever. In this plan clear role-sharing with the private sector has been stipulated. Again the implementation is far from easy.

The overall view of the implementation of housing program in the Five Years Plans since 1969 is presented in the following table :

The Implementation of the Five Year Development Plans (*Repelitas*)

Five Year Plan	Main Problems	Policy	Programme	Main Result
I (1969-1974)	Inadequacy of housing condition due to imbalance of population growth to housing construction	Housing provision influenced people's welfare and will increase productivity. Provision of good housing is needed	Promotion of good housing and urban planning. Development of model houses and provision of clean water .	Achieved housing promotion; development of housing prototypes and improved water supply
II (1974-1979)	High population growth needed at least 440,000 new housing annually. But capacity of people to build is limited. Need to deal with problem in rural and urban areas.	Equitable provision of adequate housing for low income. Because more people lived in kampungs, high priority is to improve (KIP).	Kampung and Rural Housing improvement. Site & Service Low Cost Housing Construction Institutional Building Local Material Dev. Water supply & Environment health. .	Due to extra profit from oil, 73,000 low cost houses built. 20,200 ownership credit given. Added 15,000 litre water. Village housing improvement initiated.
III (1979-1984)	In this period, 600,000 new housesneeded. Government's role is to stimulate capacity building for people to do more for themselves.	People capacity will be further built. Public housing construction and provision of clean water will be increased especially for the poor in urban and rural areas.	To build 120,000 low cost houses. Improve 15,000 houses in kampungs in 200 cities & towns. Improve houses in 6,000 villages. Improve water supply, waste management, etc.	103,654 low cost urban housing units built. KIP served 2.5 million persons in 200 cities &towns; 36,071litre/ water is supplied also serving small towns. In 5,000 villages, houses were improved. .

Five Year Plan	Main Problems	Policy	Programme	Main Result
IV (1984-1989)	Land supply become a major issue in housing supply. Kampungs still in bad shape including in inner city areas. Supply of formal housing has not reached the poor. Housing finance also has not reached the poor.	Improve and integrate supply of housing for lowest income people in rural and urban area. People's right and responsibility to supply housing should be supported. Housing strategy will be implemented in a wider scope and involving people as much as possible.	Improve housing conditions in 10,000 villages. 400 cities and towns will implement KIP serving 3 million persons. Urban renewal will be initiated. 300,000 low cost housing units will be built. Improve water supply in 350 cities and 600 towns. Environmental aspects will be taken seriously.	About 320,000 low cots housing have been built. KIP served 6 million persons living in 24,100 hectares in 427 cities and towns. Water supply capacity reached 51,000 litre per second. 82,510 houses in 7,766 villages improved.
V (1989-1994)	200,000 to 250,000 houses built annually by people; the first time mentioned. In urban areas the need is still great; during this period at least 436,000 unit is needed. URBAN renewal is lacking in progress. In general the progress in housing intervention is encouraging.	Housing strategy is divided into urban and rural ones. Urban housing will consist of low cost housing supply and KIP. Environment and renewal will still be pursued. Integrated infrastructure improvement will have high priority. Village housing scheme will look at wider scope	450,000 low cost houses will be built; to include walk-up flats and rentals. Ownership credit will support this scheme. In 20,000 villages, 300,000 houses will be improved. KIP to be implemented in 500 cities and towns serving 7.5 million in 30,000 hectares. Rental housing and renewal will be included. Additional 14,000 litres/ second water supply will be added.	Finance remains limited compared totargets. Only 330,700 low cost houses were built. Implementation of KIP reached 15 million persons on 37,000 hectares. Urban renewal still in initial stage. In 20,000 villages, 240,000 housesimproved. Total water capacity reached 6000 litre/second.

The housing industry has remained domestically controlled. The real estate industry has developed in the past 15 years such that there are a small number of large, sophisticated developers and a large number of much smaller firms. In 1983, the Ministry of Home Affairs required that real estate developers organise as corporations specialising in real estate; no single proprietorships or partnerships were permitted to engage in this activity.

Fifteen years ago, new housing development was undertaken predominantly by the informal sector, with the formal sector accounting for a much smaller share of the activity.

Little has changed in this regard. In the early 1980's it was estimated that 85% of new housing was built on "informally" subdivided land. Kampungs comprised well over half of the urban housing stock, and it was estimated in 1980 that three quarters of new housing in Jakarta continued to be provided through these informal areas. The essential characteristic of people's housing is not the absence of formal financing, but rather the situation of building on land that is "off market" because of legal or practical impediments to its development, or because it is publicly owned land. Informal financing sources include intra-family borrowing, the conversion of non-invested assets (especially gold), and local money lenders.

The national legislation that most directly addresses housing issues is the 1992 Housing and Human Settlements Law. It states that housing is a basic requirement for the improvement of equitable community welfare, and adds that every citizen has the right and responsibility to decent shelter, as well as the right to participate in housing development. The law describes the regulatory role of Government in pricing as being limited to housing that receives public support, although effective housing supply would be promoted in large scale land development projects through the National Urban Development Corporation, Perumnas. In co-operation with local governments, Perumnas supports land owners who privately invest in development.

The State Ministry of Housing has the principle responsibility for formulating national housing policies and for co-ordinating housing-related policies and programmes. The Directorate General for Human Settlements (Cipta Karya) in the Ministry of Public Works is responsible for the physical aspects of housing activities, including the development of regulations; establishing standards; providing technical assistance; and the implementation of housing programmes.

Indonesia's primary urban administrative structure begins at the local level with the classifications of: autonomous municipalities, non autonomous municipalities, townships or administrative towns, and non-status towns. Municipalities are administered by mayors and are supervised by the provincial administrations, the next higher level of government. Administrative towns (non-autonomous) are supervised by the regent of the regency government (predominately rural that includes the administrative towns). They have a mayor, but the status is less than that of a municipal mayor. The provincial government responsible to the central government through the Ministry of Home Affairs.

Each of the Government's Five-Year Development Plans (*Repelita*) have included policies that promote the capability of municipal administrations through technical assistance and training. To help achieve this goal, a variety of training programmes have been implemented over the past 25 years. Another programme to help local government officials become better managers is the Program to Improve Urban Government Efficiency. Its focus has been the upgrading of key urban areas to full city status (autonomous municipalities), thereby permitting an administrative structure more appropriate to the city size.

A variety of regulations that affect the conditions of urban settlements relate to the levels of authority that local governments have in administering policy and developing policies for urban areas. Law No. 5 of 1974 provides the umbrella legal framework for guiding the distribution of responsibilities to lower levels of government. In 1987, Government policy instructed that the provision of urban infrastructure was largely a local responsibility. Accompanying the transfer of responsibilities will be the transfer of associated budgetary resources, and transfers will be linked to the capacities of Level II governments. In April 1995, Indonesia .launch a pilot programme under which 26 district

level (Level II) governments operate for a two-year trial period with almost complete autonomy in a large variety of administrative areas.

Substantial progress has been made in some aspects of financing urban development. For example, property tax changes made in the mid-1980s simplified the previous property-based tax system by consolidating land-related taxes, broadening the base by reducing exceptions, and changing the base from rental to capital market. These changes produced an increase of 106% in revenue over a four-year period. Changes announced in 1994, allow local governments to keep all property tax revenues, thus adding substantial funding to local government efforts to develop and maintain their infrastructure facilities.

Regulations on land tenure and registration have their foundation in a 1960 Agrarian Law. In 1972, the Ministry of Home Affairs enacted a regulation that transferred authority regarding land rights and certificates to governors and mayors. Regulations for implementing and enforcing the law of eminent domain were established in 1973. Mechanisms for the transfer of land rights to private enterprises, designed to curb land speculation, were established in 1974 by Ministry of Home Affairs regulation. In 1977, compulsory registration efforts administered by the central government were begun, and augmented in 1980. In 1980 it was estimated that only about one-third of the land was covered by registration certificates, but that percentage is assumed to have increased significantly by the mid-1990s.

The natural environment in urban areas greatly determines the quality of life for residents. In the urban environment, the Government struggles to control pollution produced from both household and industrial sources; these two major sources of pollution are expected to expand substantially as rapid urban growth continues. In 1983, Indonesia established the Ministry of Population and Environment (*KLH now Ministry for the Environment*) to develop national policy on environmental issues.

B.4 Agenda 21 and the Global Strategy for Shelter

After the last World War Indonesia laid down four milestones for the implementation of housing programmes. The first was the Healthy Housing Conference (8/1950) that established the Directorate General for Human Settlements; the Building Research Center; and Housing Co-operatives (modelled on German *Bausparkasse*). The co-operatives were established in more than 120 urban centers. The second milestone was the enactment of the first Housing Law (no. 1/1964) which attempted to stimulate more housing construction by the non-public sector, though with little effect due to the high inflation rate. The third was the enactment of the law for foreign (1967) and domestic (1968) investment. The last milestone was the first National Housing Workshop (1972) that resulting in the establishment of housing institutions. The two last milestones coincide with the implementation of housing programmes as part of the series of Five Years Plans started in 1969. This was responsible for the establishment of a solid foundation for improving the overall housing conditions until now.

The Vancouver Declaration and the recommendations for national action adopted at the United Nations Conference on Human Settlements (Habitat, 1976) further strengthened the foundation for existing human settlements strategies and programmes. In 1980, the resolution of the International Development Strategy for the Third United Nations Development Decade stressed the importance of the provision of basic shelter and infrastructure. In 1982 the "International Year of Shelter for the Homeless (IYSH) in 1987" was proclaimed.

After the implementation of IYSH, the 1987 resolution decided that there should be a "Global Strategy for Shelter to the year 2000". In 1988 the UN General Assembly has adopted the GSS-2000 with the main objective of the strategy to facilitate adequate "shelter for all" by the year 2000. The main focus should therefore be on improving the housing situation of the poor and the disadvantaged by an enabling approach. The GSS-2000 produced guidelines for steps to be taken at the national and international levels to support the action.

Further milestones for the human settlements strategy were the establishment of Sustainable Human Settlements Development, and at the Earth Summit (1992) UNCED agreed on "Agenda 21: Programme of Action for Sustainable Development". Chapter 7 of Agenda-21 stressed the importance and elaboration of GSS-2000 from the environmental point of view and prepared further action to be taken by national governments. In 1996, the Habitat-II will be held to evaluate the actions implemented so far by national governments and to prepare the programme for the last four years up to the year 2000. Habitat-II covers two important themes, i.e. "Adequate Shelter for All" and "Sustainable Human Settlements in an Urbanizing World".

The Vancouver Action Plan can be considered as the important systematic plan for housing action on broad based participation. However, most of the basis for actions proposed in the plan had been established in the overall housing policy and programme in Indonesia, and gradually implemented well before the Vancouver Action Plan was adopted on 11 June 1976. The relationship of the six main actions to the housing policy and programme in Indonesia can be explained as follows:

Settlement Policy and Strategy: "*... settlement policies and strategies must be conceived on a scale appropriate to the task and as part of a single concerted effort for the improvement of the quality of life of all people, wherever they live and work* " Indonesia's housing policy and programme was started by implementing the improvement of existing settlements in the urban (1968-KIP) and rural area (1974); and model urban housing (1970). In 1974 the private sector started building middle class housing and the National Housing Corporation started building low cost housing in 1975. The programmes have been developed and continued until now.

Settlement Planning : " ..... *Planning is a process to achieve the goals and objectives of national development through the rational and efficient use of available resources* " Most cities and towns in Indonesia started planning the urban development as early as 1968 (Jakarta) and other cities followed thereafter. The plan includes the provision to enhance existing low income urban settlements (kampung) and the provision of space for new low income housing development. Housing programmes have been implemented through the series of Five Year Plans (*Repelita*) at national and local level.

Shelter, Infrastructure and Services : " .... *the overriding objectives of human settlement policies should be to make shelter, infrastructure and services available to those who need them, in the sequence in which they are needed and at a monetary or social cost that they can afford* ". Affordability in the implementation of shelter, infrastructure and services can only be met if it includes results already existing in the field and accept the users as the main stakeholder. Both improving existing and providing new shelter, infrastructure and services are implemented in an integrated way to achieve the optimum use of resources and provide improved quality.

Land : " ..... *Social justice, urban renewal and development, the provision of decent dwellings and healthy condition for the people can only be achieved if land is used in the interest of the society as a whole*". The 1960 Land Law (no. 5), among other specifies the implementation of land reform where conventional landlordism was abolished in Indonesia. The law also recognized customary land rights along with the formal rights. Many cities such as Surabaya (the second largest) adopt a policy that new development should avoid as far as possible the relocation of existing settlements, including in the urban fringe. The Kampung Improvement Programme was included in the fringe area to ease the disparities between existing settlements and new development; it also integrates the urban fabric between them.

Public Participation. .... *A co-operative effort of the people and their Government is a prerequisite for effective action on human settlements*" Since the very beginning (1969) the housing policy and programme in Indonesia adopted an approach of assisting the improvement of existing settlements and provision of new housing, infrastructure and services for those that cannot provide their own housing in any way. Recently a community based housing development was initiated with financial support guaranteed collectively by the beneficiaries without tangible collateral.

Institution and Management : " ..... *Policies, strategies, plans and programmes cannot be elaborated or implemented without appropriate instruments* " Institutional building and management capacity were the aspects that had to be developed. It was achieved through training in Indonesia as well as abroad and assisted by experts and consultants provided under aid assistance by international agencies and the UN system. By 1980 the institutional set-up was more or less established and expertise well-developed, as can be seen in the development of housing models that fit comfortably with needs and conditions in many parts of the country.

The implementation of IYSH-1987 and GSS-2000 were basically stressing futher of existing policies and programs, supported by programmes in the Five Year Plans (*Repelitas*) and strengthened by the second Housing and Settlement Law of 1992. This law is implemented in conjunction with the Environmental Law (1982) and the Spatial Planning Law (1992). The Housing and Settlement Law includes seven major articles that deal with :

- The right and responsibility decent housing for all to meet basic human needs.
- The need to build housing and settlement in a sustainable way.
- Large scale housing and land development is needed in order to achieved a balanced composition to meet all needs, functions and income levels.
- Government is responsible to ensure sustain land supply. Private landholders are allowed to developed their land co-operatively and adopting the land consolidation approach.
- Community participation in housing and settlement development is further sanctioned in the law.
- Government is responsible for generating funds to assist people that intend to build their own housing.
- Government must ensure that housing and settlement development conform to the master/spatial plan of the city.

Although Agenda-21 was only adopted in June 1992 in Rio de Janeiro, Indonesia implemented sustainable human settlement development as early as in 1982. In urban areas, a Noble City Award was initiated in 1986 to encourage and ensure urban centers a safe, healthy, clean and green environment. If in the first year only two cities met this standard, by 1995 more than 100 towns and cities throughout the country managed to achieve it. The Noble City Award is a movement that includes all citizens, as individuals or organized as stakeholders. The movement is entirely implemented utilising local generated

resources. It is expanding in its elements for evaluation to include clean water supply and air pollution. In many cities and towns, the basis of the movement is in the kampungs (low income urban settlements) where KIP has been implemented since a much earlier date.

B.5 Best practices

Five programs have been selected as best-practices in Indonesia. The implementation of these best-practices contains three major common elements which are important to note. First, they should use a strong participatory or partnership approach to development, meaning that all parties involved have made significant contributions. Second is that employment creation should feature in the best-practices, including poverty alleviation mechanisms. Finally, its replicability and sustainability aspects must be taken into account.

After considering the three main requirements, case studies were presented as examples. For Indonesian conditions, these requirements are in line with existing policy to improve standards of living. In relation to the partnership element, there exist development programmes jointly implemented by government, NGO and the community. During implementation, local government assisted by NGOs or development consultants enable the community to direct the effort or activities to improve their livelihood. The role of local government and NGO usually consists of assisting their technical capacity, sometimes giving policy support.

Since 13% of the population still live below the poverty line, additional efforts have been initiated to reduce the number of poor people by providing income generating activities in a co-operative way and launching programmes that enable them to create their own jobs.

Indonesia's five best practice programmes are categorised as :

Participatory Urban Renewal :

The objective of Participatory Urban Renewal is to improve degraded and sub-standard urban centers which no longer functioned properly (in terms both of time and place). The intention is to revitalise the inner city area without evicting the existing inhabitants.

Participatory Urban Renewal does not impose any preset approach to development, but can be a combination of top-down and bottom-up approach, both multi-sectoral and multi-dimensional from Indonesian best practices. Examples of Participatory Urban Renewal include the multi-storey walk-up flats at Dupak and Sombo in Surabaya, Citra Niaga small business center in Samarinda (East Kalimantan), and *Kampung susun* at Pekunden in Semarang (walk-up flats that accommodate traditional forms of living).

Community Based Housing (CBH)

CBH is an alternative development approach that enables the target families (those in need of decent housing) to develop their own housing through a collective effort. It can be used either to provide new housing or rehabilitate existing housing. CBH therefore differs from housing conventionally provided by real estate developers or the public sector.

CBH is formulated as a selfprovision of housing and settlement and / or improvement movement that works in any area and with any income group (it encourages the development of mixed-income communities rather than single-low income groups, so as to be sustainable and mutually supporting).

It can include housing development for industrial workers or self-rental housing development, CBH self-multi-storey flats *(rumah susun)* development, CBH self-housing improvement, any combination of these, or even ultimately a CBH self-initiated joint venture of housing and commercial development with the private sector.

Integrated Urban Infrastructure Development Program (IUIDP)

The Indonesian terminology for this programme is *P3KT* (*Program Pembangunan Prasarana Kota Terpadu*). The goal of the programme is to initiate decentralization of infrastructure development to the local government level. The concept also ensures that the provision of various urban infrastructure is carried out by integrating the technical, , financial and institutional aspects matching the capacity and needs of local condition and government capacity.

Examples of IUIDP best practice are the Cirebon Urban Development Program, Tanjungkarang Development Program and the multi-urban IUIDP such as implemented in the East Java - Bali IUIDP.

Kampung Improvement Programme (KIP)

The aim of the programme is to upgrade environmental condition in kampungs to reach a minimum acceptable standard for health and quality of living. For the first 20 years, KIP's focus was on physical improvements, including accessibility (roads and footpaths), drainage, sanitation, cleanwater, solid waste disposal, and health and education facilities.

However, recognizing the need to increase the effectiveness and lifetime of the programme, a need exist to incorporate not only physical change but also to empower the community to look after for themselves. The latest phase of the KIP in Jakarta has enlarged the focus to increase community involvement. Another example of the Kampung Improvement Programme is the Banyu Urip KIP in Surabaya.

Rural Housing Improvement (P2LDT)

This community-based rural settlement improvement programme provides access for rural community to basic services and stimulates housing improvements. The Programme was actually based on stimulation of an extension effort to promote settlement improvements. The major concern was main programmes such as the quality of the house, infrastructure improvement and health facilities provision. Of the budget allocated, 60 % is for housing improvement and 40 % is for infrastructure facilities. All the works are done by *gotong-royong* (co-operative effort to help each other).

In order to fulfil the housing needs of the people in the villages, government mobilizes local resources, either from the community or private sector. It encourages the private sector at national level to visit the villages and develop the community, as a reflection of their social responsibility.

Finally, the Best Practices have been replicated in many parts of Indonesia. To a certain extent, also, overseas as part of the Technical Co-operation among Developing Countries jointly implemented by UNDP and the Indonesian Government. The most suitable criteria for future Best Practices, apart from those mentioned above, is community affordability. And Best Practice examples can be developed in the future by giving a conducive atmosphere for the development consultant or NGO and the community to have access to financial assistance within an affordable credit scheme.

B.6 Priority issues

Under the era of globalisation, the economic and trade systems will be more open and free, such as AFTA in the year 2003 and APEC in the year 2010 for developed countries and 2020 for less developed countries. Based on this borderless world, each nation or region should optimise its comparative and competitive advantages to enhance its economic growth by attracting more investments. On the other hand, given limited resources especially related to nature's carrying capacity, each nation or region should balance its economic growth with environmental sustainability. Economic development should therefore be based on a balance needs of present and future generations.

In addition, economic growth will attract incoming capital as well as workers and migrants mostly at the cost of the poorer local people. This in turn will widen the disparities between community groups creating social and political disharmony. Therefore economic development should be in such a way to reduce the disparities as well. In short, in the era of the borderless world, the development process should be based on a productive and efficient economy, sustainable environment, and justifiable and equal society.

Long before the end of the second long term development plan (*PJP II* - 2019), it was estimated that around 50-60% of the Indonesian population will live in urban areas. It means that annually there will be an additional 3 million urban population in need of urban housing, infrastructure and services. Further, there will be another 15 new urban areas with population more than one million, four of which will be new mega cities with a population of more than 5 million each. Given these figures and the important role of urban areas as major concentrations of economic activities, the above issues will be crucial especially for urban development. In addition, the large number of new migrants will require housing and its facilities and services to enable them to live in a better and more supportive settlement and environment.

In the current conditions (discussed in the earlier part of this report) indicate that the median shelter condition in Indonesia managed to achieve a satisfactory level, equal to the standards set by developed countries such as Japan for the eighties. However, the shelter conditions of the lower 20 - 25 % need special attention since many of them have yet to meet the standards set by the national development target, in line with the drastic reduction of people still living below the poverty line from 13 % (1993) to about 5 % by the end of the second long-term development plan (*PJP II*). Therefore, issues of high priority should be formulated and attention given to deal with the problem explained in the Plan of Action in the later part of this report.

Disparities

During the past 25 years (first long term development plan - *PJP I*), Indonesia managed to increase its income per capita from $ 340 in 1980 to $ 520 in 1990 and it is still improving rapidly. (Its target of 6.2% annual growth rate for the sixth five year development plan (Repelita VI) has even been corrected to be 7% instead.) In addition, although there are still 25.9 million people live below the poverty line, Indonesia has been able to alleviate poverty significantly from more than 60 % in late sixties. For example, in 1980 28.56% of the population lived below the poverty line, this became 15.08% in 1990 and 13.67% in 1993.

Although government has been able to alleviate poverty as well as give high priority to equality, the rapid economic growth has also created another "pseudo poverty". Although the poor have become better off, the gap between the very rich and the very poor is still getting bigger; especially in large cities. There is also a problem of disparities among regions as well as between social groups. Compared with the Western part of Indonesia (*KBI*), the Eastern part (*KTI*) has been able to attract only a small proportion of investment, i.e. in 1995 this area only attracted 9% of foreign and 15% of domestic investment. In addition, it only utilized 5% of national banking credit. Among Indonesian provinces in 1993, the highest household consumption per capita was Jakarta with Rp.1,453,890 while the lowest was Irian Jaya with only Rp. 309,740 per capita. Similarly, among people living in urban areas, in 1990 the monthly expenditure of the poorest 10% of people was only 5.53% compared with 27.79% of the richest 10 %. Disparities also occurred between urban and rural areas, e.g. the urban sector with only 31% of the total population contributes more than 50% of Indonesia's GDP. In Java the urban sector even contributes more than 68%.

In short, although Indonesia's economic development has been seen as one of the economic miracles of the Asia Pacific region, the disparities among regions, between urban and rural areas and among social groups within a city/region are some of the issues still to be resolved. These disparities will cause people to move from the low income areas to the higher ones. The incoming people will compete with the local people for the limited available jobs, land, housing, facilities and services. This may affect the social harmony and the carrying capacity of the respective areas with its implications, e.g. social disharmony, water shortages, pollution, etc.

The gap among community groups within a city may create social unrest and political instability, and may also affect economic productivity and environment as well. An example is that the rich may speculate on land and property, creating undeveloped land and unoccupied property as well as destroying historical sites or preservation areas. In addition, the rich will utilise too much land and other resources to fulfil their needs, e.g. building a large house for a small household absorbing the already limited land, water, and other resources. Furthermore, they utilise the resources usually at the cost of the poor by pushing them farther away to the outskirts of the city. Similar vicious circles have happened in housing development. Housing improvement and development intended for the poor have usually been occupied by the not so poor group.

In short, the disparities issue is one of the priority issues given its effect on economic productivity, social-political aspects, resource use and environmental problems, i.e. related issues on regional development, integrated urban-rural development, land management, urban infrastructure and services, housing development, etc. As mentioned, although Indonesia has been able to alleviate poverty to a great extent, the number of people living under poverty level is still very high, i.e. 25.9 million people. Low income people are usually associated with low education level and unskilled labours. These in turn will affect economic productivity. Unskilled labours are also associated with high unemployment or under-employment which is vulnerable to social unrest and political instability. Furthermore, as low

income people have no or little access to basic services, they have more difficulty maintaining or improving their environmental conditions as well. These environmental problems limit the access to basic needs which in turn will affect health and productivity. The risk of disease related to environmental problems in urban areas is 12.5 times that in rural areas, and this figure is growing among the urban poor.

For shelter development, the poor cannot afford standardized housing, building materials, building codes, etc. They have also very little access to land located in strategic areas close to working places or other employment generating areas. The poor has no or little access to credit, information, and other necessary assistance to fulfil their housing need. With this background, poverty alleviation should be given high priority in order to break the multiple vicious circle. Transmigration programme offers alternative housing solution for people living in poverty to include a low cost house and 2 hectares of cultivation land.

Environmental

In Indonesia, environmental impact assessments have been introduced as one of the main requirements for industrial and large scale settlement development. However, limited government capability in enforcing the legislation is one of the reasons for environmental deterioration due to rapid economic growth. For example, large settlement development has been happening along the corridor of the northern coastal area of Java, especially around *Jabotabek* and *Gerbangkertosusila*. The new town development includes major reclamation activities and replacement of a large fertile agricultural area. New towns and major urban renewal developments as part of the rapid urbanization processes in general have caused environmental problems, such as lowered water table, flood, sea water intrusion, water pollution, air pollution, and others.

The rapid urbanization combined with lack of urban infrastructure and services have worsened the urban environmental conditions. Jakarta's domestic sludge creates a pollution load of 152 tons/day; of BOD and contributes to 12% of the waste water. However, under current practices, it is estimated that by the year 2010, there will be 288 tons/day contributing to 79% of waste water. It was estimated that in Jakarta the environmental costs of air and water pollution are $ 1 billion per year and losses due to floods are $ 26 million per year. In addition, the poor has to pay more for these environmental problems, e.g. the urban poor has to spend up to 10% of their income on water compared to only 4% for the mid and the high income groups.

As has been mentioned, these environmental problems and the limited access to basic needs will also affect the health conditions which in turn also affect productivity levels. In addition, environmental degradation will not only affect the present but also the future generation, creating unequal development treatment for the future generation. As the environmental problems have a major impact on sustainable development, in terms of living quality degradation, economic productivity, and especially jeopardizing the future generation, environmental issues should be treated as one of the priority issues as well.

Settlement and Shelter for All

Over the last twenty years, Indonesia has focused on three main goals, namely expanding the availability of housing, promoting home ownership -- particularly in urban areas -- and improving urban neighborhood quality. Several housing policies have been introduced, among others, Kampung Improvement Programme (KIP), the balanced housing

scheme of 1:3:6 formula, *Triguna* loan scheme, *Tapernas* (the national housing saving). The housing situation in Indonesia has improved, e.g. the average number of households per house was 1.059 in 1990 compared to 1.072 in 1980 (BPS). It should be noted that the housing situation in terms of the average number of households per house in rural areas is relatively better than that in urban areas, e.g. 1.048 compared to 1.083 (1990) as well as 1.055 compared to 1.105 (1980).

As mentioned earlier, however, the quality in terms of access to basic services is still low. The majority of households still have little access to basic services, e.g. in 1992 only 25.23% of households had access to piped/pumped water, 51.86% to electricity, 35.92% to private toilet, 45.50% to private bathing facilities, 50.89% to tile/cement floor, and 41.67% to brick wall (BPS). Furthermore, compared to the rural poor, the urban poor are disadvantaged in terms of their limited access to basic services as they have no other alternatives. In the case of water consumption, while the rural poor can also use a well or river, these are not an alternative for the urban poor as most of the wells and rivers in their areas are heavily polluted.

In addition, the government involvement in housing provision is still limited, only to approximately 15% of the total housing needed. The ability of people to build is still dominant and improving. For the period 1989-1994, around 250,000 formal housing units were built annually while the needs were estimated at least 436,000 units annually. The shortfall is met by self-build housing. One of the problems relates to land, i.e. land price in urban areas is high as it has become a commodity. In short, although some progress have been made, the settlement for all especially for the urban poor is still a big and major problem.

Institutional and other supporting issues

Other related issues of shelter for all and sustainable settlement development in an urbanizing world relate to the institutional capacity to manage urban development in general. This is made more difficult due to the fact that the urbanization rate is and will remain high. However, a large portion of the urbanization process has happened by the change of the settlement's status from rural to urban due to physical and economic improvements. In some areas this process has been well managed, in turn reducing the rush of population from smaller urban area to larger cities and towns.

Limited resource availability, especially on the public side, is another crucial development issue. For years partnership between the government and the private sector as well as the community proved to work and delivered a satisfactory result. However, the scale and scope of the effort is limited and therefore needs to be increased in terms of areal coverage as well as development components, especially in the provision of infrastructure and services at a cost affordable by the majority of the urban poor. Another important element in overcoming resource limitations is the integration of settlement development with increased economic growth. In most cases, economic development has distanced itself as new low cost housing can only be built far from centers of employment. This situation is the result of land speculation and its dominant function as a commodity rather than having a social function in development.

Part C. National Plan of Action

The National Plan of Action is presented in two parts reflecting the major goals outlined in the General Guidelines of State Policy (*GBHN*) and the sixth Five Year Plan (*Repelita VI*) of Indonesia. National macro economic policies and strategies have major impacts on urban and shelter development. Therefore, to be effective, the policies, strategies and activities outlined in this report describe the attempt to achieve adequate shelter for all and sustainable settlements development that will be carried out in the context of the macro-economic policies and strategies.

C.1. Adequate Shelter for All

Shelter is essential to the social and economic well-being of the people yet it is still insufficiently provided compared to other basic needs. The national housing policy of Indonesia attempts to increase the availability of adequate housing for all especially the low-income group. About 85% of additional urban housing required annually are supplied by the community themselves and only 15% by the public and private developers. It is therefore important that the elements of shelter delivery system such as housing market, finance, land, construction industry, infrastructure and services, rules and regulations be improved to promote more actors interested to involve in housing development.

The goal to achieve adequate shelter for all and sustain settlement development in an urbanizing world will only be reached through a series of actions which are further elaborated in this part of the report.

Decent housing for all, especially for the low-income group

Indonesia faces shifting needs in housing from quantitative to qualitative requirements. Annual quantitative urban housing need is still enormous, running to almost one million units. In addition, the majority of the households cannot afford to buy houses at the present market price. Distortions caused by macro-economic policies and unconducive conditions have led to the production of more expensive housing. This has led to the exclusion of the low-income, vulnerable and disadvantaged groups from gaining decent basic housing. On the other hand, housing is gradually needed as shelter to support the social-economic well-being of the people.

Policies should therefore be directed to the fulfilment of a secure, healthy, environmentally acceptable, socially and economically integrated housing, particularly for the low-income households, through the enablement of all parties involved.

Along with the policy a set of strategies and actions are formulated as follows

Strategies

(a) Accelerate adequate and affordable housing for all, especially for disadvantaged groups;
(b) Rehabilitate, upgrade and maintain the existing housing stock including rural housing.

(c) Apply co-development approach which involves government, private sector and community in housing development;
(d) Apply and expand community-based housing development.

Actions

Programmes of activities in clude, among others :

(a) land allocation within the spatial plan for the development of large scale land development for housing
(b) supporting houses construction by low income people in fringe and rural area through the provision of basic infrastructure and services
(c) accelerate the provision of basic infrastructure and services in existing low-income settlements and the expansion of KIP to include more communities and be linked to economic development
(d) expand schemes of low cost housing (*Rumah Sederhana=RS*), very low cost housing (*Rumah Sangat Sederhana=RSS*), low-cost rental housing, and multi-storey low cost flats delivery by integrating with, among others, large-scale housing, urban renewal and new town development
(e) enforce the implementation of balanced housing schemes (1:3:6)
(f) expand the rural housing improvement programme (*PL2DT*)
(g) rehabilitate, upgrade and maintain existing housing stock
(h) promote and accelerate cooperation in housing development among government, the private sector and the community
(i) accelerate the provision of housing through community-based approach
(j) increase access to housing elements, such as land, credits, information, technologies and simple legal and administrative procedures
(k) provide guidance and training for the public, particularly low-income groups in understanding the building codes, material standards, construction processes, credits, permits etc..

Monitoring

The achievement of the objectives can be monitored by the following indicators.

- area and location of large scale land development
- number of houses and low cost houses (*RS - RSS)* built **and occupied** per year by all sectors including low-cost multi-storey and rental housing in metropolitan area and in industrial estates
- number of areas where balanced settlement development (1:3:6 scheme) has been implemented (1:3:6 scheme)
- median market price and rent of dwelling unit to the median income
- median floor area per person; and number of houses that meet the minimum standard
- area and households covered by KIP, urban renewal and relocation of slums in marginal area
- number of improved rural houses
- number of projects and fund invested in government and private sector partnerships and community-based housing development

Strong, capable, accountable and innovative housing institutions

Housing institutions are one of the strategic components to ensure acceleration of adequate and affordable housing delivery for all. However, housing institutions are one of the weak points as they lack adequate and qualified staff, and have rigid and weak organizational structures to carry out their role.

Policies geared toward capacity building of the housing institutions has to be directed to the improvement of the enabling roles of the government institutions to facilitate all actors in housing development to perform better.

Strategies

Strategies to realize this policy include :

(a) Increase the enabling roles of the government sector
(b) Develop the complementary roles of the private sector
(c) Support of community-based movement
(d) Strengthen decentralization of housing management and policy making.

Actions

Selected programmes to achieve better institutions include :

(a) develop and strengthen the participatory development forum of government, private sector and the community to ensure transparency
(b) support the initiatives of NGOs, development consultants, housing developer associations, associations of building materials industries, and universities that assist housing development
(c) promote training for government and private sector staff through apprenticeship and internship on community-based and co-development of housing schemes
(d) promote training and skills development for the low-income groups on building technology; construction technique; project management; household economy and micro businesses
(e) support the formation of community-based organizations for housing development and strengthen focal points of its network for communication and channeling of resources
(f) develop and strengthen housing institutions, including the BKP4N (National Housing and Settlement Policy and Supervision Board) at central level and BP4D (Local Housing and Settlement Supervision Board) at local level
(g) establish coordination mechanisms between housing-related institutions to accelerate and increase efficiency
(h) mobilize professionals and urban managers to provide services and strengthened partnerships between all housing actors
(i) establish decentralized *one stop* services to support faster housing delivery and better access by the communities
(j) promote housing research institutions to coordinate the activities and dissemination of researches and results.

Monitoring

Monitoring indicators to assess progress include, among others:

- Structure, number and qualification of personnel in housing institutions
- Number and types of housing delivery system which apply community-based approach involving cooperatives, NGOs, development consultants, universities, private sector, and associations in housing development
- Mechanisms for the partnerships and networking among housing actors
- Number of *One stop* service 'points' or offices that provide information and services pertaining to housing development
- Time and costs required to obtain permits for housing development.

Enabling and consistent regulatory frameworks for sustainable housing development

Many of the constraints that contribute to the problem of housing delivery relate to the inadequacy of rules and regulations to enabling orientation. The lack of transparency and inoperable rules and regulations have resulted in a lack of coordination among housing institutions, including the private sector and the community. Uncertainty, insecurity and high cost economies are among housing problems that have to be resolved.

Policy toward the improvement of the regulatory framework need to be directed to support and enable the actors in the housing development process

Strategies

Strategies to implement this policy include,

(a) Improve and operationalize law enforcement in housing development
(b) Reorient related housing and settlement laws and regulations to conform with the UUD 1945 (Indonesian Constitution 1945) and GBHN.
(c) Integrate housing development with tax system as incentive or disincentive

Actions

Programmes to be implemented include among others:

(a) prepare regulations to implement and enforce the Housing and Settlement Law No. 4/1992, including the formulation of spatial development plans, land allocation, large scale land development (*Kasiba* and *Lisiba)*, the balanced housing scheme (1:3:6 concept), progressive housing tax system, housing construction industries, housing financing schemes, community-based housing development, etc.
(b) streamline legal and administrative procedures to speed up housing development
(c) adopt an enabling legal and regulatory framework to stimulate partnerships of housing actors and to support a fair and competitive market for housing and its constituent elements
(d) review and adjust the legal, fiscal and regulatory frameworks for land use, building codes and standards to maintain competitive markets and to promote the achievement of social goals
(e) develop regulations that require estate developers to build houses for workers and other low-income groups.
(f) promote tax incentive and disincentive for housing development

Monitoring

Progress can be monitored through the following indicators:

- the formulation and completion of National Housing Development Action Plan, regulations and guidelines on the implementation of large scale land development for housing ; the 1:3:6 scheme; land allocation and transfers; building codes and materials standards; tax system; permit procedures; and the implementation of fair market and competition
- enactment of detailed urban spatial development plans
- increased percentage of the total housing stock that have permits and land title

D.1.C. *Efficient, effective, accessible and integrated housing financing schemes*

The housing finance situation is in the developmental stage in terms of implementation and effectiveness particularly to serve the low-income groups. The main problems are affordability, accessibility, limited resources, and access to both non-formal and formal financial institutions. It is obvious that the present housing financing system is not fully integrated with the broader system. Further, subsidy is not yet transparent and has not effectively reached the target groups. Information on financial mechanisms is still not reaching the non-fixed income earners.

Policies to improve and expand present housing financing schemes will be directed to be more responsive to the needs and potentials of the majority of the people.

Strategies

To achieve this policy the strategies should include,

(a) Develop integrated and transparent housing financing scheme,
(b) Promote and develop linkages between monetary and non-monetary finance system in housiong and settlement development;
(c) Link housing investment with tax system and income generating activities;
(d) Improve access to efficient and effective housing finance for all

Actions

Activities and programmes include :

(a) improve the access of informal housing delivery to formal financial institutions including innovative community-based financing schemes such as the *arisan* system (community-based revolving funds) for development of new and rehabilitation of existing houses. Further, housing mortgage, saving and mutual fund should also be promoted
(b) develop taxation conducive to housing development
(c) improve the capability of financial institutions in multi-sectoral/level financing
(d) develop block grants and bridging financing to include multi-year financing schemes for housing development that needs long-term investment
(e) regulate credit allowances to promote private and state banks' provision of affordable schemes especially for the low-income groups
(f) expand the existing housing finance schemes for the low-income group such as the *Triguna* (trifunction) credit, *Taperum* (housing savings), secondary mortgage facility, and credits for ownership, repair, site and services, and other schemes. It should also develop financing schemes with group collateral with simple procedures for the low-income group
(g) form partnerships with the private sector to mobilize all financial sources
(h) review and improve present subsidy system to make it effective and efficient in reaching the target groups at the local level, and to remove administrative and legal obstacles for the expansion of community development funds

Monitoring

Some of the monitoring indicators to evaluate the achievement of the objective include:

- Type and mechanisms of housing financial schemes
- Type and number of households that are annually covered and funded by existing financial schemes
- Time and cost of obtaining credits/funds
- Mechanisms and amount of housing subsidy allocated

- Participation of private sector in mobilizing housing finance and the development of block grant and multi-year financing to assist the low-income and other groups

A.4.b *Equitable and secure access to land, infrastructure and services for all*

Land, infrastructure and services are strategic prerequisites, particularly for the low-income group, in increasing their capacity to meet their housing needs. Legal and social barriers have created inequitable access to land, infrastructure and services, where the low-income, vulnerable and disadvantaged groups are suffering the most. This is one of the reasons of distorted housing markets. Others include shortage of affordable land; conflict of interests in land development; conventional and rigid spatial planning; ignorance of the role of the community in planning; land speculation; lengthy and complicated procedures for obtaining security of tenure; ignorance of participatory planning; a lack of managerial skills.

The policies to address these problems should be geared toward removing the obstacles to reduce inequitable access to land, infrastructure and services that enable people, mainly the low-income groups, to build their own housing.

Strategies

Strategies to realize this policy include,

(a) Ensure access to suitable and affordable land for housing development, particulalry for the low-income group;
(b) Strengthen security of tenure
(c) Provide strategic infrastructure, facilities and services that stimulate housing development by private sector and community;
(d) Promote and strengthen participatory spatial planning
(e) Integrate housing development with settlement development.

Actions

Selected programmes and activities include:

(a) allocate suitable and accessible land for community-based and other housing development, especially by the people
(b) monitor and regulate land prices, particularly planned for low-income housing development
(c) improve capability and capacity in land management of housing actors to include the community-based approach
(d) simplify procedures and process for permits and land titling
(e) promote schemes for guided land development and land consolidation for housing development
(f) enforce urban spatial development plans to include the allocation of land for housing in relation to economic development and the provision of urban infrastructure and services
(g) monitor and control the implementation of housing development, including large-scale and new town development, and integrate the infrastructure and service system with regional and city systems
(h) improve transparency and information on land use and spatial development plans for all stakeholders

Monitoring

Monitoring indicators to assess progress include among others:

- allocated land for housing development
- housing density per sub area of cities
- land price increase in the last 10 years

- coverage of land acquisitions and transfer of rights annually, especially for the low-income groups
- time and cost needed to obtain permits
- availability of information on detailed spatial and land use plan
- allocation and availability of land, infrastructure and services for low-income housing in large-scale and new town development
- number of houses connected to urban infrastructure and services, including houses that rely on water from wells, rivers, springs, etc.
- amount invested in infrastructure and services development

A.1.d. *Qualified construction industry for housing the masses*

Major problems for the housing construction industry, particularly building materials and technology, are the inconsistency of standards, a centralized production system and distorted markets which result in expensive building materials; and lack of "mass-production" technologies which would reduce costs.

The policy to address these problems will be directed to ensures adequate supply of affordable building materials and development of construction technologies which could accelerate the delivery of adequate shelter for all.

Strategies

Strategies to implement this policy include,

(a) Promotion of organized demand to reduce cost and improve quality;
(b) Improve efficiency and quality of the construction industry by intervening the relationships of construction industry, market and resources;
(c) Promote innovative technology and small scale building material industries to develop and expand the utilization of local resources and standards in building materials

Actions

Selected programmes and activities include:

(a) developing and strengthening the institutions of the construction industry
(b) improve flexible codes, rules and regulations to meet local conditions and reduce costs
(c) promotio of research and dissemination of pilot projects on appropriate, affordable and environmentally-sound technologies which utilize local resources
(d) promotion of training for technological development amongst entrepreneurs, communities, and housing construction industries
(e) expansion of financing schemes and credit for construction industries
(f) promotion of locally-produced, affordable and environmental-friendly building material by providing technical, management, information and marketing assistance and incentives
(g) promotion of modular coordination system of building components by developing and enforcing codes, rules and regulation, conduct research and provide incentives to building material industries and disseminate information on modular coordination system

Monitoring

Selected monitoring indicators to assess achievement include:

- Building codes and materials standards
- Research areas and dissemination of findings

- Number and types of training and assistance given
- Financial schemes available for housing construction industry
- Extent of modular coordination system developed and disseminated

B.3. *Integrated housing and economic development*

Housing is a basic human need and component of the social and economic well-being of individuals. It requires efforts that incorporate housing delivery as a socio-economic aspect of households. Access to housing should improve social-economic conditions, thus accelerating poverty alleviation. Further, the housing construction industry has created jobs and expanded the national economy. However, due to economic distortions which reduce the efficiency and effectiveness of production activities, the economic impact of the housing construction industry is not yet optimal.

The policy to improve the role of housing in economic development will be directed to enable the production sectors of housing development to link with the expansion of economic activities.

Strategies

The strategy to implement this policy include

(a) Accelerate housing movement which generate housing activities by the masses.
(b) Accelerate housing construction industry that creates large employment opportunities, particularly locally-generated employment using local materials.
(c) Promote mixed land use to allow the development of micro home based economy.

Actions

Programmes of activities include among others :

(a) enforce regulations and provide incentives to industrial estates which build housing for their workers and estate developers who provide housing for the low-income groups
(b) develop and implement spatial development plans that include allocation of land for housing development with employment-generating activities, rental housing for workers, housing with home based economy, etc.
(c) promote housing that includes employment generating activities, particularly for the urban poor, through simplification of permits, building standards and codes
(d) expand the implementation of housing credit particularly for the low-income group, complementary to the poverty alleviation programme
(e) promote housing development that utilize local labour and locally-produced building materials and to include income generating activities.
(f) promote building materials industries and encourage subcontracts as well as partnership of some of activities with small and medium-scale local building materials industries.

Monitoring

Indicators which can measure the achievement of this objective are :

- Average distance from residential area and land allocated for housing to major employment centres
- Proportion of housing that accommodates employment and income generating activities particularly for the poor in residential areas, large-scale housing development and new-towns
- Amount of employment generated by the housing construction industries

C.2. Sustainable Human Settlement Development in an Urbanizing World

The effort to achieve sustainable settlement development is, among others, also formulated in the Urban Policy Action Plan (UPAP) that outlines national goals and policies of urban development for the second long-term development plan (1993-2018). The Plan also elaborates activities that will be carried out during the Sixth and Seventh Five Year Plans (1993/94 -1998/99 and 1998/99 - 2003/2004) as a continuous effort to achieve the ultimate goals of national urban development.

The Plan contains a broader outline of objectives, policies, strategies and activities for human settlement development, particularly within urban development. As outlined in the Plan, the goal of sustainable human settlement development in an urbanizing world will be achieved through a series of short-term objectives, which include accountable autonomy; improved capacities of local government in managing human settlement development; expansion of participation and partnerships of government, private sector and the community in human settlements development; safe, healthy, clean, green, balanced and socially-integrated settlements; employment opportunities for all, particularly the low-income, vulnerable and disadvantaged groups; sustainable spatial and land-use development; a safe, convenient, affordable and sustainable transportation system; a system of settlements that promotes regional and national economic development; and efficient and effective settlements management. It is also important to note that to ensure to protact the environment while development should be sustained, Indonesia passes the Environmental Law (no. 4 1982).

Accountable autonomy with improvement of the capacity of local government in managing settlement development

In situations of rapid urbanization growth, sustainable human settlement requires efficient and effective management and decision making of resource allocations and development to be made at a close level to the people. To be implemented as outlined in the Local Government Law No. 5/1974, policy should be formulated to increase the authority of the local governments to also take responsibility in human settlements management. At the same time, decentralization of policy and programmes should be pursued to improve the capacity of local government to carry out realistic and accountable human settlement management. Strategies should emphasize the strengthening of local government institutional capacity.

programmes includes :

(a) improve regulations and provide legal basis for stronger structure, procedures, roles and responsibilities, personnel and financial systems of local government and relationship with higher-level government
(b) define roles and responsibilities in urban management among central, provincial and local governments and increase coordination
(c) improve human resources of local government to improve capacity to plan short term development, housing and urban development.
(d) improve local financial system; broadening the revenue base and collection system and increase authority to manage financial resources

The progress in achieving the objectives is measured by the following indicators :

- Type of urban management programme carried out by local government
- Proportion of locally-generated revenues to total local government revenues
- Local revenue collected per capita
- Sources of income (taxes; users charges; other local incomes; transfers from higher government; borrowings; other local government income)
- The extent, capacity and responsibility of local tax collection, charges for services, capacity to borrow funds
- Debt service ratio charges (principal and interest repaid) as part of total expenditure by local government
-

D.1.b. *Acceleration of partnership among government, private sector and the community in settlements, infrastructure and services development*

Sustainable human settlement development requires mobilization of resources from all stakeholders in planning, implementation and controlling of development. The role of government as provider in development will decrease and gradually be taken over by the private sector and the community. Indonesia has been recognised for including women's organisation in development. Policies should be formulated to improve government's role and function as an enabler, and to create a conducive environment to accelerate partnerships with the private sector and the community. In addition, mobilization of social, economic and cultural potential should be increased. To implement the policies, the restructuring and improvement of local government institutions and changing approaches in the allocation of public investment and delivery of services should be included.

Programmes include :

(a) improve the capacity of local government to accelerate partnerships and responding to the need of private sector and the community
(b) improve transparency of (local) government through the provision of relevant information and other means
(c) prioritize investment in infrastructure and services that stimulate investment by the private sector and the community
(d) improve mechanisms and media to promote a conducive environment for partnerships between government, private sector and the community, including NGOs and similar organizations
(e) expand innovative pilot projects based on the private sector and community's initiatives and disseminate the results

Monitoring indicators to evaluate the achievement are :

- Amount of investment and types of agencies involve in economic activities and the deliveries of urban services
- Types and amount of investments carried out within the economic activities and the deliveries of urban infrastructure and services.
- Number of pilot projects implemented and amount of public expenditure contracted to private and community organizations

B.4 *Safe, healthy, green and socially integrated settlements*

In general, human settlement development lacks basic infrastructure and services. Meanwhile, misuse and overconsumption of natural resources, due particularly to the wealthier groups of society and the expanding economy, have added to the problem of accelerated environmental degradation. Obviously the low-income groups are suffering the most. In addition, social and cultural life are threatened by failure to adapt to new realities in a changing world. Kinship and values of community, and rights of equal access to resources are being broken leading to losses of cultural identity. The gaps between socio-economic groups and instability of the living environment have also increased..

Policies and efforts to carry out sustainable settlements should be directed to reduce unequal access to good environment, infrastructure, services, resources and cultural life, particularly for low-income, vulnerable and disadvantaged groups. This should be addressed by improving the quality of the environment, redirecting management, prioritizing the expansion of physical, social and cultural infrastructures and services; introducing environmentally friendly technology and ensuring the accommodation of the interests, security and rights of all people. Selected programmes include :

(a) improve, operationalize, disseminate and enforce laws and regulations on environmental management, and expand education, health, cultural and other social facilities and services
(b) strengthen the capacity of local environmental agencies and promote participatory and area approach in awareness and management, focusing on the use of water and land resources
(c) develop and enforce instruments, standards and ambient quality of water and air in accordance with local situations and environmental quality control
(d) promote better planning to reduce the impact of natural and human-made disasters on settlements
(e) expand, maintain and rehabilitate environment-related infrastructure and services according to effective demand with increased involvement of local government, private sector and the community
(f) expand the pricing system for the delivery of services including the promotion and development of low-cost and appropriate technologies for provision of better and cheaper infrastructure and services
(g) promote the preservation and conservation of historical and cultural heritage
(h) support the activities of NGOs and other intermediaries to assist the low-income groups to have fair access to better environment
(i) increase awareness and involvement to ensure public safety

Monitoring indicators to evaluate the progress include among others :

- Proportion of school age population attending schools
- Number of persons per health services; child mortality and life expectancy rates
- Number, capacity and type of vocational training; children per classroom; public library, rehabilitation centers, homes for the elderly and orphans
- Number of museums, theatres and other cultural facilities; cultural events
- Percentage of households connected to and price of water, sewerage, electricity, and telephone
- Quality of water, air and land; average consumption of water; solid wastes generated, collected and disposed of
- Number of crimes reported,
- Number of families per houses, total houses, in terms of size and condition; house with facilities particularly for the low-income groups

Employment opportunities for all

Employment is an important aspect of human development as it generates income, promotes self-confidence and psychological esteem. The problem is the insecurity of jobs and unequal access to employment. Availability of employment is relatively limited compared to the increase of job seekers; and the requirement of skills that most of them can not comply with. The other problem is the intricacy of the labour market, meaning that some groups (although they have the required skills) can not achieve access to it.. Sustainable human settlement development should be supported by enabling efforts that increase employment and access to economic activities particularly for the low-income groups. Strategies strengthening the link between investment in infrastructure and services and economic activities can produce synergical effects to maximize employment for all. Programmes to achieve these objectives include, among others :

(a) expand economic activities that provide employment by prioritizing investment in infrastructure and services, providing guidance, information, access to credit, and security to workplace
(b) improve the quality of human resources, particularly the labour force, through training, education and apprenticeship, and in response to market demand
(c) develop policies and strategies strengthening the link between formal and informal sectors and between small, medium, large-scale enterprise and the cooperatives
(d) improve the information system of labour markets at local labour offices and make it accessible to all.

Selected monitoring indicators to assess the achievements are :

- Household income per capita
- Poverty line and number of households below the line (compared to total households)
- Informal employment and unemployment rates
- Average wage of workers, length of time in finding their first jobs
  Percentage of workforce seeking jobs compared to the total workforce

Sustainable spatial and land-use development

Land is the key natural resource for human settlement development. Its availability is relatively constant; however, rapid urbanization has led to an increase in competition for land. As an economic asset, land should be used efficiently in order to maintain environmental quality. Rapid urbanization also tends to neglect people's rights, and social and cultural functions of land. In this situation, spatial planning is important to coordinate the interests of all development sectors and the community. It should accommodate rapid urban transformation and access for all stakeholders to take part in the process. Land development should also be efficient, effective and integratedly carried out, with all interests fairly accommodated. Ideal and potential land should be developed to ease over crowded area especially In Java and Bali. Efforts to improve land management supported by capable institutions, planning, regulatory frameworks and information system will ensure equitable and sustainable development. Selected programmes include:

Actions

(a) develop means and legal basis to promote a participatory approach to the preparation and implementation of spatial land-use plans, particularly for fast-growing urban areas

(b) accelerate the preparation and legalization of detailed spatial plans to promote better land-management which is conducive to investment
(c) promote spatial land-use development which minimizes transport demands and costs
(d) prepare a legal basis to improve coordination between the Land Office and other development agencies and improve administrative skills, particularly at Local Land Offices
(e) improve skills of staff, organizational structure and administration system of agencies responsible for spatial and land-use management, including the application of the community based approach
(f) promote smooth processes of land acquisition and transfer of rights, particularly for the urban poor, with information, advocacy and assistance by qualified intermediaries (consultants, NGOs)
(g) review and improve policies and regulatory frameworks on spatial development, land rights, transfers and land-useparticularly for large-scale and multi-functioned development to resolve various inconsistencies
(h) enforce regulations and permits on landacquisition, particularly large-scale development of land, to prevent speculation and abuse of uses
(i) develop and implement legal instruments to promote productive use of space and land, including the recovery of public investments and to capture land value increases derived from speculations
(j) improve information, transparency, consistent enforcement and management of spatial land-use plans

Monitoring indicators to assess achievements include :

- Availability of formal spatial and land-use plans
- Number of public hearings taken place in the preparation of spatial and land-use plans and further implementation and control
- Compliance of title, location permit, building permit etc. to existing plans
- Accessibility to spatial land use development plans by all
  Time and cost needed to process land titles and various other permits related to the use of land

Safe, convenient, formal, affordable and efficient transportation system for all

Many public transportation systems are still substandard, limited in scope, and in poor condition. On the other hand the increase in the number of private cars surpasses the construction of new roads. Well-integrated land use and transportation systems would have a positive impact on energy efficiency. However, many cities face traffic congestion, which results in high cost economies and a burden on both the economy and the population. Although most public transport is subsidized, it is still expensive for low-income groups. To achieve a safe, convenient, orderly, affordable and sustainable transportation system, efforts should be directed to improve the efficiency and expansion of the existing system. This can be achieved by improving the management and mobilization of resources in the private and community sectors. Programmes to achieve these objectives include :

(a) coordinate regulations, planning and working mechanisms among agencies involved in transportation management
(b) promote the participation of private sector and the community in the provision and maintenance of public transportation

(c) improve the efficiency and effectiveness of public and private transportation companies by improving their institutional structure, management and skills of employees
(d) develop financing schemes to expand transportation facilities and services by taking into account the affordability of the people
(e) integrate urban transportation system with regional spatial planning
(f) improve traffic management to improve the efficiency and effectiveness of facilities and services, and to develop integrated mass transport particularly for large cities, urban agglomerations and between human settlements
(g) promote energy-efficient and environmentally friendly modes of transport.

Monitoring indicators to evaluate achievements include :

- Proportion of trips taken by private car, train, bus/minibus, motorcycle, bicycle, walking, etc.
- Average travel time and ratio of automobiles to people
- Availability, service level and affordability of the public transport system
- Length of road per car
- Investment in public transportation, infrastructures and facilities

E.3 *Sustainable settlements system that promote regional and national economic development*

Rapid urbanization as part of the global economic has impacts on human settlements development particularly in large urban agglomerations with access to international markets. It is obvious that in the past fifteen years, large cities particularly on Java have grown rapidly, leaving behind the smaller cities. As mentioned in this report the global economy, supported by progressive macro-economic policies, has created disparities in urban growth and urban - rural development, in addition to the increase of migration and urban poverty.

Pressures on the physical and social environment in large cities have lowered urban productivity, which in turn affects the contribution of these cities to economic development. On the other hand, smaller settlements are unable to take part in and benefit from the opportunities offered by the integration with the global economy. Sustainable settlements development should cover the development of a national system that reduces the imbalance of growth between cities as well as between urban and rural areas. Meanwhile increased urban productivity could result in higher regional and national economic growth. Pogrammes to implement this policy include :

(a) incorporate macro-economic policies with settlement development
(b) develop and implement the national strategy of spatial development plan (RTRWN)
(c) expand manufacturing, trade and service activities to potential cities and rural settlements by promoting investment by the private sector and the community
(d) increase investments in infrastructure and services that stimulate the expansion of economic activities in potential cities and rural settlements, including those linked to other cities abroad
(e) improve the institutional capacity of the local government and enterprises in order to be able to expand the economy.
(f) Prioritize regional infrastructure and service investments based on economic opportunities and potentials.

Indicators to assess the achievement of these objectives are :

- GRDP growth of cities compare to total national GDP
- The growth of cities as national, regional, local centers and special centers indicated by the type, output, size of manufacturing, trade and services and investment in infrastructure, facilities and services
- Mobility of people, goods, money, and flows of information, including telephone conversations between cities, urban-rural, and to foreign countries
- Labour productivity in manufacturing, trade and services
- Government, private sector and community's per capita capital expenditure on infrastructure and services

Efficient, effective, transparent and environmentally sustainable settlements management

In this situation of rapid urbanization and competition, to attract investment to cities it is necessary to improve the performance of cities to become attractive for living and economic activities. To be competitive, cities (particularly large cities and urban agglomerations) have to be able to accommodate interests and overcome constraints in infrastructure and services provision that reduce their high-cost economies. Enhanced communications, and increased trade, capital flows and technological capacity would open new opportunities for cities. As public resources for improving the performance of cities are limited, it is important that settlements management should involve all stakeholders, including the private sector and the community, to make the best use of available resources without degrading environmental quality which could decrease competitiveness. Efforts that lead to efficient, effective and sustainable settlement management should include improving the flexibility of local government management and promoting environmentally-sound approaches. Programmes to achieve this include :

(a) improve organizational structure, mechanisms and transparency of local government and skills of the staff particularly for public enterprises
(b) promote local financial systems and simplify regulations and procedures to attract investments in infrastructure and services according to market mechanisms based on self-financing and competitive delivery
(c) develop and disseminate an integrated and updated urban information system
(d) promote self-sustaining and environmentally sustainable new town development that is integrated with regional development
(f) promote the efficient use of natural resources and the consumption of environmentally-friendly products

The achievement of these objectives can be measured by :

- Increased number of educated local government staff and growth of local government budgets for environmental projects
- Establishment and the operation of forum as media for information exchange and decision making in management
- Growth of investment in various economic activities, including by the private and community sectors
- Improvement in structure of organization and administration to better manage the urbanized rural areas

- Costs of traffic congestion; unsuccessful telephone calls; low service of water supply, electricity, drainage and other economic-related infrastructures and services and permits application
- Increased cost recovery for the delivery of infrastructure and services, and per capita use of water and energy, and changes in consumption pattern and activities in recycling and reuse

C.3. Commitments

Since the mid 1970s the country embarked on national development policies with principles of growth, equity and stability (The Trilogy of development). The activities mentioned above reflect this principle as part of the country's efforts to achieve sustainable development. It is the commitment of Indonesia to achieve adequate shelter for all and sustainable settlements development in an urbanizing world. This will be implemented in the spirit of the principles with special emphasis on equitable access to and distribution of resources, autonomy of local government, fulfillment of basic needs, alleviation of poverty, partnerships between all actors in development, promotion of economic development, and at the same time carrying out development in harmony with nature and the environment. Development must also be gender sensitive, especially stressing the role of women which has been positive in shelter development and will be further increased to include wider development aspects.

Part D. International Cooperation and Assistance

Substantial amount of external assistance and finance invested in settlement and housing development have so far delivered positive result. Future assistance by international and multi-national agencies will be directed to strategic programmes to accelerate the achievements of objectives in settlement and housing development outlined in section C. Cooperation and assistance will still be needed in building of institutions and capacity, funds, expertise, training, equipment and combination of these. It will also be directed to support the establishment and dissemination of urban and housing programmes to local government and communities, especially to area out side Java. Further to accelerate the decentralization of urban and housing development and management to local government, private sector and the communities conform to local needs and potentials; and to carry out pilot projects in partnership.

Certain programmes need the support of cooperation and assistance at international level to speed-up the achievement of objectives outlined in this report. These include, settlement system and housing development; socio-economic strengthening of communities; infrastructure, facilities and services development; land; urban and environmental management. In each programme there exist six development themes, namely, concepts and policies; institutions; financing system and mechanism; human resources; models, pilot project; and the implementation of projects. It should be noted that the prevailing sharing of development experience from Indonesia to other developing countries implemented within the Technical Cooperation among Developing Countries (TCDC) should be continued and internationally supported through tripartite or multi national arrangements. In this respect earlier experience showed significat success such as technical assistance in housing to Tanzania and several on the job training programmes.

D.1. Priorities of Programmes and Activities

Programmes and activities prioritized for international cooperation and assistance are grouped and outlined below.

Settlements system and housing development

The roles of settlements in regional economic development will strengthened the balanced national development and increase economic growth. It is important to establish international cooperation and assistance in the development of integrated policies and strategies for settlement and housing development. International cooperation and assistance needed are :

(a) Developing settlement and housing concept that integrate the need for shelter to the welfare of the people and support economic growth based on local condition and potential. Further increasing the role of the private and community sector to take more responsibility in the provision, operation and maintenance of the infrastructure and services in a sustainable way.

(b) Institutional development to enhance the capacity of (local) government, private sector and the community in need for assistance in institutional and capacity building, stressing the community based approach.
(c) Financial development with co-financing approaches between public and private sector for infrastructure and services delivery. It is important to include informal financing system such as *arisan* (community revolving funds) and self built activities to broaden the financial base.
(d) In human resources, it is important to develop training programmes for local government staff, private sector and the community through apprenticeship and internship in community-based and co-development approaches.

Socio-economic strengthening of communities

The promotion of enabling strategy to support improvement of government, the private and community sector's socio-economic potential also need international cooperation and assistance in the area of :

(a) development of policies, strategies and mechanism to strengthen the link between formal and people's economy (*informal* sector) including cooperatives, small, medium and large-scale economic activities supported by legal basis and forum for twin track communication.
(b) improvement of incentives to increase the number of formal financial institutions that provide affordable credits to small-scale enterprises and low-income groups.
(c) training programmes in human resources development to support low-income groups and entrepreneurs improving their skills and ability to make themselves gradually self reliance in their activities. Existing credit system in poverty alleviation programme including the *IDT* programme should be included.

Development of infrastructure, facilities and services

Programmes of basic infrastructure, facilities and services provision such as the Integrated Urban Infrastructure Development Programme (IUIDP), Urban development Programme (UDP) including KIP will be continued and increased.

Cooperation and assistance will be needed in :

(a) concepts and approaches development to integrate IUD/UP to economic-generating activities and housing development that promote partnership of local government, private sector and the community
(b) improvement of financial management to promote self-financing and stimulate competitive delivery
(c) development of policies and plans for integrated and energy-efficient mass transport system particularly for large cities, urban agglomerations and between human settlements
(d) development of quality and competency of human resources to be able to deliver efficient and effective infrastructure, facilities and services through training and apprenticeships
(e) development of strategic infrastructure and services, such as harbours, ports, telecommunication, and power-generation.

Improvement of land management

The central issue that need to be addressed is the management of urban land. In this regard, activities that need international cooperation are :

(a) development of legal basis to promote participatory approach in land-use management, particularly for fast-growing areas
(b) development of instruments to promote productive use of space and land and to recover public investments by capturing land values increased derived from speculations
(c) development of land banking and land consolidation system through partnership between government, private sector and the community

Improvement of urban management

This is to increase the competitiveness of urban areas for investments and living. External cooperation and assistance is needed to support the development of policies and strategies to improve the efficiency and effectiveness of urban management, particularly for fast-growing cities and conurbation. In more specific terms, international cooperation and assistance is needed to include :

(a) improvement of the structure, administration procedures, regulations of the (local) government, particularly in fast-growing and metropolitan areas where development occurred in many administrative boundaries.
(b) development of competitive delivery of public infrastructure, facilities and services through improvement and simplification of regulations and procedures on urban management
(c) development of concept and implementation of people's participation in urban and housing development

Improvement of environmental management

The aims is to improve the urban environmental quality and promote sustainable natural resources. Activities in need of cooperation and assistance include :

(a) development of policies and strategies on urban environmental management, including participatory approach, incentive and disincentive for efficient use and conservation of energy and water
(b) improvement of capacity and capability of local environmental agencies and development of community-based environmental management with income-generating activities
(c) improvement of updated and accessible environmental information system to public
(d) development and financing of technologies for waste treatment and environmental auditing activities

International cooperation and assistance are also necessary for the expansion of environmental-related infrastructure, monitoring water and air quality, and the development of appropriate and affordable technologies for waste treatment and means for safe disposal.

D.2. Types of Cooperation and Assistance for capacity building

Capacity building aims at having a strong, capable, accountable and innovative human settlement institutions and human resources . As urban and housing development are the responsibility of all, capacity building should be targeted to government, private sector and the community including NGOs, CBOs. etc. This includes institutional development, improvement of financing system and human resources development.

As mentioned earlier, several types of international cooperation and assistance is needed to supports programmes and activities especially capacity building at the local level. However, the cooperation and assistance should not increase existing burden of external loan that in the longer term might deliver counter productive impacts. Furthermore, loan that has technical assistance component, will mainly be used to support projects implementation that are cost-recoverable. Exchanges of personnel through cooperation among countries, namely south-south countries, north-south and ASEAN countries should seriously be taken into account and pursued.

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National Committee of Habitat II consists of :

Chairman	:	State Minister for Housing
Vice Chairman I	:	Director General for Foreign Relation Affairs, Department of Foreign Affairs
Vice Chairman II	:	Director General for Human Settlement, Department of Public Works
Vice Chairman III	:	Deputy VII, Foreign Cooperative Affairs, State Minister of National Development
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9. Assistant V, Public Participation Development, State Minister of National Development
10. Assistant II, City Division, State Minister for Agrarian
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12. Assistant I, State Minister for Women's Role
13. Assistant IV, Population Mobility Direction, State Minister for Population
14. Deputy of Statistic Production and Population, Central Bureau of Statistic
15. Head, Bureau for Technical Cooperation, Secretary of Cabinet
16. Secretaty General of Inter Indonesian Municipality Organization
17. President Director of National Urban Development Corporation
18. President Director of State Savings Bank
19. Chairman of Centre Workers Cooperative
20. Chairman of Family Welfare Movement Central Team
21. Chairman of Association of Developers
22. Secretary General of National Association of Indonesian Consultants
23. Executive Director of Association for Cooperative Housing
24. Professor Ir. Johan Silas
25. Drs. Ferry Sonneville

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Editor :

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KANTOR MENTERI NEGARA
PERUMAHAN RAKYAT

Jakarta, 28 February 1996

Number: 25/UM. 01 01/A.I/II/96

To: Mr. Mark Hildebrand, Director Program Coordination
Habitat II Secretariat PO Box 30030, Nairobi, Kenya

Re: Indonesian National Report for Habitat II

Dear Mr. Hildebrand,

We are pleased to send you the Indonesian National Report for Habitat II including the annexes. The National Committee for Habitat II has approved this report. We hope that it will be useful to Habitat as it has benefited us. In this regard, we would like to thank UNCHS for the financial support for Habitat II in-country preparations and the drafting of this report.

Please kindly forward the attached letter and the report on Indonesian Human Settlement Indicator including the annexes to Mr. Joe Flood. We thank you for your kind attention and assistant and looking forward to meeting you in Istanbul.

Yours sincerely,

Suyono
Assistant I to State Minister for Housing
As Secretary of National Committee for Habitat II

Cc:
HE State Minister for Housing, as a report
Mr. C. Jan Kamp, Resident Representative UNDP, Jakarta
Mr. Jean-Yves Barcelo, Coordinator in-country preparation

KANTOR MENTERI NEGARA
PERUMAHAN RAKYAT

INDONESIA

Jakarta, 28 February 1996

Number: 25/UM 01 01/A.I/II/96

To: Mr. Joe Flood,
Coordinator, Indicator Program, TCD
UNCHS Habitat, PO Box 330030, Nairobi, Kenya

Re: Human Settlement Indicator in Indonesia.

Dear Mr. Flood,

We are pleased to send you the Indonesian Human Settlement Indicator including the annexes. Please kindly feel free to use the data for the Global Indicator Database. We hope that it will be useful to Habitat II as it has benefited us. In this regard, we wish to thank UNCHS for the financial support for Habitat II in-country preparations and the drafting of this report.

We will send you the required slide as soon as possible. We thank you for your kind attention and assistant and looking forward to meeting you in Istanbul.

Yours sincerely,

Suyono
Assistant I to State Minister for Housing
As Secretary of National Committee for Habitat II

Cc:
HE State Minister for Housing, as a report
Mr. C Jan Kamp, Resident Representative UNDP, Jakarta
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REPUBLIC OF INDONESIA

NATIONAL REPORT FOR

HABITAT II

ANNEX 1

HUMAN SETTLEMENT INDICATOR

Final Draft
February 1996

National Committee for Habitat II
Jalan Kebonsirih 31, Jakarta, Indonesia

Tabel of content

CHAPTER I

INTRODUCTION

This paper is a part of the Indonesian National Report for Habitat II. The objective of this paper is to provide statistical data for ilustrating the curent urban and housing condition in Indonesia. These indicators can then be used as input to the formulation of National Action Plan. As Habitat II participanting country, Indonesia prepared a National Report on the current conditions of its urban settlements, covering both the problems currently faced as well as proposed development programs. Adequate and reliable data are therefore needed to demonstrate existing conditions comprehensively. These indicators are based from the UNCHS indicator program. The State Ministry for Housing and the Central Berau for Statistic have colaborately composing this report.

More specifically, this paper will provide:

a. The housing and urban key indicators required.
b. A brief summary of current housing and urban conditions in Indonesia.
c. Problems experienced in collecting data, and possible solutions.
d. Issues faced in the use of the standard UNCHS (United Nations Centre for Human Settlements) indicators in Indonesia.
e. Design and planning of the institutional development of housing and urban indicators both at regional and national levels.

This report will be divided into five sections. The first section, this section, presents the background, objective, target results, layout of the report, and methodology, which encompasses methods of data collection, data compilation, and analysis, together with data sources and data source agents. Section two explains problems encountered in data collection, both technical and institutional. Section three shows the results of the compilation of indicators, divided into urban indicators and housing indicators. Section four illustrates housing and urban conditions in six cities as representative of other cities, and also presents some existing national indicators. Section five elaborates some recommendations for future housing and urban indicators, development planning and institutional structures , at both the national and regional level.

Data Coverage

The construction of the indicators employed data some existing data from established surveys. Secondary data collection will be conducted in six cities: DKI Jakarta, Bandung, Semarang, Surabaya, Medan and Banjarmasin. These cities have been chosen for two reasons. First, the selected cities are a representative sample of Indonesian cities as a whole in terms of the Socio-Economic National Survey (as the main annual household survey in Indonesia). Second is the consideration of time limitation.

To simplify the field work, the definition used of "city" in this survey follows administrative boundaries rather than geographical boundaries. Classification of cities by geographical boundary is in most cases difficult to apply, particularly where urban areas have agglomerated to form conurbations. It also needs more detailed information on the specific region which is served by a particular city (i.e. its hinterland).

Method

Data was compiled using two approaches:

1. Literature review of relevant publications and data sources.
2. Interviews with related local institutions such as Statistical Offices, Regional Planning and Development Boards (*Bappeda*), City Planning Agencies (*Dinas Tata Kota*), and Housing Agencies (*Dinas Perumahan*). The rationale of this report is to illustrate housing and urban settlement conditions in Indonesia. The method used for this will be descriptive analysis.

Data Sources
Data used in this report consists of both primary data compiled by the Central Bureau of Statistics and secondary data from related institutions ie. Regional Planning and Development Boards (*Bappeda*), City Planning Agencies (*Dinas Tata Kota*), Housing Agencies (*Dinas Perumahan*), Regional Economic Boards (*Badan Perekonomian Daerah*).

Relevance of the Indicators
This isues are still in discusion, for it need feed back from the local autority concernd and expert on the filled. A more rigoruos review on the relevance of these indicator for Indonesia are yet to be done.

As explained in Chapter II, most of the indicators supplied by UNCHS are relevant to Indonesian circumstances and have been compiled by the Central Bureau of Statistics and other organizations. However, there are some indicators that are dificult to compile in Indonesia. Efforts have been made to assess and modify these indicators so that useful, comparable information can still be compiled.[N J1]

The mechanism to review the indicators are planned as follows:
a. Checking both indicators which have already exsist as well as those that have not been compiled yet. This effort can only be done by investigating all related indicators produced by the Central Bureau of Statistics and and other institutions.
b. Assessing the existing concept, definition and survey methodology of the existing indicators.
c. Modifying the concept and methodology of some indicators in order to make them relevant to Indonesian conditions.

Development and Institutionalization
These housing and urban indicators can be used as a comprehensive method of monitoring and setting out housing and human settlement policy in Indonesian. However, they need to be adapted and developed further. Therefore, we need to perform an evaluation study to identify the supporting indicator data needed to supplement the existing data. Using this study, the compilation of workable, comprehensive indicators can be constructed systematically. In addition, we need to formulate the strategy to provide the unavailable indicator in regular based. A study need to be done to identify the appropriate institutions to collect each indicators.

CHAPTER II

PROBLEMS ENCOUNTERED IN COMPILING THE INDICATORS, AND THEIR SOLUTIONS

Some problems were encountered in the compilation of the housing and urban indicators conceived by UNCHS. In general, these problems can be classified into two groups : institutional and technical.

1. Institutional Problems

a. Most institutions which produce housing and urban data do not have a relevant and up-to-date data system.
b. Some necessary statistics are not collected or monitored in Indonesia..
c. Collecting the required statistics demands stable coope-ration between a number of institutions at both regional and national levels, through effective teamwork.
d. The true definition of the indicators may not be fully comprehended by the responsible institution at the regional level, due to time limitations and the tightness of their work schedule

2. Technical Problems

For those data not yet collected through the survey or census, a possible solution is to make modifications or use an alternative approach to encounter those indicators. There are some indicators which are not possible to calculate since they are not relevant to Indonesian conditions. An alternative is to develope substitute indicators.

3. Note on Modification of Indicators

There are some indicators which have to be modified with Indonesian conditions. These are: Indicators D8, D9, 2, 4, 5, 6, 14. 15, 20.2, 24, H7 and H10. Below are the concept and definition employed for the aforementioned indicators:

Indicator D8: Per Capita GDP (urban)
Formula:

$$Xt = \frac{\text{GDP in year t}}{\text{ä population in year t}}$$

'' 1icator 7 : Household expenditure as used in the economic census

Indicator D9: Tenure Type
Base to National Socio-Economic Survey (*Susenas*):
- "Owned" means a building/house owned by the head of household or otherhousehold members
- "Formal rent" means a building/house occupied based on a legal contract between the owner and occupiers
- "Informal rent" means a building/house occupied based on a regular rent
- "Lease" means a building/house rented for a certain period and at the end of that period that building will be possessed by the renters
- "Official" means a building/house provided by the corporation for the employee
- "Rentfree" means useing a house from others without any payment
- "Other" means a building/house which does not fall in any other category.

Indicator 2: Informal Employee

- "Self employed" means running a business by taking its risks without other people's assistance
- "employed assisted by family members/temporary workers" means running a business by taking its risks with the assistancey of family members or temporary workers
- "Family worker" means a person who works or helps a business without receiving any payment/usage either money or goods

Indicator 4: Child Mortality Rate (CMR)

refers to the rate of mortality of children under 5 years of age per annumper 1000 births

Formula:

$$\text{CMR 93 Urban} = \frac{\text{CMR 93 Indonesia}}{\text{CMR 90 Indonesia}} \times \text{CMR 90 Urban}$$

Indicator 5: School Classroom

Formula:

1.

$$Xt = \frac{\text{ä Pupils in primary school in year t}}{\text{ä Classes in primary school in year t}}$$

2.

$$Xt = \frac{\text{ä Pupils in junior high school in year t}}{\text{ä Classes in junior high school in year t}}$$

Indicator 6: Crime Rates

"Crime" refers to offences which is liable to punishment according to the Penal Code..

Formula:

1.

$$Xt = \frac{\text{ä Murders in year t}}{\text{ä Population in year t}} \times 1000$$

2.

$$Xt = \frac{\text{ä Burglary, theft and Robbery in year t}}{\text{ä Population in year t}} \times 1000$$

Indicator 13: Expenditure on Road Infrastructure

It is assumed that this is equal to expenditure on Road Infrastructure Sector which is calculated from Statistical Finance of Local Government Provinces and Municipalities

Indicator 14: Automobile Ownership

Formula:

$$Xt = \frac{\text{ä Passenger cars in year t}}{\text{ä Population in year t : 1000}}$$

Note:
"Passenger cars" refers to all vehicles used or adapted to be used for the carriage of maximum 8 passengers excluding the driver's seat.

Indicator 15: Percentage of wastewater treated
Formula:

$$Xt = \frac{\text{ä Household urban with septic tank x 0.2}}{\text{ä Household urban}} \times 100$$

Indicator 20.2: Sources of Income

- "Regional taxes" are expenses taken by regional government according to constitutional and regional regulations. This collection is imposed on all tax objects such as persons and moving/unmoving things.
- "Regional retribution" is an expense due to the use or gaining of services given by region or in other work. Regional retribution is a payment of services of facilities directly given and real.
- "Local government enterprises profit" is income gained from local government enterprises profit share, including those from regional development bank profit and profit share from other local government enterprises
- "Office income" is income from regional officials excluding those from tax on regional retributions, for example Agricultural Regional Officials, Health Regional Officials and Fishery Regional Officials
- "Other income", including profit from Selling Property ,[FA2] Selling Second Hand Goods, installation of motorized vehicles, installation of houses built by regional government and income from clearing account (regional treasury)
- "Profit sharing of taxes/non taxes":
  1. Profit sharing of taxes encompassing income from Building and Land Tax (PBB) and profit sharing from other taxes
  2. Profit sharing of non taxes encompassing Forest Product Retribution, Forest Exertion Retribution, Clove Rehabilitation Contribution, Copra Rehabilition Fund, Fuel and Oil Compensation, Landrent and others
- "Contribution and Aid"
  a."Contributions" are regional incomes derived from central government Level I Regional Government and other contributions arranged by constitution regulation
  b. "Aid" is all aids regulated by presidential instruction for Level I and Level II Regional Government
- Loan
- Finance and accounting

Indicator 24: Wages in The Budget
Formula:

$$Xt = \frac{\text{ä Employee expenses in year t}}{\text{ä Local government expenditure in year t}}$$

Indicator H.7: Infrastructure Expenditure

It is assumed that this is equal to expenditure of Transportation and Local Development Sector which is calculated from Statistical Finances of Local Government Provinces and Municipalities.

Indicator H.10: Housing Investment

It is assumed that this is equal to expenditure of Public Housing and Settlement divided by Total Expenditure for Development which is calculated from Statistical Finances of Local Government Provinces and Municipalities

CHAPTER III

RESULTS OF INDICATOR COMPILATION

(Notes and data source can be found in the workshet)

KEY INDICATORS
PROGRAMME MONITORING HUMAN SETTLEMENTS

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	A. BACKGROUND DATA								
D.1	Land Use	km^2 1994							
	1.1 Metropolitan Area (MA)								
	1. Total Area			660.94	326.27	167.29	421.00	253.47	72.00
	2. Residential (formal)			388.13	93.54	-	268.10	55.06	23.05
	3. Residential (informal)			80.33	23.39	-	116.67	10.29	10.95
	4. Business			44.09	24.10	-	26.44	5.40	-
	5. Agricultural			75.30	109.42	40.13	8.99	137.91	41.82
	6. Transport			52.76	47.95	-	0.22	0.09	3.32
	7. Other			20.33	31.97	127.16[1)]	0.58	44.83	-
	1.2 Urban Agglomeration (UA)								
	1. Total Area								
	2. Residential (formal)								
	3. Residential (informal)								
	4. Business								
	5. Agricultural								
	6. Transport								
	7. Other								
D 2	Population by Sex	Person 1993							
	2.1 City Proper			8,980,500	2,411,417	1,819,536	1,809,700	1,067,218	487,241
	1. Male			4,514,600	1,171,996	918,211	907,600	525,298	243,829
	2. Female			4,465,900	1,239,421	901,145	902,100	550,920	243,412
	2.2 Metropolitan Area			20,229,026					
	1. Male			10,169,362					
	2. Female			10,059,664					
	2 3 Urban Agglomeration		61,900,998	13,047,667					
	1 Male		30,574,818	6,618,167					
	2. Female		31,326,180	6,429,500					
D.3	Population Growth Rate	Percentage 1990-1994	3.77	2.11	1.73	2.76	1.95	1.51	2.09
D.4	Woman Headed Households	Household 1990							
	Households headed by women City		1,596,700	203,952	101,192	71,972		40,429	8,333
D.5	Average Household Size	Person/ Household 1993	4.44	4.63	4.51	4.65	5.71	4.52	5.00

Note: 1) Including residential, business and transport area

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D.6	Household Formation Rate	Percentage 1993-1994	2.67**)	3.40**)	2.47**)	4.16**)	3.02**)	2.53**)	3.81**)
D.7	Household Expenditure Distribution Household expenditure by quantile expenditure range and average expenditure per month	US $ 1993							
	7.1 Quantile 1								
	1. Interval		171 - 4,045	259 - 4,045	233 - 1,712	180 - 958	196 - 997	143 - 906	157 - 1,037
	2. Average income		284	482	389	282	294	251	244
	7.2 Quantile 2								
	1. Interval		116 - 170	171 - 258	143 - 232	129 - 179	138 - 195	98 - 142	116 - 156
	2. Average income		140	208	183	152	162	117	134
	7.3 Quantile 3								
	1. Interval		84 - 115	130 - 171	99 - 142	96 - 128	105 - 137	78 - 97	90 - 115
	2. Average income		99	150	119	111	121	87	102
	7.4 Quantile 4								
	1. Interval		58 - 83	95 - 129	66 - 98	68 - 95	80 - 104	55 - 77	70 - 89
	2. Average income		71	112	82	83	92	66	79
	7.5 Quantile 5								
	1. Interval		≤ 57	≤ 94	≤ 65	≤ 67	≤ 79	≤ 54	≤ 69
	2. Average income		42	73	48	49	61	42	55
D.8	City Product per Person	US $ 1992	678	2,843	1,085	739	925	576	809
D.9	Tenure Type	Percentage 1992							
	9.1 Owned		67.81	60.18	54.04	60.25	59.42	65.75	59.54
	9.2 Formal Rent		10.38	20.23	17.65	21.52	13.08	13.38	2.96
	9.3 Informal Rent		8.47	6.42	12.94	4.30	13.94	8.75	22.37
	9.4 Lease		1.08	1.17	0.88	0.61	0.67	0.75	1.86
	9.5 Official		3.76	5.64	5.15	2.97	4.04	1.50	2.41
	9.6 Rentfree		5.16	2.38	6.32	7.58	6.44	2.63	5.15
	9.7 Other		3.34	3.98	3.01	2.77	2.40	7.25	5.70
	B. URBAN INDICATORS								
	1. SOCIOECONOMIC DEVELOPMENT								
1	Households below poverty line Urban	Households 1993	5,865,011	164,860	26,447	42,883	27,592	16,163	12,213

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.1	Women-headed households below the poverty-line	Percentage 1993	11.83	7.54	3.08	6.40	3.63	5.39	10.11
2	Informal Employment	Percentage 1993	43.61	33.31	34.67	32.03	41.18	35.28	47.80
3	Hospital Beds	Person 1993	1,629	611	516	771	356	465	403
4	Child Mortality	Permil 1993	58	33	52*)	73*)	50*)	53*)	74*)
5	School Classrooms:	Children/ Room							
	5.1 Number of school children per classroom in primary school	1993	30.23	42.59	35.00	31.65	37.54	34.14	32.12
	5.2 Number of school children per classroom in secondary school		38.06	49.96	43.00	54.31	39.22	44.81	39.24
6	Crime Rates	Crime/ Thousand Population							
	6.1 Number of reported homecide annually per 1000 populations for murder	1993	0.01	0.01	0.02	0.00*)	0.02	0.01	0.02
	6.2 Number of reported crimes annually per 1000 populations for theft		0.37	2.00	1.14	0.21	2.12	0.45	0.24
	2. INFRASTRUCTURE								
7	Households Connection Levels	Percentage 1993							
	7.1 Water		14.71	14.71	29.26	28.11	51.00	43.00	91.20
	7.2 Sewerage		-	-	-	27.00	19.00	-	-
	7.3 Electricity	1992	51.86	98.82	97.49	97.95	92.82	94.69	97.82
	7.4 Telephone		2.14	14.01	26.25	25.36	25.11	18.70	56.90
8	Access to Potable Water	Percentage 1993	60.28	92.64	99.03	86.30	93.75	88.17	93.70
9	Consumption of Water	Litre/Person per Day	149.87	188.35	151.32*)	135.52*)	165.68*)	161.94*)	137.59*)

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
10	Median Price of Water, Scarce Season	US $/100 l 1993			0.49	0.37	0.67	0.36	1.82
	3. TRANSPORT								
11	Modal Split	Percentage 1993							
	Proportion of work trips undertaken by:								
	11.1 Private car			7.62	12.00	11.70	10.08	10.05	10.43
	11.2 Train or tram			0.18	-	-	3.00	-	-
	11.3 Bus or minibus			37.43	23.00	17.20	40.69	14.26	12.26
	11.4 Motorcycle			10.58	36.00	14.00	40.22	31.68	77.31
	11.5 Bycycle, walking and other			44.22	29.00	57.10	-	44.01	-
12	Travel time	Minute 1993		82	23	29	30	25	37
13	Expenditure on Road Infrastructure	US $/Capita 1993		11.56	0.19	2.01	3.38	2.44	2.16
14	Automobile Ownership	1993 Unit/Permil	28	68	47	42	39	37	33
	4. ENVIRONMENTAL MANAGEMENT								
15	Percentage of Wastewater Treated	Percentage 1993	10.72	15.74	9.00	6.24	15.86	15.27	2.82
16	Solid Waste Generated	1993							
	16.1 Solid waste generated per person, in cubic metres per annum	m^3		1.17	0.21	1.14	0.12	0.91	0.49
	16.2 Solid waste generated per person, in tonnes per annum	ton		0.94	0.17	0.91	0.10	0.73	0.39
17	Disposal Methods for Solid Waste	Percentage 1993							
	Proportion of solid wastes by weight disposed to:								
	17.1 Sanitary landfill			-	-	0.79	-	65.00	1.10
	17.2 Incinerated			24.08	42.46	0.15	-	-	-
	17.3 Open dump			61.05	32.89	87.49	76.71	-	60.00
	17.4 Recycled			9.90	9.94	6.07	8.69	25.29	-
	17.5 Other			3.98	14.71	5.50	14.60	9.71	38.90

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
18	Regular Solid-Waste Collection	1993							
	18.1 Proportion of households enjoying regular waste collections	Percentage		84.03	87.25	96.68	19.00	69.00	70.20
	18.2 Median number of times per month waste is collected	Frequency		30	30	30	12	30	15
19	Housing Destroyed	Percentage 1993		0.36	0.10	0.10	0.56	0.14	1.11
	5. LOCAL GOVERNMENT								
20	Major Sources of Income								
20.1	Local government per-capita income	US $ 1993/1994		670	82	60	27	33	6
20.2	Sources of Income:	Percentage 1993/1994							
	2.1 Taxes			43.60	12.39	9.57	28.65	14.45	36.00
	2.2 User charges			8.03	18.72	35.19	32.00	11.39	24.79
	2.3 Other own-source income			0.77	15.28	30.43	6.36	18.45	39.25
	3.4 Transfers from higher levels of government			29.95	20.86	1.74	26.41	33.76	-
	2.5 Borrowings			12.43	-	-	6.59	3.39	-
	2.6 Other income			5.22	32.30	23.07	-	19.98	-
21	Per-capita Capital Expenditure	US $ 1993/1994		16	9	6	8	9	6
22	Debt Service Charge	Percentage 1993/1994	26.82	16.7	3.94	3.81	37.07	6.70	13.92
23	Local Government Employees	Employee/ Thousand Population 1993	20.63	8.43	7.10	4.52	3.05	5.00	6.90
24	Wages in The Budget	Percentage 1993/1994	17.40	27.98	21.79	39.42	31.46	25.00	9.95
25	Contracted Recurrent Expenditure Ratio	Percentage 1993		30.00	30.23	26.36	2.00	4.90	2.00

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
26	**Government Level Providing services** **Which types of agencies deliver urban services to the population** **26.1 Water**	**Sign check (√)**							
	1. National			-	-	-	-	-	-
	2. Provincial			√	-	-	√	-	-
	3. Municipality			-	√	√	-	√	√
	4. Semi-Public			-	-	-	-	-	-
	5. Private			-	-	-	-	-	√
	26.2 Sewerage								
	1. National			-	-	-	-	-	-
	2. Provincial			-	-	-	-	-	-
	3. Municipality			-	-	√	-	-	-
	4. Semi-Public			-	-	-	-	-	-
	5. Private			-	-	-	-	-	-
	26.3 Refuse Collection								
	1. National			-	-	-	-	-	-
	2. Provincial			√	-	-	-	-	-
	3. Municipality			-	√	√	-	√	√
	4. Semi-Public			-	-	-	√	-	-
	5. Private			√	√	-	-	-	-
	26.4 Electricity								
	1. National			√	√	√	√	√	√
	2. Provincial			-	-	-	-	-	-
	3. Municipality			-	-	-	-	-	-
	4. Semi-Public			-	-	-	-	-	-
	5. Private			-	-	-	-	-	-
	26.5 Telephone								
	1. National			-	-	-	-	-	-
	2. Provincial			-	-	-	-	-	-
	3. Municipality			-	-	-	-	-	-
	4. Semi-Public			√	√	√	√	√	√
	5. Private			-	-	-	-	-	-
	26.6 Public or Mass Transport								
	1. National			√	√	√	√	√	-
	2. Provincial			√	-	-	-	-	-
	3. Municipality			-	-	-	-	-	-
	4. Semi-Public			√	√	√	-	√	-
	5. Private			√	√	√	√	√	√

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	26.7 Emergency (fire, ambulance)								
	1. National			✓	✓	✓	✓	✓	✓
	2. Provincial			✓	-	-	✓	-	-
	3. Municipality			-	✓	✓	✓	✓	✓
	4. Semi-Public			-	-	-	-	-	-
	5. Private			✓	✓	✓	✓	✓	✓
	26.8 Education								
	1. National			✓	✓	✓	✓	✓	✓
	2. Provincial			✓	✓	✓	-	✓	✓
	3. Municipality			-	-	-	-	-	-
	4. Semi-Public			-	✓	✓	-	✓	-
	5. Private			✓	✓	✓	✓	✓	✓
	26.9 Health Care								
	1. National			✓	✓	✓	✓	✓	✓
	2. Provincial			✓	✓	✓	-	-	-
	3. Municipality			-	✓	✓	✓	✓	✓
	4. Semi-Public			-	-	-	-	-	-
	5. Private			✓	✓	✓	✓	✓	✓
	26.10 Public Housing								
	1. National			✓	✓	✓	✓	✓	✓
	2. Provincial			✓	-	-	-	-	-
	3. Municipality			-	✓	✓	-	-	-
	4. Semi-Public			-	-	-	-	✓	-
	5. Private			-	-	-	-	-	-
	26.11 Recreation or Sports Facilities								
	1. National			✓	-	✓	-	-	-
	2. Provincial			✓	-	✓	✓	-	-
	3. Municipality			-	✓	✓	✓	✓	✓
	4. Semi-Public			✓	✓	-	-	✓	-
	5. Private			✓	✓	✓	✓	✓	✓

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
27	**Control by Higher Levels of Government**	Sign Check (√)							
	1. Can higher levels of government (national, state/provincial) close the local government (e.g. appoint an administrator or a new council, call new elections)?								
	1.1 Yes			√	√	-	-	-	√
	1.2 No			-	-	√	√	√	-
	2. Can higher levels of government (national, state/provincial) remove councillors from office?								
	2.1 All			-	-	-	-	-	-
	2.2 Some			√	√	√	√	√	√
	2.3 None			-	-	-	-	-	-
	3. Can the local government, without permission from higher governments set local tax levels?								
	3.1 All			-	-	-	-	-	-
	3.2 Some			-	-	-	-	-	-
	3.3 None			√	√	√	√	√	√
	4. Can the local government, without permission from higher governments set user charges for services?								
	4.1 All			-	-	-	-	-	-
	4.2 Some			√	√	√	√	√	√
	4.3 None			-	-	-	-	-	-
	5. Can the local government, without permission from higher governments borrows funds?								
	5.1 Yes			-	-	-	-	-	-
	5.2 No			√	√	√	√	√	√

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	6. Can the local government, without permission from higher governments choose contractors for projects? 6.1 All 6.2 Some 6.3 None			- √ -	- √ -	- √ -	- √ -	- √ -	- √ -
	7. Is the amount of fund transfers from higher governments known in advance of the local budget setting process? 7.1 All 7.2 Some 7.3 None			√	√ - -	√ - -	√ - -	√ - -	√ - -
	C. HOUSING INDICATORS 6. AFFORDABLE AND ADEQUATE HOUSING								
H.1	House Price to Expenditure Ratio	1993		9.87	8.62	11.95	5.54	5.39	3.95
	1.1 Median free-market price of a dwelling unit	US $		24,272	16,990	19,417	9,709	7,282	5,825
	1.2 Median annual household expenditure	US $		2,460	1,970	1,624	1,752	1,351	1,474
H.2	House Rent to Expenditure Ratio	1993	0.19	0.24	0.21	0.19	0.18	0.17	0.16
H.3	Floor Area per Person	m^2 1993	14.40	15.04	11.47	13.11*)	13.91	12.00	6.43
H.4	Permanent Structures	Percentage 1993	53.66	52.50	78.50	64.30	55.26	56.71	18.28
H.5	Housing in Compliance	Percentage 1993	20.00	16.28	55.00	25.87	10.00	65.00	48.00
	7. HOUSING PROVISION								
H.6	Land Development Multiplier	Percentage 1993	500.00	800.00	600.00	700.00	300.00	500.00	140.00

No.	Indicators	Unit/ Year	Indonesia	DKI Jakarta Province	Municipalities				
					Surabaya	Bandung	Medan	Semarang	Banjarmasin
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
H.7	Infrastructure Expenditure	US $/Capita 1992/1993	5.93	10,022	6,635	5,496	7,736	1,858	4,105
H.8	Mortgage to Credit Ratio	1993	4.40	4.40	4.40	4.40	4.40	4.40	4.40
H.9	Housing Production	Permil 1993	36.50	41.48	29.52	48.58	33.42	29.86	39.75
H.10	Housing Investment	Percentage 1993	2.97	3.07	2.78	2.38	1.13	1.19	3.04

Note: *) Province Data
**) Projection of Province Data

Source: a. Susenas 1993
b. Municipalities in Figures 1993
c. National Income of Indonesia 1988-1393
d. Statistical Pocketbook of Indonesia 1994
e. Women Headed Households Statistics 1990
f. Demography Parameter Estimation of Indonesia (1993-1998)

CHAPTER IV

ANALYSIS OF THE URBAN AND HOUSINGCONDITIONS

At the end of the First Long Term Development Plan in 1992 the Indonesian population was around 186 million. The annual population growth for the period 1971 (to 1992 was 2.17 percent. For the 25 years of the First Development Program, the growth of the population has therefore steadily decreased. However, the urban population growth rate has been even faster (5.62 percent) than this overall national population growth rate.

The high urban population growth rate is inevitably accompanied by an increase in the number of households. For the same period (1971-1992) the overall national growth in the number of households was around 2.56 percent per annum. The household growth in urban areas, however, increased at more than twice that figure, at around 5.69 percent per annum. As a consequence, the total number of dwelling units has increased at around 2.73 percent per year, an absolute increase from 22 million units in 1971 to 38.7 million in 1992. During the First Development Program, the total number of houses built was 1;919,107 units. These were built by various means : the state housing corporation (*Perum Perumnas*), private sector real estate developers, cooperatives, and (the majority) directly by people themselves either individually or collectively.

Housing problems exist on a national scale, and they need to be resolved immediately. An example of the housing problems faced by Indonesia is unregulated sporadic housing which needs to be properly controlled, otherwise it will lead to the existence of unplanned slum housing. [FA3] Other problems include poor access to decent housing by low income groups as compared to high income groups; the unaffordability of house prices; and immense cost of land for housing development.

: Strategic Cities in Indonesia (PJP II)

	Metropolitan	large City	medium City	small City
Sumatera	2	2	7	7
Java	8	4	12	3
Kalimantan	-	1	5	6
Sulawesi	1	-	2	4
Nusa Tenggara	-	-	3	7
Maluku & Irian Jaya	-	-	2	5
Indonesia	11	7	31	32

Source : Repelita V

During the period 1971 to 1990 the distribution of cities in Indonesia evolved towards an integrated and dispersed system of cities. The development of cities in Indonesia has had a tendency to create mega-urban agglomerations. An example is Jabotabek, which consists of Jakarta, Bogor, Tangerang, and Bekasi. The population growth rate of Jakarta is very high, causing growth to spill outside the city's administrative limits into the surrounding region of Botabek (the administrative areas of Bogor, Tangerang and Bekasi). Botabek (i.e. Jabotabek not including Jakarta) has become the prime destination for migrants to the Jakarta agglomeration, since land prices are much lower than in Jakarta. Limitations on the development of some industries in Jakarta have caused the shift of industrial development from Jakarta to Botabek.

Some other examples of urban agglomerationsin Indonesia are :

a. Medan (central city) - Lubuk Pakam, Binjai, Stabat and Tebing Tinggi (North Sumatera)
b. Bandung (central city) - Cimahi, Lembang, Banjaran and Majalaya (West Java)
c. Semarang (central city) - Kendal, Demak, Ungaran and Salatiga (Central Java)
d. Surabaya (central city) - Lamongan, Gresik, Sidoarjo, Gempol (East Java) and

Problems of urban development in Indonesia can be distinguished as two types:

1. Macro problems

- A tendency towards the growth of metropolitan agglomerations (i.e. the formation of "primate cities"), especially in Java, which reduces the ability of those cities to function as catalysts of regional development.
- Meanwhile, small cities that grow around the central city (for instance, Bogor, Tangerang and Bekasi in the example of Jakarta), are not self sufficient cities. This is shown by the fact that many inhabitants of these small cities enjoy public service facilities in their central cities. This has resulted in complicated problems for the central city, such as increased traffic congestion, reduced quality of urban services, and so on.
- In addition, along with the growth of urban areas, the problem of urban management is becoming more complex. Government funds allocated to fulfill the need for urban services are decreasing relative to the increasing need for those services. The implementation of urban decentralization policy is therefore increasingly important.

2. Micro problems

In micro terms, cities are perceived as providing shelter. Micro problems which have already occurred and are likely to continue are deficient urban infrastructure and services, problems of urban transportation, urban environmental degradation, slum area, industrial pollution and inefficienct urban land use.

The rest of this chapter discusses these micro problems in more detail.

ECONOMIC GROWTH, POVERTY & POPULATION

The role of urban areas in national development is very important in terms of the urban sector's contribution to GDP. The contribution of Indonesia's urban sector to GDP is 50% and is expected to increase to 75% in the future. The higher the proportion of urban population in a region, the higher the contribution of the urban area to the regional economy.

Contribution of Urban Sector to GDP in Indonesia

	Contribution of urban sector to GDP (1990)	Proportion of urban population (1993)
Java	68.1%	38.41%
Sumatera	15.9%	27.29%
Indonesia	50.0%	33.99%

Sources : SNPPTR (National Strategic Planning), 1994
INDONESIA : Twenty-Year Shelter Sector Review, 1995
BPS/ Compendium of Environmental Statistics of Indonesia, 1993

Per capita income has increased 5.3% from US$ 340 in 1980 to US$ 520 in 1990. This increase in economic activity has increased the socioeconomic standing of the people. Based on some indicators, increase of socioeconomic quality is indicated by increased per capita income, increased monthly expenditure to fulfill basic needs, increased life expectancy, reduced illiteracy and infant mortality rates.

Socioeconomic Indicators

Indicator	1980	1990
Per capita income (US$)	340	520
Average per capita monthly expenditure for food and non-food (US$)	4	13
Life expectancy :		
Males	53	60
Females	56	63
% of pop. aged 10 years and over who are illiterate	28.8	15.9
Infant mortality rate per 1000 live births	109	71

Sources : BPS, Indikator Kesejahteraan Rakyat, 1992
INDONESIA : Twenty-Year Shelter Sector Review, 1995

In general, economic growth in Indonesia is concentrated in several urban areas which have a better environment for industrial activities such as the availability and reliability of power, telecommunications, water supply and other public utilities, banking and credit institutions, intra and inter-urban transportation and human resources. As a result, even though economic growth is increasing, the growth is inequitable. Furthermore, disparities between both between rural and urban and between differing regionsare emerging.

In 1990, the total Indonesian population below the poverty line stood at 27.2 million, 9.4 million of whom lived in urban areas and 17.8 million in rural areas. The percentages of population below the poverty line as a whole 14.3% from the total population, with 15.2% in urban and 16.8% rural areas, were and, respectively In the period 1980-1990, the decreaseing rate of poverty in rural areas was higher than in urban areas (four times higher).

In 1993, the population below the poverty line in urban areas was 5.8 million (9.5%). In some large cities in Indonesia like Medan, DKI Jakarta, and Surabaya, the number of households below the poverty line was 27,592 (1.5%); 164,860 (1.8%); 26,447 (1.1%), respectively.

Urban Poverty

Year	Number of population below poverty line (millions)			% of total population		
	Urban + rural	Urban	Rural	Urban + rural	Urban	Rural
1980	42.3	9.5	32.8	28.8%	28.9%	28.8%
1990	27.2	9.4	17.8	15.2%	16.9%	14.4%
1993	25.9	5.9	20.9	13.7%	9.5%	16.8%

Source : BPS, Susenas [Daily KOMPAS, April 6, 1995]

The consumption level of the average urban poor in Jakarta is higher than some other large cities in Indonesia. Jakarta is the highest in terms of the ratio of average income of poor to the poverty line. This is due probably to the high cost of living in Jakarta compared to other large cities.

Table C-5
The Poor's Household Expenditure, 1993

	Average of poor's household expenditure (Rp)	Ratio of average expenditure of poor to poverty line (%)
Medan	14,358	0.82
DKI Jakarta	192,999	0.97
Bandung	14,515	0.78
Semarang	12,861	0.84
Surabaya	13,094	0.84
Banjarmasin	20,203	0.84
Indonesia	101,418	0.93

Source : BPS,

If monthly expenditure is used as an indicator of community welfare, it shows that urban population is relatively better off than rural population. Even though the low income group share of monthly expenditure increased between 1980 and 1990, the distribution of monthly expenditure in urban areas was not equal compared to in the rural areas. In 1990, from the total expenditure of Rp. 44,029 the share of the ninth and the tenth groups was 42.67%, whereas in the rural areas was 36.36%. The share of the lowest urban areas was 4.80%.
Table C-7
Percentage of Expenditure Distribution

Decile	Urban areas		Rural areas	
	1980	1990	1980	1990
Lowest	3.08	5.53	3.55	4.80
Second	4.23	4.80	4.89	5.29
Third	5.51	5.67	6.00	7.13
Fourth	5.84	5.67	6.73	7.18
Fifth	7.33	7.89	7.61	8.44
Sixth	9.04	7.89	9.52	10.01
Seventh	9.95	10.89	9.61	10.01
Eighth	11.47	10.99	12.26	10.77
Ninth	15.59	14.88	15.71	14.08
Tenth	27.96	27.79	24.12	22.28
Average	Rp 44,029		Rp 24,296	

Source : BPS, Statistik Indonesia, 1992

Economic disparities between urban and rural areas will, in turn, influence the growth of urban population. At the end of 2020 the proportion of urban population in Indonesia will be almost half of the total population. From 55 million in 1990, the urban population increased to 62 million in 1993. Most of the urban population in Indonesia is concentrated in Java and Sumatera (86% of total population).

Urban Population in Indonesia

	1990	1993
Indonesia		
Urban population (millions)	55.4	61.9
% of total population	30.9	34.0
Sumatera & Java		
Urban population (millions)	47.6	53.1
% of total population	86.0	85.8

Source : BPS/ Compendium of Environmental Statistics of Indonesia, 1993

In the 1990s, the urban population growth rate is higher than national population growth, 4.9% and 1.6%respectively. However, the urban population growth rate of some Indonesian cities like Medan, Jakarta and Surabaya was far below national urban population growth. The probable causes of this are that the area of the city is too densely populated or the price of land is too high.

Growth Rate of Urban Population in Indonesia

	Population growth rate	Growth rate of urban population
Indonesia	1.6% (1993-94)	4.9% (1980-90)
Sumatera	1.9% (1990-93)	4.3% (1990-93)
Java	1.1% (1990-93)	3.7% (1990-93)
Medan	-	1.80% (1993-94)
Jakarta	-	2.12% (1993-94)
Surabaya	-	1.17% (1993-94)

Sources : BPS/Compendium of Environmental Statistics of Indonesia, 1993
BPS, Urban Indicators
BPS, Statistik Indonesia
INDONESIA; Environment and Development, World Bank, 1994
Raymond I. Struyk *et al*, "The Market for Shelter in Indonesian Cities",1990

URBAN INFRASTRUCTURE PRESSURES

As cities in developing countries continue to grow rapidly, the need to meet increasing demands for urban infrastructure services has become an important policy problem, since failure to respond adequately to such demands will affect the productivity and quality of life in those cities. Pressure to provide services comes not only from increasing demand as a result of urban population growth but also from the need for infrastructure service on a global scale. On the one hand, infrastructure is needed to serve the basic needs of the majority of urban population, particularly the low income group, such as clean water service, sanitation and drainage. On the other hand, particularly in large cities, infrastructure is also needed to serve the needs of the global economy, such as dry ports, energy/electricity, clean water, and telecommunications with a competitive service on a global scale. Increasing urban population is not accompanied by corresponding increases in urban services, due to the limited ability of the government. This in turn causes many problems, such as lack of clean water supply, garbage, and flooding.

Urban development in Indonesia can only fulfill some urban service needs. In 1993, only 14.71% of total urban household were served by clean water, 55.29% served by electricity and 2.14% served by telecommunication network. Compared to other urban services, service of electricity is better, particularly in large cities such as Medan (93.81%), Bandung (97.32%), Semarang (91.79%) and Banjarmasin (98.40%). In terms of service of telecommunication, it can be seen that distribution of telecommunication service is inequitable. On average it only reaches 2.14% of households, whereas in the largest cities the percentages exceed this figure at least almost six times.

Lack of urban infrastructure service has a greater effect on the low income group, since this group has only weak financial capability to fulfill their urban service needs. Median prices of clean water in dry season in several large cities in Indonesia are Rp. 7.70/liter (in Bandung); Rp. 10/liter (in Surabaya) and Rp. 37.50/liter (in Banjarmasin), compared to avérage price of water from PDAM (the local government water company) about Rp.2,500/cubic meters or Rp. 2.5/liter.
Land tenancy and rights are not evenly distributed. This situation creates a feeling of insecurity amongst the people, and social conflict and poverty in urban areas. Urbanization pressure and the global economic impact bring about a shift in urban land function from social to commercial. Land has become a speculative commodity. Changes in urban land use are becoming more intensive. Even in the urban fringe real estate, industrial estates and large scale settlement (new towns) have sprung up.

High land prices, particularly in strategic locations in urban areas, and limited availability of land for housing encourage growth of the informal shelter in urban areas. In large cities such as Medan, Jakarta, and Surabaya, the area of informal shelter covers between 23 and 117 Km^2 or 7 and 27% of the total area. On the other hand, high income residents usually have several houses with large plots. The result is inefficient use of land in cities.

Urban Land Use, 1994 (km^2)

	Total area	Formal shelter	Informal shelter	Business	Agri-culture	Transport	Others
Medan	421	268	117	26	9	-	1
Jakarta	661	388	80	44	75	53	20
Semarang	253	55	10	-	138	-	45
Surabaya	326	94	23	24	109	48	32
Banjarmasin	72	23	11	-	42	3	-

Source : BPS,

Disparities in economic growth as the result of the concentration of economic activities (both industry and service) in urban areas have increased urbanization. In general, the quality of human resources of the migrants is inadequate for the demands of modern service and industrial employment opportunities, so that even though the industrialization era provides abundant and diverse employment opportunities, the available vacancies cannot be filled. The urban informal sector has become their choice of job, and those who cannot even enter the informal sector become unemployed. The informal sector in urban areas has an important role in providing employment opportunities compared. In 1993, 43.61% of all employees in urban areas worked in the informal sector.

High levels of unemployment and the widening gaps in urban societies have caused many social problems, such as increased urban crime and poverty. Crime levels in some large cities in Indonesia are quite high. In Jakarta, Medan and Surabaya, the crime levels in 1994 were 2.00; 2.12; and 1.14 cases per 1000 people, respectively.

The average number of crimes in urban areas is 0.38 cases per 1,000 people. Larger cities such as Medan, Jakarta and Surabaya have figures more than 3 times higher. This could be an indication that in larger cities, the gaps among groups in urban society are wider.

Most of this industrial sector growth occurs in Indonesia's major urban centers. During the past two decades, the rapid increase in the manufacturing and related services sectors have helped to push up Indonesia's urban growth rate.
Together, increasing population densities and the continued rapid expansion of industry create a concentration of pollution from human and commercial activities in urban areas, which threatens to lower the quality of human life and destroy the natural resources upon which many economic activities are based. Urban environmental degradation is increasingly being recognized as one of the most serious side effects of Indonesia's economic development.

POLLUTION & ENVIRONMENTAL DEGRADATION

Household waste is the principal source of surface water contamination in Indonesia. Human waste ("black water") causes significant levels of faecal coliform contamination of surface water. In addition to human waste, domestic sludge ("gray water", waste of kitchens, showers, and laundries) also contributes significantly -- about 50% -- to water pollution. Most cities use an old open ditch system to move domestic waste water; these drains are subject to clogging that can cause subsequent flooding.

For water in Jakarta, domestic sludge creates a pollution load of 152 tons/day of BOD ("biological oxygen demand," a measure of the total organic pollution load). Under current practices, this is expected to increase up to 288 tons/day by the year 2010, according to some estimates. Sludge and seepage together are estimated to contribute 79% of the waste water in Jakarta, and 73% of the BOD load. This shows an increased in percentage from 1989, when domestic waste, commercial activity and industry currently generate about BOD 12% and 15% of the total load, respectively.

Lack of adequate sanitation facilities is the primary cause of faecal contamination of urban water supplies. A recent census shows that only about 48% of all Indonesians use private or shared toilet facilities; the remainder use alternatives. A survey conducted in 1987 indicated that of residents in Jakarta who use some kind of toilet facilities, only about 1% are served by operating sewer systems. Often, to avoid the costs and inconvenience of desludging, housing estates and private toilet owners may dispose of waste directly into drains. Even when a household adequately treats its human waste water, sludge continues to drain directly into open drains that flow into the rivers and canals. Desludging services contribute to the poisoning of water by disposing of collected human waste directly into rivers and canals. In Jakarta, public and private services collect well over 5,000 m^3 per day of sludge, but treatment facilities receive only 230 m^3 of that. The remainder is disposed of into the city's waterways.

Most large Indonesian cities face the challenge of improving an inadequate system for the disposal of increasing amounts of municipal solid waste. The primary environmental issues surrounding solid waste disposal are that the burning of waste adds to air pollution, while uncontrolled dump sites leads to leachates that contaminate ground water. Unmanaged accumulations of solid waste dump sites also serve as a breeding ground for disease-carrying pests. Further, rivers and drainage canals become blocked from "informal" disposal, causing flooding and spreading contaminated water into residential areas. Between 15 and 40 percent of all urban solid waste does not get collected, and of that collected, not all of it is disposed of in a safe or legal way.

In the case of Medan, Jakarta, and Bandung some portions of the uncollected wastes are burned (85%, 71.94% and 92.99% respectively), and less than 25% lands in "informal" dump sites. Waste disposal problems will be exacerbated by both continued population growth and higher per capita lifestyles that tend to produce more solid waste as incomes increase. In Jakarta, trends indicate that waste generation is growing by 6 percent a year. Future growth in Surabaya has been estimated at 5 percent a year.

Industrial pollution tends to concentrate in Indonesia's urban areas. With continued industrial growth in Indonesia, pollution loads will likewise continue to increase substantially. Estimates suggest that total BOD loads will increase ten-fold by the year 2020, and air pollutants, such as sulfur dioxide and suspended particulate, will increase 13-fold and 15-fold, respectively. Emission of bio-accumulative metals like lead and mercury are projected to increase by as much as 19-fold. The annual emissions of each of eleven pollutants analyzed as part of a recent World Bank study is expected to be at least ten times greater in 2020 than in 1990, assuming no changes in environment of industrial policies and practices.

Recent monitoring of the discharge of large industries indicates that industrial pollution constitutes from 25% to 50% of the total pollution load in different rivers in Java. In Surabaya, a 1989 survey estimated that industrial effluents accounted for 38 tons per day of BOD in the Brantas river, out of a total load of 120 tons per day. In one of Jakarta's rivers, a 1990 study revealed industrial source pollution accounted for 5 tons per day, only 6% of the total.
Ground water too tends to be polluted in urban areas, where water tables are also dropping and salt water intrusion is affecting aquifers in coastal areas. In shallow aquifers in Jabotabek area, typical industrial effluents, such as phenol, detergents and nitrate have been recorded. More than half of the industries located on West Java river basins have waste control units, 46% of them produce discharge that falls below the quality set by national standards.
1988 emissions inventories conducted on three major cities indicate that Jakarta's industrial sector emissions account for about 15% of particulate, 16% of nitrogen oxides, and 63% of sulfur oxides loading. In Surabaya, the industrial sector shares of these pollutants were about 28%, 43% and 88%, respectively. Bandung recordings revealed pollutant shares at 20% for particulate, 29% for NOx and 71% SOx. Precise levels of toxic and hazardous substances disposed of in Indonesia are also difficult to establish. Evidently, quantities of toxic and hazardous waste are disposed of in uncontrolled landfills, dumped in rivers along with other industrial wastes, and in some cases, spread to agricultural areas by irrigation water and wind. For example, an analysis of the Angke estuary in Jakarta Bay, reported mercury contents ranging from 7 to 18 ppb (parts per billion). The allowable limit for sea water used for aquaculture is set at 6 ppb.

In most large cities, vehicle emissions are the largest single factor in urban air pollution, and they are also likely to be the fastest growing source of harmful pollutants. Industrial processes, power generation, burning of household wastes, agricultural burning, forest fires and other sources also contribute to the problem, but in much smaller percentages. For example, in comparison to other sources, the percentage contribution of particulate emissions by vehicle transportation in Jakarta, Bandung and Surabaya are 44%, 28% and 13%, respectively; in all three cities, vehicular emissions account for virtually 100% of the lead and CO in the air.

There were over 2 million cars in Jakarta in 1990 contributing to air pollution. Growth rate of motorized vehicles is 10%[FA4] per year, which will lead to a doubling of vehicles by the year 2000. Air pollution from vehicles has almost surpassed safe level in several areas of Jakarta and noise from vehicles was found to be very high in 5 cities in Indonesia.

Transport has been found to be a major contributor to greenhouse gas emissions in Asian countries. The transport sector's contribution share to CO2 emissions is 11%, Nox emission is 30%, and CO emission is 55.7%. Besides these gases, one of the major dangers from vehicle emissions is lead. The Agency for the Assessment and Application of Technology (*BPPT*) found lead levels to be beyond safe limits in several residential areas in Jakarta.

Valuation of the social and economic costs of urban environmental degradation is a difficult task. Although little urban health data exists, the numbers that are available point to severe problems. A 1991 study found that the risk of disease from environmental causes in Indonesia is 12.5 times higher in urban areas than rural, and this number is higher for the urban poor. 80% of infant deaths are still caused by water related disease in Indonesia. In Jakarta, diarrhoea is still a major cause of infant and child death. Environmental factors seem to effect the incidence of diarrhoea more than socio-economic factors. Other environmentally related diseases are also prevalent in children in Jakarta, such as worms (up to 70% of children in one sample were infested) and skin disease (37% of children in one sample suffered). One researcher, after an in-depth study of North Jakarta water supply, concluded that the lack of reliable and low-cost water has led to health-threatening low levels of water consumption.

The World Bank estimates that the environmental costs of air and water pollution are $1 billion per year in Jakarta. Jakarta also suffers significant losses (up to $26 million) each year due to floods. Another cost of water pollution is the estimated 1% of Jakarta's GDP needed to boil water. Although incomes are rising in urban areas, this does not reflect real incomes that allow for congestion, and environmental conditions that influence health and well-being. For example, it has been estimated that the urban poor spend up to 10% of their income on water, while mid and high incomes spend around 4% (which is the estimate used in water supply customer studies). Traffic congestion could cause losses to community, it is indicated by traveling time from home to work location (for example: in Jakarta average traveling time reach 82 minutes or more than one hour).

Many of the rural poor people who have migrated to urban areas have only changed their status to urban poor without any significant improvement in their welfare. This has resulted in an increase in the area covered by urban slum, urban environmental degradation, a reduction in basic urban infrastructure services, and limited employment opportunities. Environmental improvements and facilities provision for the urban poor are not easy. Dueto their low income economic ability, they will need considerable subsidy - whereas the financial resources especially of the local government are limited. As a result, some of the slums' residents have not been adequately served by urban facilities.

SHELTER

National housing policy promotes a number of national goals. Housing not only contributes to growth by providing construction employment, it also acts as a savings incentive for households, and it can potentially serve as a platform for the development of home-based enterprises. Indonesia's housing policy has, over time, addressed the following goals:

- improving housing quality
- increasing the availability of more affordable housing
- encouraging adequate living space
- facilitating security of tenure
- acquisition of minimum home amenities
- minimizing discrimination in housing selection and finance
- promoting a healthy and safe living environment.

Over the last twenty years, the Government has focused particularly on three overall goals:

- expanding the availability of housing
- promoting home ownership, particularly in urban areas
- improving urban neighborhood quality.

The performance of urban development in Indonesia at the end of PJP I (1992/1993) in housing sector can only fulfill 41% of the total housing needs. Limited housing supply and weak access for low income group to the appropriate key resources (land, housing, infrastructure, finance, technology and institution) to obtain a decent housing unit are problems in Indonesia. In the period 1969 - 1974, Indonesia experienced a lack of housing supply as the result of the imbalances between population growth and housing construction. The growing population needed at least 400,000 new housing units per year between 1974-

1979, but the ability of people to build houses was limited. In the period 1989 - 1994, about 200,000 to 250,000 housing units were built annually, however, the need for housing in urban areas was higher (at least 436,000 housing units annually).

The percentage of direct Government investment in housing provision remains low. In urban areas, housing provided by the government and private sector meet approximately 15% of the total housing needs, and the remaining 85% is provided by people themselves.

Small but significant housing program expenditures can be viewed as carefully targeted economic investments for the government of Indonesia. In 1992/1993, housing investment constituted 2.97% of total GNP.

Since the early 1970s, the housing stock grew with very little planning -- approximately 90% of the existing housing stock was built incrementally, and only about 5% followed a formal planning process. Lack of planning has contributed to over-density in some kampung areas, as well as environmental problems like over-use of aquifers that are the ground water sources for wells. In general, large cities, like Jakarta and Medan have smaller percentage of authorized housing stock. This situation could be caused by imbalance rate of urban planning and rate of housing construction.

Percentage of Authorized Housing Stock, 1993

	%
Jakarta	16
Medan	10
Bandung	25
Semarang	65
Surabaya	-
Banjarmasin	48
National	-

Source: Urban Indicators

Housing costs in the formal sector have risen by 153% between 1980 and 1990 (slightly higher than the general inflation rate for the same time period, of about 133%). The combination of high land prices and high interest rates caused constraints on the production of dwellings for households with incomes around the 70th percentile of the income distribution. In some Indonesian large cities, the price of available housing is still "expensive". This can be seen from the comparison between the price of housing and the annual household income in several cities. The differences in the price of housing can be caused by the differences in the land price from one location to the others.

Housing Price and Household's Revenue

	Median housing price (million Rp)	House price to incomeRatio
Jakarta	**24.3**	**9.8**
Medan	**9.7**	**5.5**
Bandung	**19.4**	**11.9**
Semarang	**7.3**	**5.4**
Surabaya	**16.9**	**8.6**
Banjarmasin	**5.8**	**3.9**

Source: Urban Indicators

Land has an important role in determining housing cost. Land prices in urban areas are very expensive. Land prices in the urban fringe vary depending on whether the land has been developed or not. In metropolitan areas like Jakarta, the ratio between the price of developed and undeveloped is 800%, and in large cities like Medan and Semarang the figures are 300% and 500% respectively.

Ratio of Developed-Land Price to Undeveloped-Land Price, 1993

	%
Jakarta	**800**
Medan	300
Bandung	700
Semarang	**500**
Surabaya	**600**
Banjarmasin	**140**
National	**500**

Source: Urban Indicators

The size of both the dwelling and land it occupies are fundamental attributes which may reflect how housing conditions have developed. In urban Indonesia, the median floorspace is 14.40 sqm/capita (63.94 sqm/dwelling). About 14.5% of the total units have less than 30 sqm, and 13.3% occupy more than 100 sqm. The proportion of dwelling units which occupy less than 30 sqm in urban area is higher than in rural areas, 18.7% and 12.9% respectively. Higher incomes, as expected, occupy larger units/land size, and used to be somewhat older and have more household members, including servants. In general, the type of dwelling unit is single unit with less than 5 rooms.

Type and Size of Dwelling, 1989

	Indonesia	Urban	Rural
Total dwellings ('000s)	38,921	10,826	96 6
Type of dwelling (%) :			
Single unit	92.9	83.3	96.6
Duplex	3.4	6.8	2.5
Multifamily	3.4	10.0	0.9
Size of dwelling (%) :			
< 30 m^2	14.5	18.7	12.9
30-69 m^2	53.9	46.2	56.0
70-99 m^2	18.3	19.2	17.9
100+ m^2	13.3	16.0	12.3

Rooms in dwelling (%) :			
1 room	3.8	4.4	3.6
2 - 3 rooms	34.7	28.6	37.0
4 - 5 rooms	44.5	42.5	45.3
6+ rooms	17.0	24.4	14.2

Source : INDONESIA : Twenty-Year Shelter Sector Review, 1995

Based on several data from six cities in Indonesia, average floorspace per capita in Jakarta is higher than other cities, even with national figures. In 1993, the national figure is 14.40 sqm/capita and six cities like Jakarta, Medan, Bandung, Semarang, Surabaya and Banjarmasin are 15.04 sqm/capita, 13.91 sqm/capita, 13.11 sqm/capita, 12.00 sqm/capita, 11.47 sqm/capita, and 6.43 sqm/capita respectively.

LOW COST HOUSING PROGRAMS

As stated earlier, land tenancies and land rights are not distributed evenly, creating a feeling of insecurity amongst residents especially considering the rampant land speculation in and around urban areas. The weakness of the low income communities in the face of private sector pressure together with spiralling land prices in urban areas have forced slum housing to move onto state owned land and marginal areas (river banks or railroad tracks), creating slum kampungs with inappropriate housing and environment conditions.

Low income communities generally have poor access to decent housing. Until now there has been no loan assistance for housing improvement/housing construction for informal sector communities and the low income group with monthly incomes between Rp. 50,000 and Rp. 200,000. They cannot afford to obtain decent housing due to housing loan requirements that they cannot fulfill, such as high down payment and guarantee requirements. However, to tac le this problem, the Government has implemented several programs designed to improve housing supply, including infrastructures.

The program of urban housing development as a part of the National Housing Development Program was initiated during Repelita I with research on construction and local material quality, the construction of 1,039 experimental units of low cost housing in Java and East Kalimantan, and the formulation of housing sector policies. The program of urban housing development, which officially began in Repelita II, consists of new housing development, existing housing improvement through Kampung Improvement Programs (KIP) and urban renewal.

In Indonesia there are two systems of housing development, the informal or owner occupied construction system and the formal housing supply system.The informal or owner occupied construction system, which provides over 80% of the total housing units needed, has so far worked fairly well. A majority of urban households have been able to construct their own houses, with or without direct assistance from government or formal financial institutions. A three-in-one loan scheme, namely Kredit Triguna which was introduced by *BTN* (the State-owned Saving Bank), has enabled households to buy land, build houses and infrastructure, and initiate small businesses that will enable them to increase their income enough to meet their housing costs.

In order to overcome the scarcity of housing fund for the low income group, the government has implemented *TAPERNAS* (the national housing saving) for government employees. In principle, a part of the civil employee's salary will be collected and used to finance the construction of affordable housing for them.

The formal housing supply system provides approximately 15% of the total units needed, and comprises of housing directly developed by the state housing enterprise *Perum Perumnas* and also by private real estate developers. While houses developed and distributed by

Perumnas, all of which are very simple (designated as *RSS* and *RS*), are fully subsidized by government, not all of the houses supplied by private developers are subsidized.

In order to fulfill demand from the low income group, the Government enacted a housing regulation (1:3:6) which requires developers to build housing for the lowest income groups. The law requires that for every one high-income house developed, three middle-income and six low-income houses are also developed. But in practice, developers do not supply housing for the lowest income groups. The so-called "simple houses" (*RS / RSS*) produced by private developers are beyond the affordability of the urban poor, since the 1:3:6 housing regulation allows private developers to fulfill the requirement by building 70 sqm houses categorized as "simple".
The Kampung Improvement Program (KIP), includes the improvement of water supplies and drainage, footpath upgrading, the development of communal bathing and toilet facilities, health care clinics, waste disposal facilities, and occasionally schools.

KIP, which formerly was implemented and funded by local government, was considered as an appropriate development program for low income housing which has weak access to urban infrastructure. In some cases, local government participation was weak, due in part to the project's implementation by central government participation was weak, due in part to the project's implementation by central government agencies using central government funds, and no requirements for local cost sharing. Lack of participation on the part of beneficiary communities has led to a lack of maintenance.
Urban renewal programs provide funding for apartments under a cross-subsidy program, while encouraging the community to play an active role in redevelopment activities. The construction and sale or rental of the units built are to be managed by *Perumnas*. Under Repelita V, a slum renewal component was implemented in order to stimulate more efficient land use and better arranged urban areas.

The concept of the urban renewal program has often been misinterpreted, since it usually entails clearance of existing kampungs, large scale relocation of residents, and replacement of old structures with modern large, multi-storey buildings. Such practices have been found to be counter productive because they affect the social structure of the city, have negative effects on the employment of relocated residents, and instigate social unrest. Current *Perumnas* experiments in kampung renewal allowing replacement of housing units in-situ are considered more humane and easily acceptable.

Perum Perumnas[N J5] was established to develop new residential areas which were intended to be affordable for low- and moderate-income households. The program was not targeted at the lowest income groups. Since Repelita II, 213,492 housing units in 131 cities across Indonesia have been built by *Perumnas*.
[N J6]In 1974, *BTN* became a savings and mortgage loan bank, implementing the national Home Ownership Loan Program (*KPR*) that offers below market interest rate loans and provides mortgage to the same income group served by *Perum Perumnas*. All *Perumnas* homes and those built by approved private developers are eligible for *KPR* mortgage. The *KPR* program provides mortgages with 20-year terms and 12-18% interest rates. *KPR* loans are limited to salaried employees. The *KPR* and *Perumnas*' urban housing construction program are Indonesia's largest housing programs. Between 1976 and 1990, approximately 638,000 housing units were financed by the *KPR*program.

The clean water supply program is an ongoing program begun under Repelita I. The regional water enterprises, known as *PDAM*s, administer the program, with the Ministry of Public Works responsible for technical activities and the Ministry of Health responsible for water quality levels. The water supply program expanded under Repelita II, increasing the number of water supply facilities and repairing existing networks to attain a wider coverage. Distribution systems for kampung areas and *Perumnas* housing units were expanded and hydrants were constructed.

The Sanitation program was also began under Repelita I and continues until today. The goal of this program is to provide services for the handling of waste water and trash, and the provision of drainage systems. During Repelita III, the program focused on high density, low

income areas, critical land[N J7], and new settlements. It aimed to develop systems for drainage, garbage disposal, and sewerage. The government also developed a cross-subsidy system to minimize the costs of infrastructure provision.

INSTITUTIONAL ISSUES

The financial sources for the development of urban/regional infrastructure in Indonesia come from the government and public/private participation. Development funds from the government come from : the central government (*APBN*) and the local government (*APBD* I and *APBD* II). Development funds from public participation [N J8]are collected through public participation and the private sector.

Development funds from the central government mostly come from tax revenue and foreign aid. This central fund is usually channeled through sectoral departments or *INPRES* for the financing of urban/regional infrastructure. In general, the proportion of the funding derived from central government is still large.

Local government funding mostly comes from tax revenues, retributions, revenues from self-management, funding from higher level authority (central government or provincial level), loans and others. Until the end of *Pelita* V, the dependency of local government on central government funding was still high (more than 50%). The sectoral role in the development of urban/regional infrastructure is still high; therefore overlapping in development authorities in local areas often occur.

Sources of Development Expenditure in Urban Area
Pelita V

	Central government	Local government (PAD)
Metropolitan	65%	35%
Large city	70%	30%
Medium city	58%	42%
Small city	54%	46%

Source: Repelita V

According to 1993/1994 data, the proportion of development funding derived from higher authority (central government or provincial level) in urban areas in Indonesia had dropped to only 16.55% (less than 50%). However, in several large cities in Indonesia the figures are still higher. In Jakarta and Medan, to reduce their dependency on higher level authority, increased revenues from tax and retributions have been encouraged.

In the meantime, at the central level a structural change is underway which demands a greater role for local government. Some examples of this structural change are a shift in domestic revenue from oil and gas to non-oil and gas, especially tax revenues; the growing role of the private sector surpasses the state sector in investment financing. The growing role of local governments is not only because they have to increase their self-sufficiency in financing local development, but also because they have to serve the growing activities of the private sector in their area.

With the increase in responsibility being given to local authorities, the role of local finance is becoming more important. As a consequence, local areas are being encouraged to become more active in mobilizing their own revenue sources and at the same time to manage revenue received from central government more efficiently.

To avoid this overlapping authority and to reduce the burden of the central government, the policy of decentralization is becoming more important. Beside those sources of fund

mentioned above, privately finance development also important. This has been implemented through Kampung Improvement Program or in the development of infrastructure and urban facilities by private developers.

In general, the institutional system is still a big constraint in achieving the long term objectives of development. Rules and regulations have not yet devolved sufficient authority and responsibility to the local level to achieve local autonomy.
Some efforts have been made to devolve authority to local government, but some responsibilities such as the management of loans for local development are still determined by central government. However, the levy of local tax rate and project implementation in local areas aer now fully managed by local government.

The existing regulations have not given sufficiently stimulated private sector and people-based participation ; the existing regulations have also not given enough direction for the provision of a competitive service on a global scale, while the sanctions for those who neglect basic services for the urban poor are too weak. In addition, the existing regulations have not been able to support the achievement of efficiency and environmentally-friendly development.

The interest of local government is not fully represented in both urban spatial and socio-economic development planning. At the local government level, urban plans are mainly made just to meet central government requirements, and are inadequate for defining needs and spatial allocation of uses. Masterplans, therefore, are very often inadequate as guidance for housing development planning. Weaknesses in urban planning institutions due to limited capabilities of planning officials are especially apparent in the areas of regulation enfocement and management.

The main housing problem in for the lower income group is the lack of accessible financing. The present housing financing is heavily subsidized by the Government[N J9], even though it has limited ability to provide such subsidies. Commercial loans through both government and private banks are considered to be expensive, while direct loan programs to households served by *BTN* are more easily available to middle income groups, and only of very limited benefit to low income groups. Other burdens in financing low income housing development are the unavailability of long term mortgages to developers and/or households, and of mortgage funds to non-fixed income households.

CONCLUSIONS

Even though Indonesian socio-economic conditions are improving rapidly, disparities -- interregional, urban-rural, and intra-urban -- are still a major problem to be overcome, since socio-economic disparities can cause serious problems for the nation. Economic development in most urban areas in Indonesia is increasing at higher rates than rural areas. The concentration of industrial activity in urban areas which have a supportive environment for industry, in turn, widens the socio-economic gap between urban and rural areas, causes urban poverty, and intensifies urbanization. The uneven distribution of strategic cities in Indonesia has also contributed to the widening gaps between regions, since these cities have important roles in national economic development.

The emergence of the mega-urban phenomenon and the increase in urbanization pressures has in turn caused many problems particularly in urban area, such as: environment degradation, socio disintegration, and infrastructure deficiencies. Usually the urban poor suffer most from these degradations and deficiencies. The rise in price of clean water in dry seasons; flooding and epidemic diseases due to unmanaged household waste; and lack of urban public transit - all of these burden theurban poor.

Weak access by low income groups to key resources for decent housing is also an important problem. Limited availability of alternatives for housing finance, particularly for the low income group, and prohibitively expensive housing prices due to high cost of land mean that

low income groups cannot afford the decent housing that they need. Land prices in some urban locations are still not well managed and monitored. This has resulted in land speculation and huge increases in land prices.

In general, local government still depends on financial sources from central government, because local government does not have the resources to supportefficient urban services. Planning and coordination among sectoral interests and local - regional - national interests have not been integrated, meaning that development responsibilities ovelap at the local level, which in turn could lead to inefficiencies in development financing.

BP already has this section

REPUBLIC OF INDONESIA

NATIONAL REPORT FOR

HABITAT II

ANNEX 2

BEST PRACTICES

Final Draft
February 1996

National Committee for Habitat II
Jalan Kebonsirih 31, Jakarta, Indonesia

Five programs have been selected as best-practice in Indonesia. The implementation of these best-practices contains three major common elements which are important to note. First they should use a participatory or partnership approach to development, which means that all parties involved have made significant contributions. Second is the employment creation that should feature in the best-practices, including a poverty alleviation mechanism. Finally, replicability and sustainability aspects must be taken into account.

After considering these three crucial requirements, case studies will be presented as examples. In Indonesian terms/with reference to Indonesia, these requirements are in line with existing policy to improve standard of living of the people.

In relation to partnership element, there exist mechanism built in development programs implemented between government, private sector, NGO and the community. During the implementation, local government assisted by NGO or development consultant enable the community to purpose the effort to improve their livelihood. Since 13% of the population still live below poverty line, additional effort have been initiated to reduce the number of poor people by providing income generating activities and launching program that enable the people to create their own job.

Indonesia's best practices can be categorized as follows :
(see attachments for detail)

Participatory Urban Renewal. The objective of Participatory Urban Renewal is to improve degraded urban centers that are no longer functioning properly (in terms both of time and place). The intention is to revitalize the inner city area. Participatory Urban Renewal does not impose any predetermined approach to development but can be a mixture of top-down and bottom-up approach, both multi-sectoral and multi-dimensional. From Indonesian best practice, examples of Participatory Urban Renewal include the multi-storey flats at Dupak and Sombo in Surabaya, Citraniaga in Samarinda (East Kalimantan), and *Kampung Susun* at Pekunden in Semarang (which accommodates traditional forms of construction).

Community Based Housing. CBH is an alternative development approach that enables the target families (those in need of decent housing) to develop their own housing through a collective effort. It can be used either to provide new housing or rehabilitate existing ones. CBH differs from housing conventionally provided by real estate developers or the government. It is formulated as self-housing and self-settlement provision and/or improvement movement that can work in any area and with any income group (it encourages the development of mixed-income communities rather than single-low income groups, so as to be sustainable). This includes housing development for industrial workers or self-rental housing development, CBH self multi storey flats (*rumah susun)* development, CBH self-housing improvement, any combination of these, or even ultimately a CBH self-initiated joint venture housing and commercial development with the private sector. Example of community based housing best practice are: EDM community in Tangerang; Kopersup community in Jakarta; and the 12th Ulu community in Palembang, South Sumatra

Integrated Urban Infrastructure Development Program (IUIDP). The Indonesian terminology for this program is *P3KT* (*Program Perbaikan Pembangunan Kota Terpadu*). The program's goal is to initiate the

decentralization of infrastructure development to the local government level. The Concept is to ensure integrated urban infrastructure provision by integrating technical, financial, institutional aspects in accordance with the capacity and needs of local government. Examples of IUIDP best practice are the cities of Cirebon, Denpasar and Bandar Lampung.

Kampung Improvement Program (KIP) The aim of the programme is to upgrade environmental condition in kampungs to reach a minimum acceptable standard for health and quality of living. For the first 20 years, KIP's focus was on physical improvements, including accessibility (roads and footpaths), drainage, sanitation, drinking water, solid waste disposal, and health and education facilities. However, recognizing the need to increase the effectiveness and life time of the programme, it was realized that the programme had to be expanded to include not only physical change but also to improve the community themselves. The latest phase of the KIP in Jakarta has therefore enlarged the focus to increase community involvement. An other example of Kampung Improvement Program is the Banyu Urip KIP in Surabaya.

Rural Housing and Infrastructure Improvement *(P2LDT)*. This community-based rural settlement improvement programme provides access for the community to basic services and stimulus for housing improvement. The Program was actually based on stimulation of an extension effort to promote settlement improve. Major programs such as the quality of the house, infrastructure improvement and health facilities were the major concerns provision. From the budget allocated, 60 % is for housing improvement and 40 % is for infrastructure facilities. All the works are done by *gotong-royong* (cooperative effort to help each other). In order to fulfill the housing needs of people in the villages, the government mobilizes local resources, either from the community or private sector. It encourages the private sector at national level to visit the villages and develop the community as a reflection of their social responsibility. An example of P2LDT best practice is Panglipuran village in Bali.

In conclusion, these Best Practices have been replicated to many parts of Indonesia. To a certain extent also to oversee part of the Technical Cooperation among Developing Countries jointly implemented by UNDP and The Indonesian Government. The most suitable criteria for future Best Practices, apart from those mentioned above, should also include of community affordability. And Best Practices can be developed in the future by creating a conducive atmosphere for the development consultant or NGO, and the for community to have access to financial assistance in the form of a within credit scheme.

I. IDENTIFICATION TAG

Title: **Community Based Low-cost Housing movement in Indonesia**

Key Organization:
1. The State Ministry of Housing, Mr. Suyono, Assistant I to the Ministry, address: Kebonsirih 31 Jakarta.
2. The Association for cooperative housing, ASPEK; Mr. Dodo Juliman, Executive Director; address: Rebana 32, Bandung.
3. UNCHS and UNDP INS/94/003; Mr. Parwoto address: Kebonsirih 31, Jakarta

Key Dates: Started 1989,
First community completed their house Feb. 1993
Currently; replicated by more than 30 CBOs

Description
Basically the beneficiaries were induced to develop their own community based organizations (CBOs: i.e. cooperatives, associations or pre-cooperatives) to generate and accumulate potentials and resources within the community (including capital accumulation) which could then be channeled into organized institutional resource supply systems mainly for land, institutional finance, and technology. To assist the community in dealing with the agencies which have control over the institutional resources, NGOs and DCs (Development Consultants) are engaged by each project. They also work with the communities and provide grass root management and technical services. Access to financial resources is through a community mortgage called "*Kredit Triguna*".

II IMPACT ASSESSMENT

- Low cost houses have been developed by CBOs in
  - Kopersup, Cengkareng, Jakarta - 156 units
  - Eko Damai Mandiri, Serpong, Tangerang - 181 units
  - Kowaperak, Rancaekek, Bandung - 45 units
  - Koperasi Tekad, Sukoharjo - 70 units
  - Koperasi Pedatuan, 12 Ulu, Palembang, 27 units
- Formation of 35 other CBOs in 12 cities and village for housing and community development.
- Access to mortgage for those with low incomes and informal occupation
- Establishment of Development Consultant networks

III SUSTAINABILITY

As an alternative to the formal housing delivery system and also to augment the financial flows into housing from outside the Government sector and to lower housing costs, the Government of Indonesia has adopted a Community Based Housing, strategy based on, among others, the following guiding principles :
- Promotion of informal and community-based housing delivery system
- Active participation of the community in mobilizing all resources, including finance and labor, so as to lower overall housing costs.

- Development of innovative credit policies, remembering the keeping in view loan absorbing capacity of the borrowers so that low income households can share in the benefits of the institutional financial system being developed in the country.
- Government's active participation as an enabler of the housing process by providing access to land and tenure security, credit, and income opportunity.
- Flexible housing standards for low income housing programs, without overlooking safety and environmental issues but keeping in mind the needs and affordability.

To facilitate and ensure the broader application of this approach, the movement has induced some institutional development and the adoption of new policies. The community need access to resources and, as a catalyst for development, CBH programs have institutionalized "Development Consultants". For cheap affordable mortgages a new mechanism has been developed which enables the community to buy land, and develop and maintain the houses : this is called the "Triguna" community mortgage. To ensure broader application, central and local government have made a set of policies and strategies for community based housing.

Development Consultancy and It's Network (Aspek)
The Development Consultant (DC) is the intermediary, partner and catalyst the community based housing projects. He or she should have the heart to enable the community, and have the skill to work in a team. DC's scope of work includes : community organizing, land development, project management, financial manager and planning. A network of DC's from several cities have actively beed cooperating in disseminating community based housing. The DC network, named Aspek, are now a partner in the development of the community based housing approach in Indonesia.

Triguna Community Mortgage. To ensure that the community gets access to institutional finance, the BTN (State Savings Bank) with the assistance of the project took the initiative to introduce a new loan package, the *Kredit Triguna* or 'Triple Function Loan' which may be used for land provision, construction and possible income generation activities. This loan is disbursed in stages, according to the progress of the building process either by stages of construction (provision of serviced plots, foundation, masonry and frame, roof and trusses, finishing) or batch. Kredit Triguna is basically an approach to grant a loan to non fixed income earners or informal sector who usually have difficulty in getting access to institutional finance, that is to say to bridge the gap between formal and informal mechanisms. The *Kredit Triguna* is only granted to a community not to individual household.

In addition, the community has to show their commitment in the form of cash savings or equity i.e. land, which is termed as *Dana Mitra* (counterpart fund). The purposes of *Dana Mitra* are ; to ensure commitment, discipline, to have a track record of the ability to pay, and equity of the participating member To ensure smooth repayment, each member has to pay an additional amount besides the monthly installment, namely the *Dana Solidaritas* (solidarity fund). Basically *Dana Solidaritas* is a compulsory saving to shoulder defaulters, if any, as part of collective responsibilities. If there are no defaulters the *Dana Solidaritas* will remain with the community as part of their funds/capital. Since Kredit Triguna was officially issued through ministerial degree in September 1994, BTN has issued commitment letters to 8 community groups and out of that 5 community groups have receive the disbursement .

Changes in sectoral policies and strategies,
The community based housing pilot projects have contributed to the adoption of several new policies. These new policies are the operationalization of the existing Indonesian basic enabling policy . The supporting policy for community based housing are:

1. Ministerial Decree, number 06/1994, on general guidelines for community based housing development.
2. Ministerial Decree number 04/1995, on the follow-up of the balanced housing and human settlement development decree.
3. Several local authorities have also supported this movement, the application of the model is also used is other development fields such as: urban renewal, village development, and infrastructure development.

VI NARRATIVE SUMMARY

The development objectives of the program are to contribute to poverty alleviation by improving living and housing conditions and income earning capability of low income households, while at the same time developing an institutional mechanism which will accelerate the pace of housing development with minimal government involvement, largely through self-help and participatory methods The immediate objectives are :

a. To strengthen institutional capacity in the field of social housing development at the central, local and community levels.
b. To test and to promote a Government strategy to enable very low income groups in urban areas to acquire access to land tenure, urban services, housing and institutional finance.
c. To contribute to the national housing policy with lessons learned from the project, provide a replicable model and prepare it for dissemination.

Since the project uses a *community based approach*, partnership is employed as the main mechanism to enable community access to the decision-making process at every stage of project development. This mechanism ensures that all parties involved are committed to the concept and the implementation of the project. In this project the community is viewed as the prime actor who will decide the final decision, and the role of other actors are as facilitators to help the community reach their goal

Proven practices :

Kopersup. In 1984 a group of low-income slum-dwellers who were recovering from the effects of a fire in their existing housing in Penjaringan, Jakarta, formed a cooperative named Kopersup. By 1991 this cooperative already had 150 members. One of the objective of the cooperative is to provide housing for themselves. Kopersup became a partner in the CBLH pilot project (INS89/006) in 1990. With the technical assistance from a NGO and Trisakti University, Kopersup made plans and proposal for the housing project. BTN, the state mortgage bank, provided finance for the project through their *Triguna loan.* Perumnas, the national housing corporation, provided the site and services in Cengkareng, West Jakarta. Construction management was done by the cooperative with the help of a technical advisor. By February 1993 Kopersup had built 152 houses, an office for the cooperative and started income generating activities.

Eko Damai Mandiri. The seed of this housing project in 1992 was an idea of Triaco Development Consultants to build low cost housing with a cooperative of its staff. (Triaco are an organization of community planners and architects dealing with poverty alleviation and environmental issues from a community participation perspective). The cooperative soon expanded to take in members from after NGOs, government departments and other organizations. The membership now comprises about 180 members in Phase 1 and 400 members in Phase 2. Through their efforts and acting as their own developer (with assistance where necessary from Triaco) the members of Phase 1 of the cooperative had bought land in the urban fringe near Jakarta, obtained building permits, and designed and

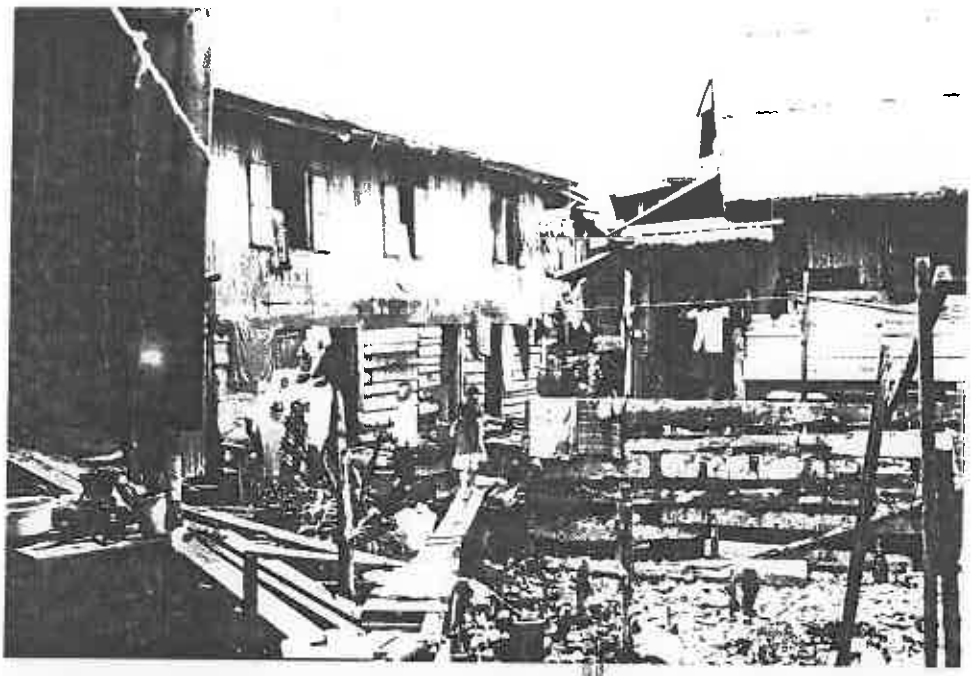
built their houses. Phase 2 has bought land next to phase 1 and is currently in the site planning stages. *Eko Damai Mandiri* cooperative has members from all walks of life, from dentists to office boys to civil servants to waste scavengers. Although the majority of the houses (approximately 160) fall within the cheapest and simplest government housing classifications (RSS and RS), the remaining 20 or so are more expensive and more luxurious, to ensure a balanced social mix in the community.

Eko Damai Mandiri has experimented with various innovative forms of financing, both external and internal. Not all of them are brand new, but the way in which they are linked together makes a very effective package. One of the component of the financial package is land banking, which consists of the cooperative retaining ownership of a small number of plots (the exact number fluctuates over time, but it is normally between 5 and 10). This land can be used for anything that the cooperative wants provided that it is for the benefit of the all members. For instance, it could be used as a location for shops, community activities, open space or whatever.

Palembang, 12 Ulu. The "12 Ulu" community based urban renewal scheme encompasses 16 hectares of slum area on the banks of the River Musi in the Sumatra city of Palembang, and is home to 4456 inhabitants. Most residents are factory workers with generally low economic potential. The slum is subject to a complex combination of environmental, social and economic problems: minimal infrastructure, polluted water supply, unsatisfactory road/alley network, poor drainage with frequent flooding from the tidal river, and low living standards.

The project successfully employs many of the latest ideas and tools of community-based development in Indonesia, and in many ways is a model example of current community-based urban renewal here. It recognizes that slum problems are not merely physical environmental problems, but involves a whole web of non-physical problems, such as low economic capacity amongst the community, a lack of environmental awareness, and poor access to resources for the community to tackle the problems that they are faced with. Project implementation has involved community preparation (using community self-survey and participatory planning), increasing local incomes (e.g. by reserving the ground floor of housing renewal schemes for rented commercial space), and the establishment of new organizational structures to enable implementation. Following these activities, a one hectare community based housing and infrastructure demonstration plot has been developed.

To date, 27 rental housing units have been built on the demonstration plot, and drainage & road/alley infrastructure have been installed throughout the target area. The installation of a clean water supply network has had obvious health benefits as well as reduced the cost of clean water to each family from US $ 9 per month to US $ 1.



12 Ulu Palembang

The condition before the renewal

The community decided to work together to renew the kampung

Prototype house build by the community

Kopersup Community

Planning and design together

The community is the owner of the project, and developer of the property

Prototype house build by the community

Eco Damai Mandiri Community

One of the community activities are tree planting on the communal land.

the first batch of low cost houses, ready in September, 1995

The low income households in their new home.

I. IDENTIFICATION TAG

Title: Participatory urban renewal in Citra Niaga, Samarinda

Key organizations and contact addresses:

1. Institute for Development Studies (LSP); contact person Ahmad Rofii, address: Gedung Setiabudi Lt 2 blok B 3/4, Rasunasaid 62, Jakarta
2. PT Triaco Widya Cipta; contact person Antonio Ismail, addressee: Mampang Prapatan 55, Jakarta
3. Municipality of Samarinda; contact person Walikota; address: Balaikota Samarinda, Kalimantan Timur.

Key dates and current status:

- Start in 1984
- Compilation of phase III in 1987
- Currently in operation

Description :
Renewal of a slum and market in the inner-city of Samarinda into an well planned, urban center with integrated development scheme consisting of housing, commercial, and other recreational and public facilities. the principle of the project is development with out eviction and with a minimum use of public funds. The main concerned are welfare of the low income street hawkers, cost recovery, profitable venture. The "Citra Niaga" urban renewal project covers a 2.7 Ha area and is located in the prime area in the heart of the city of Samarinda, the capital city of East Kalimantan, Indonesia. The approximate total development cost was six billion rupiah (approx. 4-5 million US Dollar in 1986)

II IMPACT ASSESSMENT:

As of Phase III, the Project has completed 141 shop houses (for the economically stronger population), 25 small shops, 54 plaza-shops (for the middle income group), and 224 units of space provided free-of-charge to the lower income street hawkers (kaki lima).
The project has recover its cost and still in profitable operation after 11 Years

The project have demonstrate the ability to accommodate the original population and transform the place into a vibrant commercial and recreation center. Preliminary studies indicate that the development of physical infrastructure alone will not solve the urban problems. A new structure should be created to maintain the continuity of the "place", the prevention of its decay, the harmonious co-existence and the economic advancement. Thus the project does not only stop in its physical development but also prepares for the "continuity" though the development of a "Cooperative" as a vital component. The preparatory social work and the social technical assistance are coordinated by "LSP JAKARTA: (the Institute for Development Studies), a national wide Non-Government/Non Profit Organization.

III SUSTAINABILITY:

The key success of the "Citra Niaga" Project is nevertheless the inclusion of community active participation from planning, financing and its institutional building process. This project has proven that not all Development Efforts has to be done solely by the Government where the People just waits. The Government here with her limited funds has

readjusted its role to acts as only a "Regulation" and "Directive" body to this Urban Development. The underlying approach calls for the mobilization of various key resources available in the hands of, not only, the local government, the Central Government, nor the Private Sector but, most important, it included the participation of the existing inhabitants, the low income families that illegally occupied the area, a total participation of all sectors.

The two year long effort and struggle was the process of convincing, promoting, and integrating all these participating sectors and designing not only a "self cost recovery, self financed, self sustaining" project but a "profitable venture". The Citra Niaga project represented a breakthrough in commercial projects for cities in Asia and developing countries. It was developed successfully by a private developer in partnership with the government, an NGO and the community for the benefit of the larger community. By involving the local community in the planning and implementation process, participants were galvanized into achieving success in running and maintaining the project. Architecturally, it provided a central focus of urban space and character to the town, with a uniquely Asian commercial environment.

Citra Niaga serves as a model for successful land sharing, with people of all income levels accommodated, while ensuring the property rights of the Kaki Lima. In reclaiming prime for public use, it not only managed to upgrade a crowded squatter settlement, but also developed a public plaza and shopping center in the heart of the city, and reestablished the link between the harbor and the city. It was financially viable, creating a profitable business venture while including the usually ignored social and ecological aspects. Citra Niaga demonstrates that even in small towns profits can be made if projects are well thought out and if innovative complex financing schemes, through a mixture of cross-subsidy and self-finance, are used.

The success of the Citra Niaga project has been extensively documented and the information disseminated to many cities within Indonesia and in Asia. Although land-sharing schemes have traditionally required extensive time, energy and effort, the Citra Niaga model is transferable, keeping in mind a number of issues and pre-conditions.

A strong partnership of appropriate individuals to organize and facilitate the project is needed to include government officials, private developers, architects, NGOs, and group representing the community. All eventual beneficiaries of the project should be involved from the onset in order to promote the maximum sense of ownership, and to address any issues threatening the project's success. Flexibility must be maintained in facing numerous obstacles and issues that may arise, as was witnessed wit the issue of displacement. Finally, flexible financing schemes must be allowed and promoted, to ensure not only, self-financing but also profit.

IDENTIFICATION TAG

Title :	Rural housing improvement and conservation, Penglipuran traditional village, Bali
Key Organizations :	Planners: Provincial Government of Bali; University; Tourism, Post and Telecommunication Office; Public Works Office; Traditional Institution of Penglipuran.
Implementation and Control :	Public Work Office; Provincial Government; Tourism, Post and Telecommunication Office; Community of Penglipuran
Operation and Maintenance :	Local Government and Community of Penglipuran
Contact Person :	Ir. Putu Darta, Head of Division of Cipta Karya, Office of Public Works, Bali. Ir. Putu Sujana Cahyanta, Head of Programme Preparation Bureau of Setwilda TK. I Bali (Provincial Government) Drs.Ida Bagus Gede Agung Ladip, SH, Head of Bangli District
Key Dates :	Started in June 1992 and at the moment is being replicated in other places.

TRADITIONAL ARCHITECTURE IN BALI AND REINTRODUCING BAMBOO AS AN INDIGENOUS CONSTRUCTION MATERIAL

Description:

Penglipuran is a village in south eastern Bali. Geographically the project site is located in the village, but administratively it belongs to Bangli District, a semi-urban area. Like most places in Bali, Penglipuran and it surroundings are a tourist destination. The area is located 500-600 m above sea level on the way to Kintamani, the famous recreational place with Lake Batur and a volcano. Being a tourist area, many people tend to develop recreational facilities with less consideration on their impacts on tradition and social cultural.

Penglipuran has a population of 716 people and occupies an area 112 Ha of an area. It is officially stated as a place for the traditional Balinese type of housing. The traditions and laws of the community and the local government have been brought closer together by having a traditional ceremony gathering occasionally. The rural infrastructure development program from the Department of Public Works have induce the awareness of the community on their potentials. The people of Penglipuran and their leader have resolved to conserve the traditional architecture and their environment in line with the community's way of life. The special significant characteristics of buildings in the village is their front gate, called "angkul-angkul". Since bamboo is indigenous to the area (there is a 75 Ha bamboo forest near the village), most of the community use bamboo as a walling and roofing material.

Local government policy is to encourage the local community to conserve traditional buildings and the surrounding environment as heritage monuments. Being Balinese, culture and religion have a strong influence on the daily life of the community in Penglipuran. Legislation is built

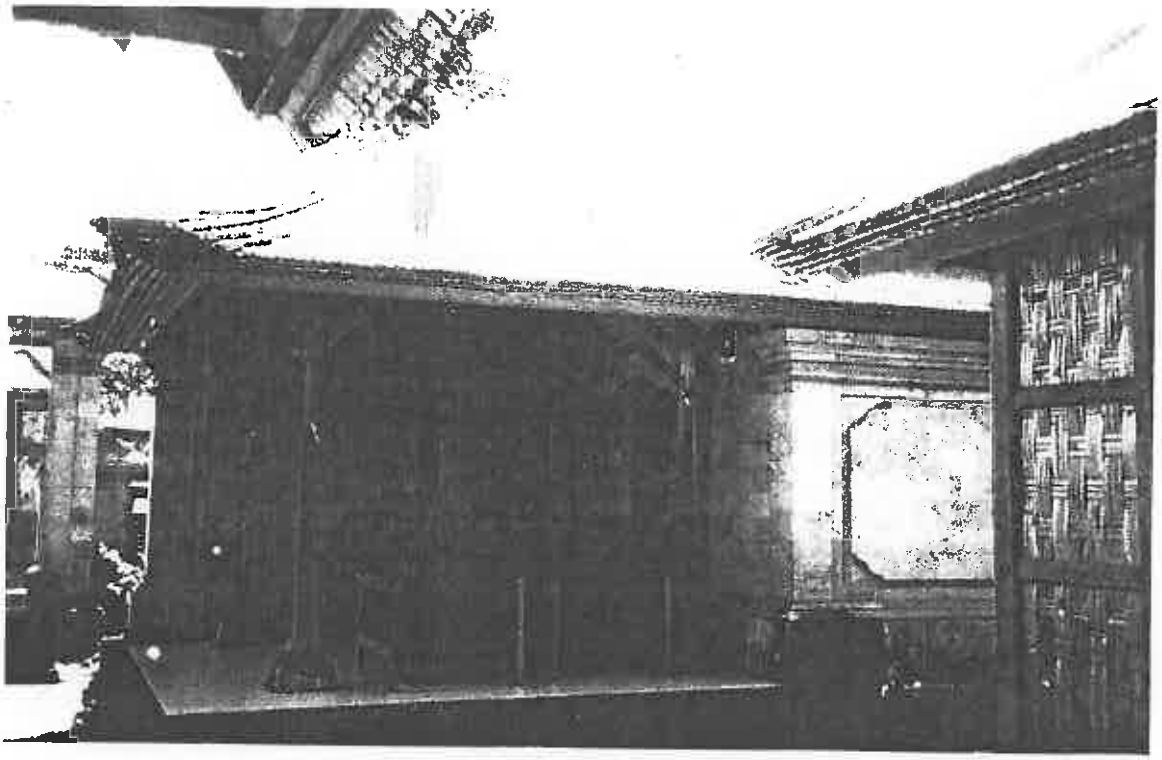
into the cultural system. The existing laws, as a system for regulating society, are known as "awig-awig". Government (i.e. formal) laws and regulations are usually supported by traditional or informal laws and regulations. The District Head plays a big role in every development process. He has a double role in society as both an informal leader as well as a formal leader. Sectoral policies follow the existing institutional arrangement under the leadership of the District Headman. And in the social system that has already established, the community has its own rules, manners and customs, and the pattern of development follows them.

The 75 Ha bamboo forest near Penglipuran has 15 varieties of bamboo, and is a useful source of alternative low-cost building material for the community. So, rather than use modern materials like cement, the community can use bamboo : is cheaper and more traditional. This source of bamboo almost disappeared in 1990 due to over-exploitation. Since then, local government has enacted conservation regulations which prevent people from cutting bamboo wherever they want and has been reintroducing bamboo as a indigenous material to be planted by the community. Next to the protected bamboo Conservation area, there is a bamboo training center with expertise and modern equipment to utilize bamboo as a multipurpose commodity. Some people from Penglipuran are involved in the center, although many people outside the village are involved as well.

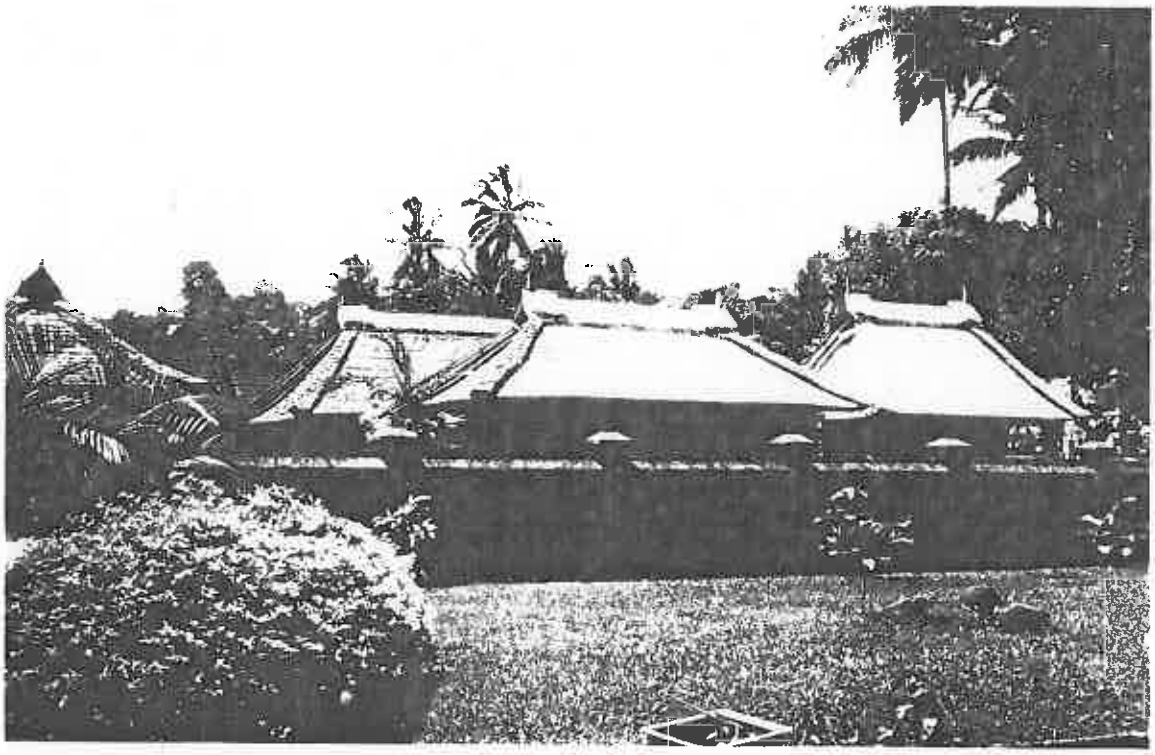
Summary

Penglipuran's community have willingly accepted the concept of conserving their traditional architecture. A few people have built their houses with modern materials such as bricks, etc., but they still keep the traditional model and style. This is very clearly seen in the design of the front gate, the "angkul-angkul". Before restoration of the houses began, local government discovered in village meetings that the community were already conserving the traditional style, so decided to support by developing infrastructure facilities (such as road facilities, from local stone rather than asphalt), the construction of a meeting room, and even construction of "a model house" as an example for other people who would like to restore or build their own houses his model house has already been completed, and uses bamboo extensively in its construction, giving a low cost but effective and traditional means of construction.

Since the successful efforts at Penglipuran, the local government has begun working with the community in other places such as Pengotan, Kayang and Tika. It is considered that the development model used at Penglipurna is a good way of ensuring that the existing culture and architecture are retained and enhanced, using low-cost methods and cheap renewable materials like bamboo. It is clear that Bangli District, where Penglipuran is located, that other villages also possess traditional architecture worthy of conservation.

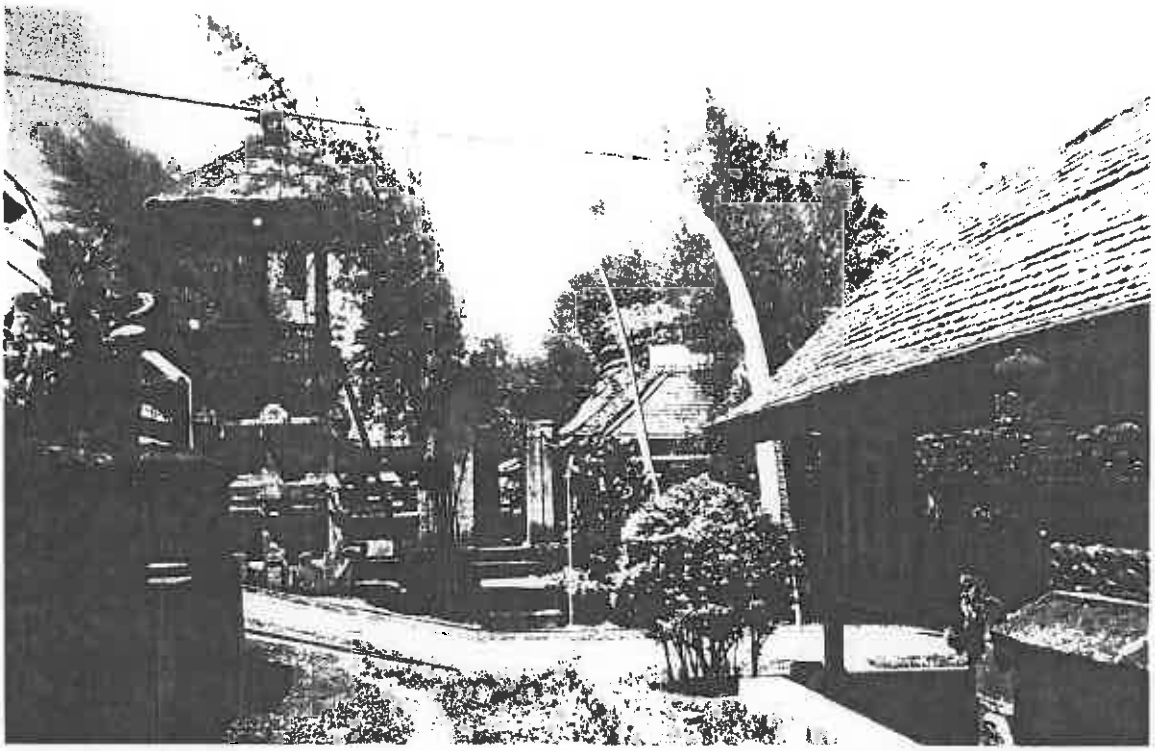


One of the house in Panglipuran

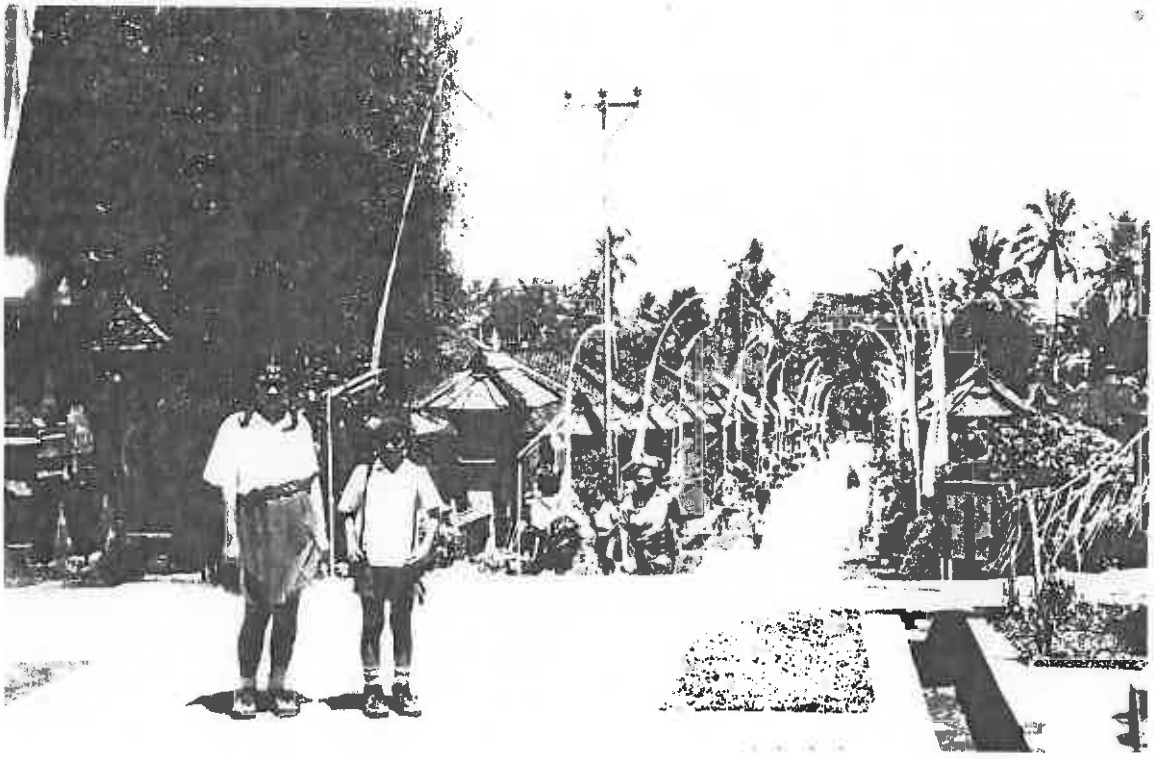


Bamboo roof is the traditional material in Panglipuran

Panglipuran, Bali



Community center and the watch tower. In this center the community held their meetings, play music, and other neighborhood activities



The main path way in the village

IDENTIFICATION TAG

Title :	Integrated Urban Infrastructure Development Program in Cirebon
□Key Organizations :	Public Works Office, Local Government of Cirebon, NGO (LP3ES), Community Institution, Informal Leaders and the Swiss Government.
Contact Persons :	Drs. H. Kunaedhi Syafrudin, the Mayor of Cirebon Ir. Sri Supanti, Project Manager of Cirebon Urban Development Program Supriyanto, Community Development Worker, LP3ES
Key Dates :	1977 - 1995

Every Area in Cirebon Has Access To Improved Sanitation - And It's Community Based And Sustainable Description:

Phase one of Cirebon Urban Development Programme (CUDP I) began in 1977 and initially focused only on the provision of clean drinking water for the community. The second phase (CUDP II) extended the scope of the program to include sewage treatment and drainage, with linkages with the Public Works Office for provision of piped water. During this second phase, an NGO called LP3ES was involved in the community preparation. They began a program known as "Community Participation", increasing environmental awareness and care amongst local school children to encourage them to participate in cleaning up the city. In the third phase, CUDP III, this community participation has become a major focus. The project has also been expanded to incorporate garbage management alongside clean water supply, sewerage and drainage.

In CUDP III, the project's aims have been to make the community more aware of their environment and to encourage more community participation in environmental improvements, thereby empowering the community to identify and solve environmental problems for themselves.

CUDP III now covers all 22 Kelurahan (the smallest form of local government) in Cirebon, and has community facilitators working in each kelurahan. These facilitators have concentrated on finding the best ways of involving the community so that there is meaningful community participation rather than just teaching. The facilitators, together with each kelurahan's "Forum Mawas Diri" (a community and local government's forum for decision-making and monitoring, established by CUDP III), have succeeded in mobilizing labor, expertise and funding from within the community. CUDP III refers to this as "development from within". There has been particular emphasis on the developing the role of women. The involvement of women in environmental program play an important role since the women is "the one" who fully responsible for the house and neighborhood environment cleaning.

Projects already implemented include, amongst others, construction of new micro-drainage systems, cleansing living concessions for animals living in the community (e.g. goats and poultry), building or repairing public washing facilities and toilets, repairing garbage collectors' handcarts, composting household garbage, etc.

To date, a total of over Rp 80 million has been disbursed in credit from the CUDP Is special Community Development Fund to support these community projects. Over 85% of the total cost of these projects has been self-financed by the community in this way.

From this description of the project, it is clear that the project is very successful. Not only is it truly participate, but it has also been operating for 5 years now and has obtained substantial environmental improvements for the communities involved. Also, it has successfully managed to extend its coverage throughout Cirebon, a city of 260,000 population.

But in spite of these obvious successes, what makes the program perhaps most interesting is its focus on securing the participation of school children. Community facilitators have been working with children in schools to increase their environmental awareness, and make them more environmentally-friendly. The creativity of the school children themselves has been harnessed, too, and they have produced four picture books. These have now become part of the educational curriculum. The overall aim is to instill care for the environment at an early age, so that when the children grow up it is natural for them to be aware of their environment and how they are affecting it. What can be more sustainable than that?

Summary

Community participation in the environmental Programme in Cirebon is a means of ensuring the continued sustainability of the infrastructure facilities that have already been built. It is easy to build modern urban infrastructure if funding is available, but the most important thing is how to maintain the facilities built. To address this matter, the government and the people of Cirebon are preparing themselves to involve communities in their environmental programs in order to maintain the urban infrastructure that already exists.

Beside heightening awareness of environmental cleanliness in the community, school children are also being prepared by giving them educational tools on environment issues, such as creating environmental reading books, that they can discuss amongst themselves. These books are now being produced for all school children in Cirebon. The material in the books deals with the impact of daily activities on the environment. This is one way of encouraging children to understand environmental issues from an early age so that, when they grow up, awareness of environmental issues is second nature to them. And they know how to deal with the issues.

IDENTIFICATION TAG

Title :	Kampung Improvement Programme (KIP), Jakarta and Surabaya, Indonesia
Key Organizations:	Bappem PMHT Jakarta and Bappem KIP Surabaya (Development Planning Boards)
Contact Person :	Ir. Darundono, M.Sc (Jakarta) Prof. Johan Silas (Surabaya)
Key dates	The first KIPs began in Jakarta and Surabaya in 1969

IMPROVING KAMPUNG, INCREASING PEOPLE INCOME!"

Background to KIP in Indonesia

Large numbers of Indonesian city dwellers live in "kampungs", the traditional type of urban development in Indonesia. Kampungs are dense neighbourhoods of housing intermingled with informal employment like foodstalls, tailors and kiosks. The buildings are mostly single story without gardens, and there are no cars or vehicles within the neighborhood because access roads are narrow alleys or footpaths.

Kampungs are not usually slums as such, although development is normally very dense. Environmental conditions can vary from hygienic to filthy, depending on the standard of the kampung. Most inhabitants are from lower income groups who have less access to facilities for upgrading their housing than wealthier sectors of society, and they are usually left to deal with their own housing problems.

The essential aim of KIP is to upgrade environmental conditions in kampungs to a minimum acceptable standard for healthy and pleasant living. Given that in Surabaya, for instance, the total kampung area is only 7% of the city area but it accommodates 63% of the total population, KIP can be seen as an innovative approach in ensuring the right of low income groups to live in a decent settlement.

KIP began in Jakarta and Surabaya in 1969 in response to the failure of conventional urban renewal to solve the problems of kampung improvement, for various reasons. For its first five years, KIP's resources were limited ; its funding came partly from the city government and partly from the community. From 1974 the World Bank provided loans for KIP, permitting the scale of the Programme to be expanded.

For the first 20 years of its existence, KIP's focus was on physical improvements, including access (roads and footpaths), drainage, sanitation, drinking water, solid waste disposal, and health and education facilities. However, recognizing that lasting development has to involve not only physical change but the community themselves, the latest phase of the Jakarta KIP enlarged the focus of its predecessors.

Jakarta

In 1989, the objectives of the latest phase of KIP in Jakarta were broadened to include improving the social and economic welfare of the community, strengthening existing community development organizations, and increasing the participation of the community in the KIP process.

The basic concept is that all improvements carried out are based on the priorities and needs of the community. The community will be involved in both planning and implementation, whilst the government's role is redefined as a facilitator, mediator and motivator. The two new elements in addition to physical development are:

1) **Social Development** Aims to strengthen community organizations, raise community awareness about environmental health, make people aware of the potential that they have to deal with their problems, and develop a sense of ownership and responsibility towards the community. Implementation is through a Community Development Consultant and a Community Development Action Group, carefully selected local motivates who will live in the target community, motivating the community and later working with the community to organize the community's inputs in the form of land, labor materials and funding.

2) **Economic Development** Aims to increase local incomes as a prerequisite for improvement of community welfare. Action includes setting up a Community Development Fund to provide saving and loan services to the community, supporting small business development with training, technical assistance and marketing development (the small scale business sector employs an overwhelming majority of people in kampungs), and a job creation Programme.

This multi-pronged KIP has been operating in 10 areas in Jakarta since 1989. Its direct benefits can be seen in the target kampungs, which are greener, fresher and cleaner. Equally importantly are the invisible benefits of better health conditions, and improvements in the way of life resulting from increased environmental awareness.

Surabaya

Since Surabaya's KIPs began in 1969, 70% of the city's kampungs have been covered by the scheme. In a city where 63% of inhabitants live in kampungs, this represents over a million inhabitants. The Programme has had a stimulating effect on the gradual development of most dwellings from provisional to semi-permanent and permanent housing, while the number of on-plot facilities (toilets, garbage bins, water supply, electricity, etc.) have increased markedly.

The Surabaya KIP scheme is based on the principle that sustainable local development can only be achieved by the public sector and the community working in partnership. The Programme relies to a great extent on local community organizations, with a hallmark being mutual consultation, contributions and commitment from both government and the community.

Born out of the necessity of limited local government resources, the community's own contribution to kampung improvement in Surabaya has become a strong asset for the program's sustainability. On average, every Rp 1 million invested by the government in KIP is matched by a RP 0.5 million contribution from the community, plus additional private investment by community members not included in the KIP budgets (e.g. providing street lighting, planting vegetation, improving on-plot facilities).

Women have a prominent role in the Programme, most importantly in maintenance and the establishment of small businesses such as hairdressers, tailors and food stalls. By recognizing

the prominent role of women in development, KIP has facilitated the participation of women in improving the living environment.

The mutually supporting roles of government and community in the KIP process mean that it is very sustainable. The living environment of a very large part of the city's population has been improved, and the community has been motivated to organize its own affairs. The Programme has been very cost-efficient to the government due to the high levels of contributions from the community. Furthermore, kampung communities have tended to remain intact after KIP implementation, with very few households selling their properties despite the temptation of increased land values.

Summary

KIP is a long-standing environmental improvement Programme which has successfully managed to deliver real improvements to large areas of kampungs, the basic neighborhood unit of Indonesian cities. In contrast to previous policies which displaced existing inhabitants by destroying kampungs and starting again, KIP seeks to conserve both the urban fabric and the existing communities by improving what is already there.

The two examples referred to, in Jakarta and Surabaya, demonstrate how KIP has broadened its scope from a merely physical improvement Programme to one that also promotes community participation and development.

IDENTIFICATION TAG

Title :	Kampung Susun at Pekunden as Housing Unit for Slum Dwellers in Semarang, Indonesia.
Key Organizations :	Soetrisno Suharto, City Mayor of Semarang Panggarjito, Project Manager Ibu Kisman, Chairperson of "Paguyuban" (community organization)
Key Dates :	88 flats, constructed in 1993 and now finished. One family per flat.88 families benefit and get decent new homes to live in

Description

"Kampung" is an Indonesian term referring to informal human settlements in the city, catering to the needs of urban poor with a variety of affordable housing units (Prof. Eko Budihardjo, 1995). Kampung Susun Pekunden, in a prime location in Semarang, was originally a pioneer of urban improvement management program as a form of urban renewal program in Semarang. This program is just one urban renewal solution being used to deal with slums in the city, since kampung eradication through eviction could not meet target goals.

"Kampung Susun Pekunden" rehouses 83 families on the same land that they previously occupied, but using higher-density walk-up flats that improve living conditions, make more efficient use of land to allow construction of a park, but at the same time respect of the wishes of the community in the design. The development process, the role of government has been very significant, especially in supporting the physical construction; the government has provided approximately one-third of the funding. Other institutions involved in the process include the Housing Ministry in Jakarta, the University of Diponegoro in Semarang, and Yayasan Dana Bantuan Kesejahteraan Social (Social Welfare Institution).

The development process can be seen as a combination of top-down and bottom-up planning. When they started construction, the community had the right to choose the model that they wanted. In this case, the project manager tried to accommodate the needs of the community without ignoring therequirements of the architectural model being implemented.

After construction finished, the community became responsible for maintaining the building and managing the community who live there. They set up a community group called a "Paguyuban", which manages the community facilities and the profits obtained from them (for example, renting out the meeting room for public use).

The common assumption that low income families do not like living in flats is completely wrong. Whilst they may not like living in high-rise flats, medium-rise flats are different. Based on discussions with the community, these particular new housing units that they occupy have really become comfortable homes in a very convenient environment. Looking at the building itself, the truth is that its architecture really accommodates the needs of the community.

The term "Kampung Susun" literally means medium rise kampung, a unique type of walk-up flat which has the ambiance of kampung; full of a variety of housing units, a complete mixture of dwellings with shops, and other social and economic facilities. The dwellings are capable of being modified slightly according to their occupiers' preferences, and it is relatively easy to

create clusters of dwellings in order to foster a sense of belonging amongst the people (Prof. Eko Budihardjo, 1995).

The central concept of the design is that all of the flats have a large open balcony that faces inwards onto a central courtyard. This balcony is big enough for the families to do activities outside, as they would do in normal houses. As it faces inwards onto a courtyard, the families' private activities (drying their washing, etc.) cannot be seen from outside the kampung Susun, something which is socially and culturally very important.

No families live on the ground floor, as it is reserved for social and economic activities - shops, food court, community meeting rooms, etc. The flats are oriented in such a way that all of the families on a single story can socialize together and belong to one neighborhood group (RT).

As the development is medium-rise walk-ups rather than single story housing as existed on the site before, there is now extra land within the development that has been used to create a park, with areas of grass, flowers and trees, a dramatic improvement in the community's living environment.

Even though all of the community have already moved into the flats, the government is still giving them attention whenever they need it. The community group (the "Paguyuban") is playing an essential role in democratizing the inhabitants. Everybody has the right to complain or give their idea in discussion.

The community has a very committed and strong leader who can accommodate the different requirements of the community and the government. She is very respected by the community groups on all stories of the flats, and acts like a place for anyone who has trouble with their flat. She is also provides help to anyone who wants to open a new business, using the small amount of money that the community's "Paguyuban" have collected. This Paguyuban will be driven to become a cooperative one day.

The replication of this type of flatted development is happening in some other places in Semarang and the government are committed to supporting similar developments in certain other areas. In Bandarharjo, still within the city of Semarang, there is another flatted development (but for rental by low income workers).

Problem Statement

There are three problems that have emerged and are in the process of being solved. Firstly, there is one flat at the top of a block which is occupied by a rich family, who did not used to live in the former kampung with the rest of the community. This rich family are not actually living in their flat but are renting it out as a boarding house, and they do not want to join the "Paguyuban". Secondly, it was agreed from the outset that occupants of the flats would have first option on using the ground floor units (for shops etc) - but in reality these people have found it difficult to obtain these units. Last but not least is the development of the food court. This is pure top-down development , its design does not accord with the preferences of the community in the flats. When this food court was being built, the community were not involved in the process at all, not even the design.

Summary

Medium-rise building as a means of replacing slum areas could be introduced to the community as long as they are involved in the planning. Various approaches, programs and action taken by the government will achieve good result if the community are informed and are aware of the goals being set. Social preparation could be done by the government or non-government organizations in cooperation with the community.

REPUBLIC OF INDONESIA

NATIONAL REPORT FOR

HABITAT II

ANNEX 3

TWENTY YEAR SHELTER SECTOR REVIEW

Final Draft
February 1996

National Committee for Habitat II
Jalan Kebonsirih 31, Jakarta, Indonesia

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ABBREVIATIONS AND ACRONYMS

Bappenas	National Development Planning Agency
BKPN	National Housing Policy Board
BTN	State Savings and Loan Bank
Cipta Karya	Directorate General of Human Settlements, Ministry of Public Works
GOI	Government of Indonesia
IUIDP	Integrated Urban Infrastructure Development Program
KIP	Kampung Improvement Project
KLH	State Minister for Population and Environment (pre-1993 Cabinet change)
KPR	Home Ownership Loan Program
MLH	State Minister for the Environment (post-1993 Cabinet change)
NUDS	National Urban Development Strategy
PDAM	Local Government Water Enterprise
Perumnas	National Urban Development Corporation
PLN	State Owned Electric Company
REPELITA	National Five-Year Development Plan
TKPP	Coordination Team for Urban Development

EXECUTIVE SUMMARY

This paper highlights the socio-economic, physical, regulatory, institutional, and policy changes that have taken place in Indonesia since, and in response to, the first Habitat Conference on Human Settlements in 1976. Since the Habitat Conference in Vancouver, Indonesia has completed the implementation of five "Five-Year Development Plans" and has achieved considerable progress in meeting its social and economic development goals. As Indonesia continues to make economic gains, standards for living conditions and housing in urban settlements will continue to increase.

The Changing Environment for Shelter and Infrastructure

One factor that has contributed to an overall increase in well being for Indonesians has been the successful reduction in total population growth rates over the past two decades, from a 2.4% yearly average in the 1970s to a 2.2% yearly average during the late 1980s. Despite this achievement, however, urbanization is increasing rapidly as urban areas become centers of growth with enhanced employment opportunities. Over 34% of the population now live in urban areas, and the urban growth rate for the past decade has proceeded at an annual rate of 5.4%.

Changes in the physical and economic environment have impacted shelter conditions both positively and negatively. Indonesians enjoy larger living spaces in their homes and are more likely to have access to physical infrastructure than twenty years ago. Higher per capita incomes have resulted in greater investment in household construction and amenities. The informal housing supply system has, on the whole, been able to provide the majority of the population with shelter, and the Government has been able to increase spending for the provision of public housing to cover shortfalls. The Government has also been able to afford more public spending on the construction of physical infrastructure such as water supply, roads, sanitation, and waste disposal. The Government has demonstrated its commitment to an improved urban environment by consistently allocating approximately 40% of the total development budget for this kind of spending. On the other hand, residents in urban areas suffer more from lack of access to water than do rural areas, and they also more directly experience the ramifications of an increasingly polluted environment.

The Institutional and Regulatory Framework

To meet the shelter and physical infrastructure needs created by changing demographics of the country, Indonesia has established a maturing regulatory framework and an evolving administrative structure. Changes over the past two decades include the development of an urban policy strategy, and institutional changes such as the establishment of a State Ministry of Housing and a Ministry of Population and Environment. A federal lending institute was established nearly twenty years ago, with a variety of modifications made in its structure and functions in the intervening period.

A broader institutional change that will bring urban management more to the local level is the Government's intention to press forward with the decentralization of infrastructure planning, management, and financing. The Government is committed to strengthening the capacity of local governments to manage infrastructure financing and to lessen decision-making dependency of local governments on central government ministries and agencies. While this commitment has been a conspicuous aspect of national policy since 1974, the shift of decision making power is occurring slowly. During the late 1980s, locally collected revenues increased by about 10% per year, a change that has required local governments to take more responsibility for accountable financial management. To this end, the Ministry of Finance has been providing technical support to local governments to improve financial management, as well as continue this trend in improving local revenue generation. The Ministry has also established a special lending account, the Regional Development Account, for making loans available to local governments specifically to support infrastructure development. Currently, Indonesia is launching a pilot program in which 26 district level (Level II) governments will exercise greater autonomy over their regions on a two-year trial basis.

Evolving National Policies and Plans for Shelter and Infrastructure

Perhaps the most accurate record of the Government's evolving approach to shelter and infrastructure issues is the succession of Five-Year Development Plans (Repelita), which document policies and set goals and objectives for national development activities for each five-year period beginning in 1969. This report reviews Repelita I-V, beginning shortly before first Habitat Conference on Human Settlements, and ending with the most recent Repelita.

Over that period, one continuing theme of the Government's development strategy has involved the Integrated Urban Investment Development Program (IUIDP), which has developed plans for infrastructure investment packages on a city-by-city basis. An integrated approach to addressing urban infrastructure needs has been evolving since the second Repelita, but can be discussed in terms of urban development "generations" since Repelita I (1974-1979). The current program combines the efforts of the Ministry of Public Works, National Development Planning Agency, Ministry of Finance, and the Ministry of Home Affairs into a single urban development approach that attempts to prepare local governments for a greater role in the management of urban physical environments.

Selected Government Programs

Indonesia has implemented a number of highly successful programs related to improved shelter and urban infrastructure, including the internationally recognized Kampung Improvement Program (KIP). A more recent housing program, known as Social Rehabilitation of Poor Areas (RSDK), has been implemented by the Ministry of Social Affairs, in connection with activities supporting the annual observance of National Social Solidarity Day (HKSN). RSDK relies heavily on community participation, and has

already benefited over 3.3. million people. Background information on these and other Government efforts is detailed in the body of this report, along with descriptions of a variety of other successful programs.

INTRODUCTION

"We shall not be able to build a complete Indonesian being, we shall not be able to enjoy spiritual and material well-being, we shall not be able to improve the quality of life, unless the problem of human settlement and shelter can be fundamentally overcome."

---President Soeharto, 1987, Addressing the International Seminar on Human Settlement and Shelter as Engines of Economic Growth and Employment.

Over the past twenty years, Indonesia has made remarkable progress in its socio-economic development and has advanced in a variety of sectors that determine the quality of housing and urban settlements. This paper reviews some these advances as they have affected shelter conditions, as well as related changes in the country's institutional structure, regulatory systems, condition of physical infrastructure, and trends in urban development. This paper also provides an overview of the specific housing policies undertaken by the Indonesian Government and traces Indonesia's urban development policies over the past five Five-Year Plans (known as Repelitas). Much of this shelter sector activity has been undertaken in response to the nation's participation in the 1976 UN Conference on Human Settlements in Vancouver. (Indonesia's current housing conditions are described in a separate volume of Indonesia's Habitat II National Report.)

National housing policy typically promotes a number of national goals. Housing not only contributes to growth by providing construction employment, it also acts as a savings incentive for households, and it can potentially serve as a platform for the development of home-based enterprises. Indonesia's housing policy has, over time, addressed the following goals:

- Improving housing quality
- Increasing the availability of more affordable housing
- Encouraging adequate living space
- Improving tenure choice
- Facilitating security in tenure
- Acquisition of minimum home amenities
- Minimizing discrimination in housing selection and finance
- Promoting a healthy and safe living environment

Over the last twenty years, the Government has focused particularly on three overall goals:

- Expanding the availability of housing
- Promoting home ownership, particularly in urban areas
- Improving urban neighborhood quality

These goals for shelter fit within the larger development of Indonesia's approach to urban infrastructure and management. This broader approach has required the development of a more mature administrative and institutional structure. Among other things, this has meant two decades of balancing the need for more government decentralization with the need for social and political stability. Slowly, central government has begun to devolve control over the planning, management, and financing of public activities to local levels of governments, while local governments have increasingly demonstrated the ability to shoulder more responsibility for urban management.

Indonesia provides public funding for the provision of housing; these efforts traditionally have been financed and managed from central agencies. This investment has steadily increased with Indonesia's economic prosperity. Traditionally, however, Indonesia places responsibilities for housing on the local community and individual, while the Government strives to create an environment that encourages private investment. This policy perspective, along with funding constraints, has meant that the percentage of direct Government investment in housing provision remains low. More than 90% of the existing housing stock was built by owner-occupiers.[1] In urban areas, housing provided by the government meets approximately 15% of the total housing needs, and the remaining 85% is provided by the private sector.[2] (See FIGURE 1: Percentage of Housing Construction by Developer Type -- 1986-92.)

The Government believes that its small but significant housing program expenditures can be viewed as carefully targeted economic investments for the nation. It is estimated that each billion rupiah invested in housing yields 1.7 billion rupiah in income, in addition to 105 individuals benefiting from direct employment and another 365 from indirect job opportunities.[3] Housing constituted 4.5% of total development expenditures in 1990-91. (See TABLE 1: Government of Indonesia Housing Expenditures.)

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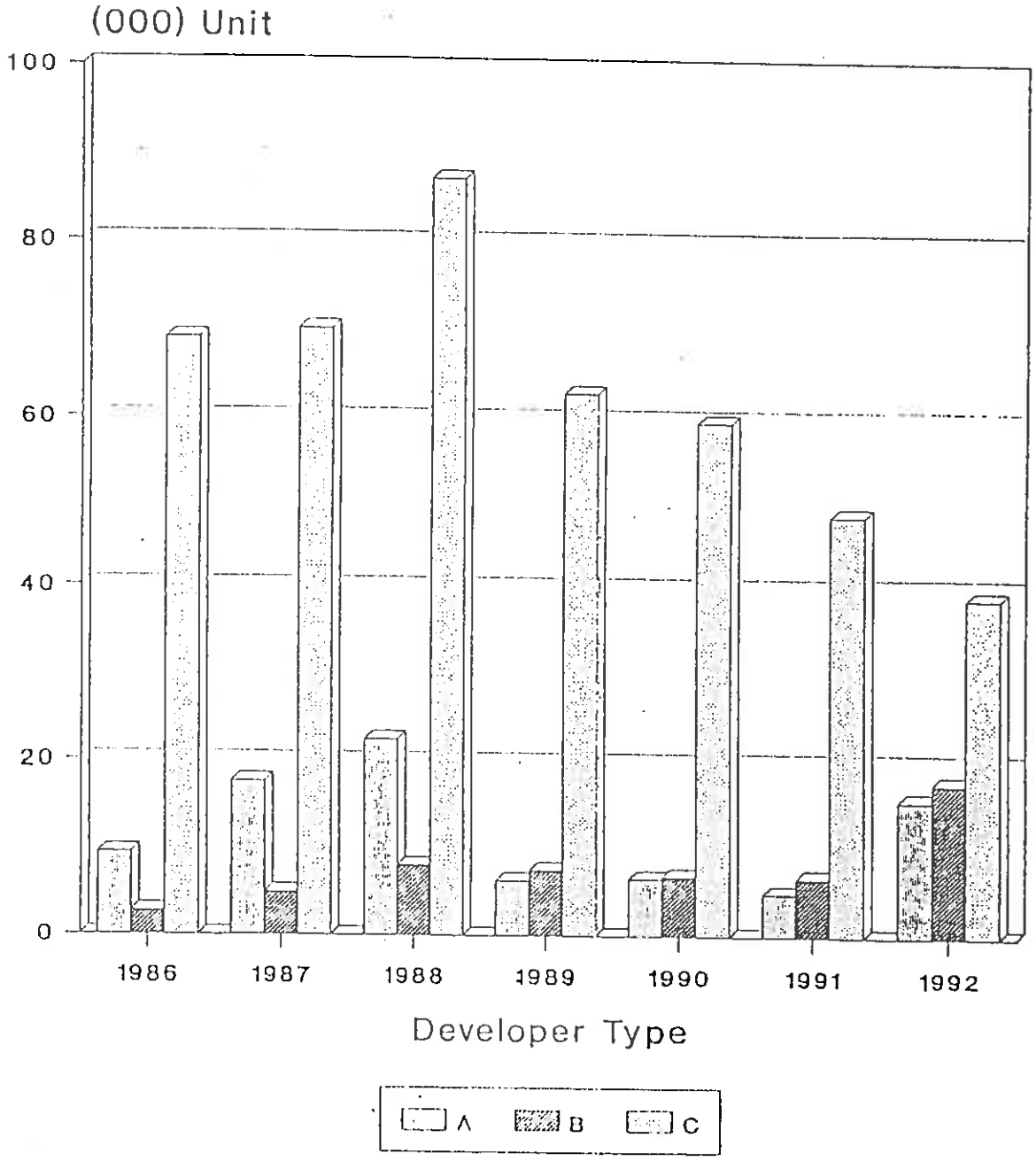
[1]Silas, 1994
[2]GOI, 1991
[3]Jammal, 1987

FIGURE 1
Percentage of Housing Construction by Developer Type
1986 - 1992



A: National Housing Enterprise
B: Indonesian Real Estate
C: KPR/BTN

Source: Biro Pusat Statistik, 1994

TABLE 1
Government of Indonesia Housing Expenditures

	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91
Indonesian GDP	99,078	106,350	129,046	147,086	175,378	200,900
GOI Routine Exp.	11,018	13,559	23,513	20,739	29,743	26,648
GOI Development Exp.	10,873	8,332	9,477	12,251	13,834	16,225
GOI Total Exp.	21,891	21,891	32,990	32,990	42,873	42,873
Public Housing Exp.**	335	337	431	481	495	729
Hsg as % Devel. Exp.	3.08%	4.04%	4.54%	3.92%	3.58%	4.49%
Hsg as % Total Exp.	1.53%	1.54%	1.30%	1.46%	1.15%	1.70%
Hsg as % GDP	0.34%	0.32%	0.33%	0.33%	0.28%	0.36%

* In billions of rupiah. ** These figures also include expenditures for residential water supply and sanitation.

Source: Bank of Indonesia

THE CHANGING ENVIRONMENT FOR SHELTER & INFRASTRUCTURE

Socio-Economic Changes

Over the last two decades, Indonesia has experienced a period of unparalleled economic growth. This growth has combined with a number of other factors including rapid population growth, smaller and hence more numerous households, rapid urbanization and rising real incomes to transform the Indonesian housing market.

Changes in Economic Conditions. Fundamental to Indonesia's quality of living conditions is the economic status of its people. Twenty-five years ago, Indonesia was one of the poorest countries in the world, with a per capita income of US$50. Since then, it has achieved an average GDP growth of nearly 7% per year, while per capita income increased about 4.5% per year, reaching US$884 in 1994. During the oil-boom years of the 1970s, Indonesia's development strategy emphasized channeling oil revenues into raising agricultural output and developing physical and social infrastructure. The economy grew nearly 8% per year during those years.

In the mid-1980s, external shocks rocked the economy--oil prices collapsed, international interest rates rose, and the US dollar depreciated. During 1983-88, the impacts of these shocks is estimated to have cost Indonesia about 7-8% of its GDP in income loss. To reorient the economy away from dependence on oil, Indonesia began a promotion of the private sector and encouragement of a more outward-oriented economic structure. Structural reforms also included fiscal and monetary restraint to re-establish macroeconomic stability. The economy recovered from the effects of the shocks and growth averaged 7% during 1988-91. Deregulation in the 1980s encouraged private investment; the private sector responded by contributing over 70% of GDP during the 1983-91 period. In 1989-90, the domestic economy overheated, causing accelerating inflation. Stabilization measures were imposed, and these had the anticipated outcome. Recent adjustments in the economy include the dramatic reduction in the non-oil trade deficit, a slowing of inflation, and the elimination subsidies for most fuel products. The continued diversification of the economy is demonstrated by the growing contribution that manufacturing makes to national GDP. In 1983 it contributed nearly 13% to GDP; in 1993 it contributed 22.3%. The oil and gas sector contributed only 9.6% in 1993, compared to its 1983 contribution of about 21%.

One of Indonesia's most important economic advances made during the past 20 years is a sharp reduction in poverty. Those living in absolute poverty in the early 1970s made up 60% of Indonesia's population. By 1990, this percentage had decreased to 15%, and it is expected to drop further to around 10% by 2000.

Several elements contributed to this reduction, including substantial investment in economic and social infrastructure.

Investment in Social Infrastructure. The Government has emphasized investment in human resource development both as a means for raising living standards, as well as a way to increase the overall capacity for sustainable growth. Social indicators from 1960 to 1990 underscore Indonesia's success: life expectancy at birth has increased by around 50%, literacy increased to about 80% (from 40% in 1965), and the country has achieved near-universal primary education. The role of women in development and poverty reduction has received serious attention, as reflected by increases in female school enrollments: 48% of all primary school students and 45% of secondary school students are female. The central government budget for education and health for 1993/94 is estimated at 3.5% and 0.5% of GDP, respectively.

Urbanization: Population and Migration. Between 1970 and 1990, the population of Indonesia rose from 120 million to nearly 180 million, an increase of 50%. During this same period, the number of households rose from 24.5 million to nearly 40 million, an increase of 62%. The major factor driving housing demand, household formation, has been growing at a faster rate than the general population. Another factor contributing to changing housing market conditions has been the nation's rapidly expanding urban population, which is a result of an increase in manufacturing jobs in urban areas, among other factors. Between 1980 and 1990, Indonesia's urban population increased by approximately 5.4% per year. In 1980, the total urban population was 32.8 million people; by 1990, the number had increased to 55.5 million, approximately one third of Indonesia's total population of nearly 180 million.

Urban productivity contributes about 50% of total GDP, and this is expected to increase to 75% in the future. During the 1980s, urban incomes grew faster than the national average GNP per capita. The proportion of urban residents with expenditures at or below the absolute poverty line decreased from approximately 29% in 1980 to about 17% in 1990. Indonesia's urban areas concentrate the "engines for growth" --industry, as well as higher education, capital investment, and other critical essential for economic development.

Changes in Urban Areas

Overview. The increase in the number of people in urban areas has created a corresponding increase in the demand for urban services--clean water, sanitation, roads, schools and housing. Similarly, higher concentrations of people mean that transportation system operations and management have to become more sophisticated in order to handle demand. Finally, the increase in industrial, commercial and residential occupancy of land increases the scarcity of land--people must pay more for land and there is less of it available for building houses.

Consequently, the need for regulating land use in a sustainable and equitable fashion becomes more critical as the size of cities increases.

Cities like Jakarta display some of the economic progress made over the past 20 years, with cleanly swept major roads lined by gleaming high-rise office buildings and beautifully kept landscaping. Visible, too, are luxury homes and apartment complexes built by a largely domestic housing construction industry for the nation's mid- and top-income levels. In 1990, Indonesians living in cities enjoyed a per capita household size of 4.74 people, and 87% of all homes were occupied by only one household. This represents a decrease from the 1970s and 1980s when household sizes remained stable at about 5.3 persons. (See TABLE 2: Key Indicators of Change 1971-90.)

Because Indonesia's urban poverty is declining, a greater percentage of the population can enjoy housing that both meets minimum shelter standards and permits access to basic physical infrastructure. Rising real incomes have increased the demand for housing by encouraging additional household formation, and have changed the nature of housing demand by permitting the construction of newer, more spacious and higher quality dwellings.

The Government of Indonesia recognizes, however, that there are still unacceptable living conditions in the slum areas and "kampungs" (traditional, lower income neighborhoods) of all major cities. These conditions exist despite the efforts of larger cities to transform inner city kampungs into more commercially productive areas. Two-thirds of all urban housing is located in kampungs, with varying degrees of physical infrastructure needs. Kampungs are not necessarily slums or squatter areas, although these conditions may exist in a kampung. In the majority of households, water provision is the primary, basic need; between 35% and 65% of urban households across the country still do not have access to clean water.

Changes in Infrastructure. In conjunction with advances in social infrastructure, the Indonesian Government has invested in another area critical for expanded prosperity: physical infrastructure. Infrastructure development has consistently received high priority in successive five-year development plans (Repelitas), averaging 40% of all development expenditure. Accordingly, all major infrastructure sectors over the past two decades have expanded substantially, and Indonesia has set ambitious targets particularly over the past decade for improving urban service coverage. For example, over the last twenty years, the installed capacity of the state electric company (PLN) increased 18-fold; the number of telephone lines increased seven-fold; and the length of paved roads increased nearly six-fold. In 1981 only 14% of the nation's dwellings were served by electricity, but by 1989 this figure had reached nearly 44%. In urban areas almost 84% of the homes were served by electricity by the early 1990s. (See FIGURE 2: Indicators of Infrastructure Development -- 1970-90.)

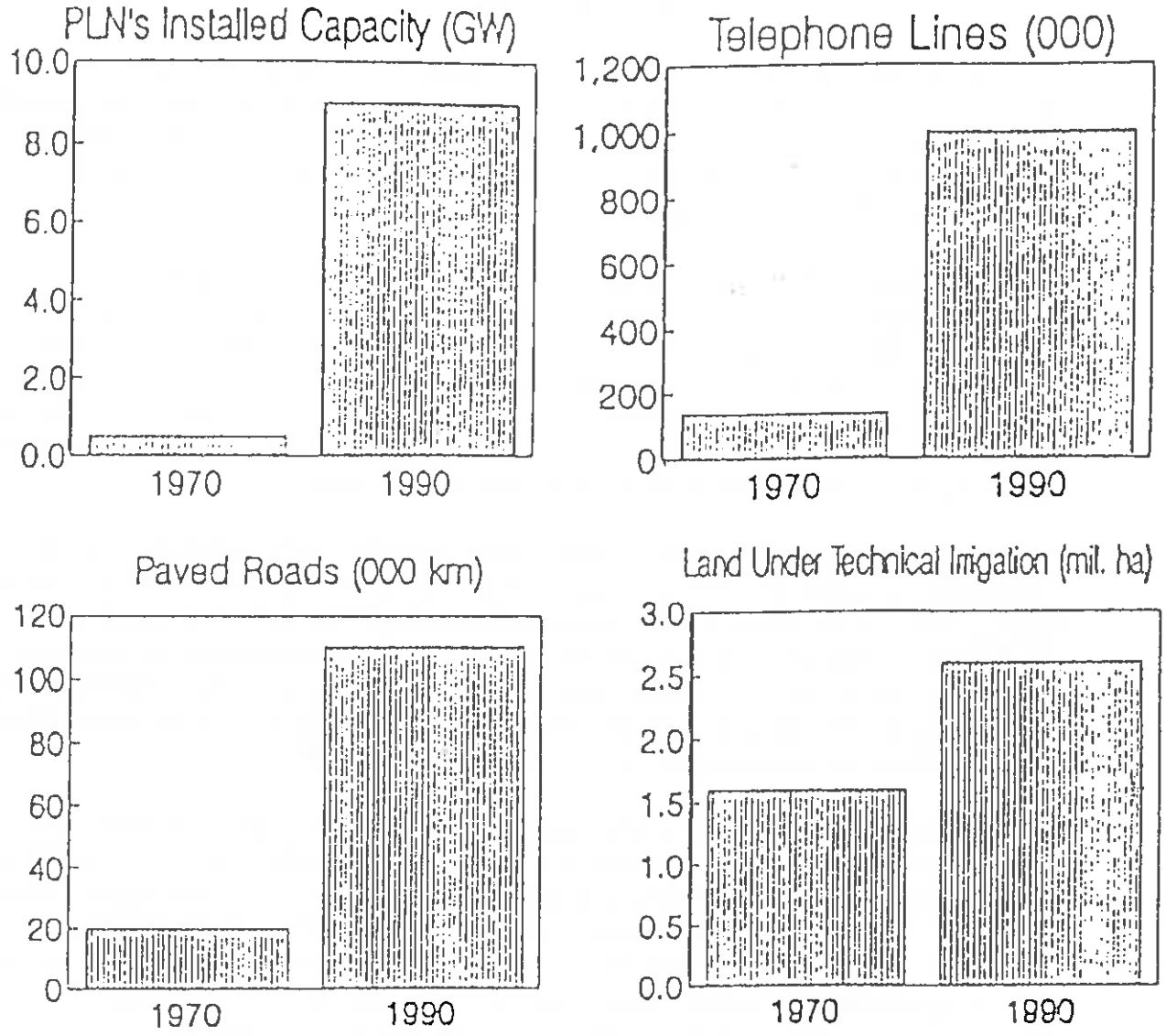
TABLE 2
Key Indicators of Change 1971 - 1990

	1971	1980	1990
Population	119,208,000	147,490,000	179,322,000
Percent Urban (1)	17.4%	22.3%	30.9%
Avg. Annual Growth Rate	2.10	2.32	1.97
Number of Households	24,507,000	30,372,000	39,689,000
Avg. Household Size	4.9	4.9	4.5
Rural	4.8	4.7	4.4
City	5.3	5.3	4.7
Age Distribution			
0-4	16.1	14.1	11.7
5-15	27.8	26.7	24.3
15-49	42.5	48.1	50.6
50+	13.6	11.1	12.9
Life Expectancy (2)	48	54	61
Males	47	53	60
Females	50	56	63
Per Capita Income in 1990 US$ (2)	$230	$340	$520

(1) Figures reflect an ongoing process of redefining urban boundaries. (2) Estimated from 1965-1989 data in World Development Report 1991.

Sources:
1. Biro Pusat Statistik 1971, 1980 and 1990
2. World Development Report 1991

FIGURE 2
Indicators of Infrastructure Development -- 1970-1990



Source: The World Bank, 1994

Although improvements in water services were not as dramatic as improvements in electricity, provision of this essential service continues to increase. In 1981, slightly over 11% of the nation's homes received piped or pumped water; by 1989 nearly 22% did so. Although gains were made in both urban and rural areas, the more substantial ones occurred in cities. By 1989, slightly more than 50% of urban households received piped or pumped water, compared with 10% in rural areas. In urban areas the gains came through reduced use of well water.

In the area of sanitation progress continues to be made, although more slowly because of the high costs of conventional sewerage systems. In 1980 approximately 29% of Indonesia's urban households had toilets with septic tanks. By 1989 this figure had risen to 39%. Between 1984 and 1990, solid waste services were improved in 198 cities and towns.

Changes in Housing. During the past 20 years, Indonesia's housing market has been largely successful in meeting the shelter needs of the nation's growing population. Since the early 1970s, housing stock grew with very little planning -- approximately 90% of the existing housing stock was built incrementally, and only about 5% followed a formal planning process. Lack of planning has contributed to over-density in some kampung areas, as well as environmental problems like over-use of aquifers that are the ground water sources for wells.

Housing costs in the formal sector have risen by 153% between 1980 and 1990 (slightly higher than the general inflation rate for the same time period, of about 133%). The combination of high land prices and high interest rates caused constraints on the production of dwellings for households with incomes around the 70th percentile of the income distribution. This group, however, has been the largest beneficiary of a homeowners credit program established by the Government (this program--KPR--is described in the "Programs" section below).

Over the past ten years, physical conditions of dwellings have improved substantially, as indicated by increase in the size of both urban and rural dwellings. The percentage of homes measuring less than 30 square meters decreased from 23.5% to 18.7%, while those homes measuring between 70 to over 100 square meters increased from 30.5% to 35.2% of the housing total. While keeping pace with demand, the Indonesian housing system has been able to supply larger dwelling spaces. (See TABLE 3: Dwelling Type and Size -- 1981-89.)

Regarding dwelling unit ventilation, there was limited progress. Nationally, the share of dwellings with windows declined from 76.4% to 74.5%. The declines occurred in both urban and rural areas, although they were more pronounced in urban areas. However, the proportion of dwellings without any kind of ventilation (window, vent or fan) dropped from 13.2% to 6.8%. The accompanying table

TABLE 3
Dwelling Type and Size -- 1981- 1989

	Indonesia		Urban		Rural	
	1981	1989	1981	1989	1981	1989
Total Dwellings (1,000s)	31,267	38,921	7,254	10,826	24,013	28,095
% Built by Informal Sector	*	90%	*	84%	*	99%
Type of Dwelling:						
Single Unit	89.5	92.9	73.9	83.3	93.4	96.6
Duplex	5.9	3.4	11.4	6.8	5.9	2.5
Multifamily	4.3	3.4	14.5	10.0	1.7	0.9
Size of Dwelling:						
LT 30 Sq Meters	19.3	14.5	23.5	18.7	18.2	12.9
30-69 Sq Meters	50.9	53.9	46.0	46.2	52.2	56.0
70-99 Sq Meters	16.2	18.3	16.2	19.2	16.2	17.9
100+ Sq Meters	13.6	13.3	14.3	16.0	13.4	12.3
Rooms in Dwelling:						
1 Room	6.9	3.8	7.1	4.4	6.8	3.6
2-3 Rooms	52.8	34.7	44.1	28.6	55.1	37.0
4-5 Rooms	31.7	44.5	34.4	42.5	30.9	45.3
6+	8.7	17.0	14.6	24.4	7.1	14.2

* Data not available.

Source: Biro Pusat Statistik, 1981 & 1989.

describes this trend, as well as the trends of infrastructure provision discussed in the section above. (See TABLE 4: Household Living Conditions --1981-89.)

Significant effort has been made to improve the physical conditions of kampung areas. Between 1984 and 1990, approximately 24,100 hectares of kampung area were upgraded, benefiting approximately 6 million households. (For a more extensive discussion of kampung improvement, see the "Programs" section, below.)

Changes in Housing Construction. While 35% of the construction industry in 1980 was foreign owned, the portion of the industry involved in housing was almost wholly domestic, and used little in the way of imported materials. The housing industry has remained domestically controlled. The real estate industry has developed in the past 15 years such that there are a small number of large, sophisticated developers and a large number of much smaller firms. In 1983, the Ministry of Home Affairs required that real estate developers organize as corporations specializing in real estate; no single proprietorships or partnerships were permitted to engage in this activity.

Fifteen years ago, new housing development was undertaken predominantly by an informal sector, with the formal sector accounting for a much smaller share of the activity. Little has changed in this regard. In the early 1980's it was estimated that 75% of new housing was built on "informally" subdivided land. Kampungs comprised well over half of Jakarta's housing stock, and it was estimated in 1980 that three quarters of new housing in Jakarta continued to be provided through these informal areas. The essential characteristic of informal housing is not the absence of formal financing, but rather the situation of building on land that is "off market" because of legal or practical impediments to its development, or because it is publicly owned land. Informal financing sources include intra-family borrowing, the conversion of uninvested assets (especially gold), and local money lenders. The ultimate security for the financing of most formal sector real estate transactions was, as elsewhere, an interest in real property. Demonstrating that the borrower has a legally enforceable interest in the property through unambiguous documentation continues to be somewhat difficult.

TABLE 4
Household Living Conditions -- 1981- 1989

	Indonesia		Urban		Rural	
	1981	1989	1981	1989	1981	1989
Lighting: *						
Electricity	14.0	43.8	46.7	83.9	5.6	28.3
Kerosene	84.9	71.1	52.6	15.9	93.2	71.1
Source of Water:						
Pipe/Pump	11.4	21.8	38.6	51.5	4.4	10.4
Well	59.5	55.2	53.3	43.9	61.1	59.6
Spring	14.6	13.3	1.4	1.9	18.1	17.7
River	8.6	6.4	1.3	0.6	10.5	8.7
Other	5.7	3.3	5.3	2.0	5.8	3.7
Toilet:						
Private w/ Septic Tank	9.7	17.6	28.8	39.0	4.7	9.3
Private No Septic Tank	22.8	25.3	20.6	20.1	23.4	27.3
Shared	11.7	9.6	18.8	16.3	9.8	7.1
Public	8.8	4.9	10.2	5.7	8.5	4.6
Others (Including None)	46.9	46.6	21.7	18.9	53.7	51.8
Sunlight & Air:						
Dwelling Has Windows	76.4	74.5	86.4	78.9	73.8	72.7
No Windows Has Vent.	10.4	18.9	8.5	18.1	10.9	19.2
No Windows, No Vent.	13.2	6.8	5.1	3.2	15.3	8.2
Bathing Facilities:						
Private	**	47.0	**	66.9	**	39.3
Shared	**	23.7	**	24.2	**	23.5
Public	**	18.4	**	6.0	**	23.2
Other	**	10.9	**	2.9	**	13.9
Floor Material						
Tile/Cement	**	47.1	**	77.5	**	35.4
Wood	**	17.9	**	9.1	**	21.3
Bamboo	**	4.4	**	1.0	**	5.7
Earth	**	30.2	**	12.1	**	37.3
Wall Material:						
Brick	**	38.5	**	59.5	**	30.4
Wood	**	31.1	**	25.3	**	33.4
Bamboo	**	28.1	**	14.1	**	33.6
Others	**	2.1	**	1.0	**	2.6

* Other for this category is 1% or less. ** 1981 data not available.

Source: Biro Pusat Statistik, 1981 & 1989

THE INSTITUTIONAL AND REGULATORY FRAMEWORK FOR SHELTER AND INFRASTRUCTURE

The Legal & Administrative Structure

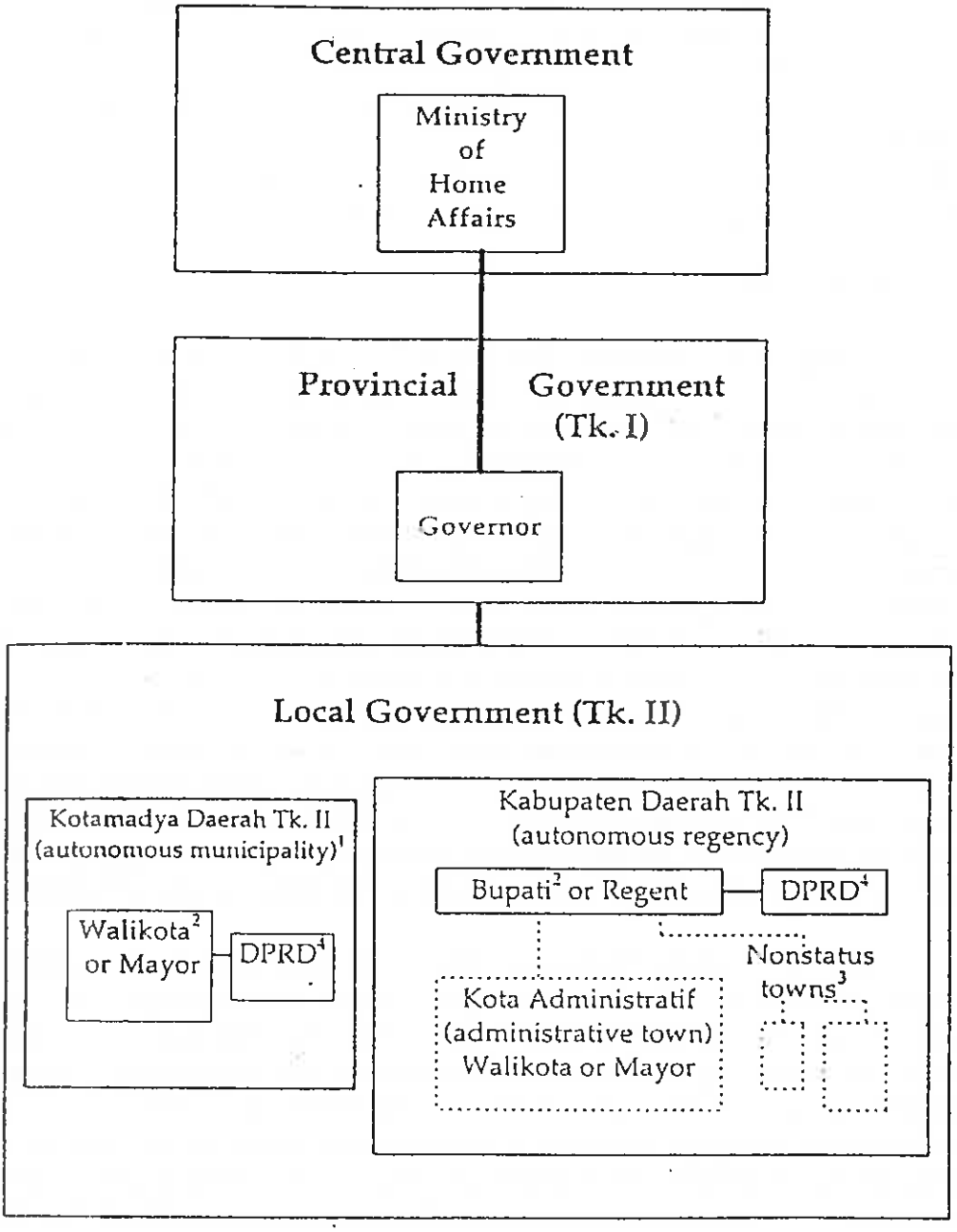
National legislation that most directly addresses housing issues is the 1992 Housing and Human Settlements Law. It states that housing is a basic requirement for the improvement of equitable community welfare, and adds that every citizen has the right and responsibility to decent shelter, as well as the right to participate in housing development. The law describes the regulatory role of Government in pricing as being limited to housing that receives public support, although effective housing supply would be promoted in large scale land development projects through the National Urban Development Corporation, Perumnas. In cooperation with local governments, Perumnas supports land owners who privately invest in development.

The State Ministry of Housing has the principal responsibility for formulating national housing policies and for coordinating housing-related policies and programs. The Directorate General for Human Settlements (Cipta Karya) in the Ministry of Public Works is responsible for the physical aspects of housing activities, including the development of regulations; establishing standards; providing technical assistance; and the implementation of housing programs.

Indonesia's primary urban administrative structure begins at the local level with these classifications: autonomous municipalities, non autonomous municipalities, townships or administrative towns, and non-status towns. Municipalities are administered by mayors and are supervised by the provincial administrations, the next higher level of government. Administrative towns (non-autonomous) are supervised by the regent of the regency government (the predominately rural area that encompasses the administrative towns). They also have a mayor, but his/her status is lower than that of a municipal mayor. The provincial government responds to the central government through the Ministry of Home Affairs. (See FIGURE 3: Summary of Indonesia's Urban Administrative Structure.)

There is not yet a comprehensive uniform division of functions between provincial and local governments. Mayors of municipalities, however, have authority to coordinate local government agencies and deconcentrated agencies of central government ministries. The mayor performs this function through the local planning boards. These local planning boards, known as Bappeda, were created in 1980 to increase the capacity of provincial and local governments for planning and budgeting. Provincial level Bappeda, created in 1974, assist Governors in the formulation of regional development policy, coordinate development planning activities, and monitor and evaluate development program implementation.

FIGURE 3
Summary of Indonesia's Urban Administrative Structure



Notes:
1. There is one non-autonomous municipality (Batam).
2. *Walikota* or *bupati* are simultaneously the central government's representative in the region and chief executive of the autonomous local government.
3. Nonstatus towns may be governed by the *bupati* or by lower level officials (*camat* or *lurah*)
4. DPRD = Council of Local Representatives

Source: Suselo, et al., 1995

Each of the Government's Five-Year Development Plans (Repelita) have included policies that promote increasing the capability of municipal administrations through technical assistance and training. To help achieve this goal, a variety of training programs have been implemented over the past 25 years. Another program to help local government officials become better managers is the Program to Improve Urban Government Efficiency. Its focus has been the upgrading of key urban areas to full city status (autonomous municipalities), thereby permitting an administrative structure more appropriate to the city size.

Decentralization

A variety of regulations that affect the conditions of urban settlements relate to the levels of authority that local governments have in administering policy and developing policies for urban areas. Law No. 5 of 1974 provides the umbrella legal framework for guiding the distribution of responsibilities to lower levels of government. In 1987, Government policy instructed that the provision of urban infrastructure was largely a local responsibility. Although the distribution of responsibilities for public service provision is still highly centralized, the Government is making strides to actualize this 1987 declaration. For example, Law No. 45/1992, maps more clearly the path for transferring responsibilities to local government. By this Regulation, the focus of further devolution of responsibilities would be on Level II governments (districts), and the devolution envisaged is from both central and Level I (provincial) governments. Accompanying the transfer of responsibilities will be the transfer of associated budgetary resources, and transfers will be linked to the capacities of Level II governments. In April 1995, Indonesia will launch a pilot program under which 26 district level (Level II) governments operate for a two-year trial period with almost complete autonomy in a large variety of administrative areas.

The Government recognizes that meaningful decentralizing depends upon central government officials reducing the control they exercise over resources, while local government officials shoulder more of the decision making responsibility. In urban management, decentralizing involves several departments, usually including the Ministries of Home Affairs, Finance, and Planning. When local governments do not have the technical expertise or management capacity, they will be unwilling to assume responsibilities and central officials will be unwilling to transfer authority. To overcome this not unusual experience, the Government channels technical assistance to local governments through projects and training programs. For example, provincial planning agencies--Bappeda--were established in 1975, as a further elaboration of the 1974 law on decentralization. Bappeda officials are to advise their governors on planning issues in the region; to overcome the gaps between responsibility and capabilities, Bappenas worked with local universities across the country to provide training for qualified Bappeda staff. This training project (TMPP) has been ongoing since 1990, and it provides a merit-based mid-level training opportunity for the top 5% of each training class.

In addition to human resource development, decentralization also requires interdepartmental coordination. The Government establishes steering committees or coordinating teams. These committees are especially critical for operating large foreign donor projects that, in accord with an integrated strategy, straddle several different departments.

Urban Infrastructure Finance

Because the population density of Indonesia's urban areas is increasing so rapidly, the Government's per capita expenditure on urban services has decreased somewhat. In addition to rapid growth, another fiscal constraint is the backlog in basic services. Until recently, financing for urban services and infrastructure has been undertaken to meet basic needs, rather than linking investments to revenue income. This has resulted in large capital expenditures, since needs have been so great. Given the sizable unmet demand already existing for some services, and the new demand that will arise as Indonesia maintains rapid growth in the 1990s, investment in infrastructure will need to increase substantially. This will require both a large program of public investment as well as substantial efforts to increase private participation in the planning, management, and financing of these services. (See TABLE 5: Infrastructure Investment Programs by Sector and Public/Private Participation.)

Substantial progress has been made in some aspects of financing urban development. For example, property tax changes made in the mid-1980s simplified the previous property-based tax system by consolidating land-related taxes, broadening the base by reducing exceptions, and changing the base from rental to capital market. These changes produced an increase of 106% in revenue over a four-year period. More recent changes, announced in 1994, allow local governments to keep all property tax revenues, thus adding substantial funding to local government efforts to develop and maintain their infrastructure facilities. The municipal tax assessment and collection system (MAPATDA) also showed improvements beginning in the mid-1980s, increasing the percentage of governments' own source revenues by 20-26%.

Indonesia is now working to further reform its system of public finance so that it is more performance related and more dependent on local revenue generating capacity. Currently, private investment in the provision of infrastructure services (in power generation, toll roads, ports, education, and health) amounts to a little over 1.5% of GDP. Government provides most of the resources for these kinds of investments. Resources currently available for urban infrastructure include budgeted expenditures made directly by central government ministries and agencies; central government transfers to local governments (particularly the Presidential Instruction, or INPRES, grants); central government revenues assigned to local governments (such as the property tax); own-source revenues of local

TABLE 5
Infrastructure Investment Programs by Sector and Public/Private Participation
(percent shares in total infrastructure investment)

	Public Sector		*Private Sector*		*Total*	
	1989/90-93/94	*1994/95-98/99*	*1989/90-93/94*	*1994/95-98/99*	*1989/90-93/94*	*1994/95-98/99*
Power	35.4	36.4	9.8	34.5	29.6	35.7
(% of GDP)	(2.0)	(2.1)	(0.2)	(1.0)	(2.2)	(3.1)
Telecommunications	9.8	11.6	6.5	6.9	9.0	10.0
(% of GDP)	(0.5)	(0.7)	(0.1)	(0.2)	(0.6)	(0.9)
Transport [a]	42.7	39.0	77.2	51.7	50.5	43.3
(% of GDP)	(2.4)	(2.3)	(1.2)	(1.5)	(3.6)	(3.8)
Irrigation	6.1	3.2	..	..	4.8	2.1
(% of GDP)	(0.3)	(0.2)	..	..	(0.3)	(0.2)
Water resource mgmt.	2.9	2.4	..	..	2.2	1.6
(% of GDP)	(0.1)	(0.1)	..	..	(0.1)	(0.1)
Urban water & sanitation	3.1	7.4	6.5	6.9	3.9	7.3
(% of GDP)	(0.2)	(0.4)	(0.1)	(0.2)	(0.3)	(0.6)
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
(% of GDP)	(5.5)	(5.8)	(1.6)	(2.9)	(7.1)	(8.7)
Memo item:						
Total Investment in Rp. trillion (1989/90 prices)	52.2	73.0-77.0	15.3	37.0-38.0	67.5	110.0-115.0

a Includes investment in fixed as well as non-fixed public transport infrastructure facilities. The bulk of private investment is non-fixed transport services (commercial trucks, buses, ships and aircraft), although a rising proportion will go towards fixed facilities in the future (e.g., toll-roads, ports, etc.).

Source: GOI Repelita and World Bank Staff Estimates

governments (local taxes and user charges); and loans to local governments and regional enterprises. Some of the forward looking changes recently made and under consideration are described below.

- INPRES grants are disbursed as block grants for development expenditures and as earmarked grants targeted at specific services such as roads, bridge and reforestation. The share of block grants in total transfers has increased from around 15% in 1985/86 to about 20% in 1992. In addition, the use of earmarked grants is being increasingly left to the discretion of local governments.

- The Ministry of Home Affairs has proposed reformulating various central government subsidies to local governments (e.g., the subsidy for personnel expenses), so that they be made as general purpose block grants, instead of detailed, inflexible subsidies determined by the central government.

- The percentage that central ministry budgets contribute directly to urban expenditures is decreasing, from 70% in 1984/85 to 30% in 1990/91. For local governments, this implies a heavier reliance on own-source revenues and discretionary grants to cover the gap in funding.

- The Government demonstrated its commitment to achieving fiscal decentralization by the recent decision to rebate 100% of the local property tax collected back to local governments.

- Two laws have been drafted to rationalize systems for collecting taxes and user charges at the local government levels. These changes should enable local governments to increase revenue sources and manage local urban financing more efficiently. Staff will be able to focus on other revenue generating activities, rather than, for example, tracking down "nuisance" taxes or unproductive levies.

- Local water enterprises (PDAMs) were established to provide services that are self-financing and self sustaining. The Ministry of Home Affairs is currently revising cost recovery and revenue collection regulations for services like water, solid waste, and wastewater. Revised accounting practices will allow PDAMs to conduct better cost accounting and collect more reliable financial information.

- A variety of reforms have helped local own-source revenues to increase by more than 9% per annum over the past ten years. Other reforms currently being implemented, such as adopting an accrual, activity-based accounting system, will also improve accountability. Fiscal decentralization can contribute to more efficient provision of local services because determining

expenditures at the local level will result in a better match of expenditures with needs and local conditions.

- The Regional Development Account (RDA) was established in 1991 as a financial intermediary that would loan funds to local governments and enterprises for improvements to facilities that provide cost-recoverable public infrastructure services. RDA is designed to eventually borrow money from private capital markets and on-lend to local governments, providing a bridge to more private participation in local provision of urban environmental infrastructure.

- Key Government ministries have approved the sale of municipal bonds by local governments for the purpose of improving local infrastructure facilities. These bonds would be limited obligations of the local governments, and would not carry central government guarantees. Bonds would allow local governments direct access to private capital markets to finance infrastructure improvements.

Land Registration

One of the most important issues affecting households is the access to means for legally securing land tenure. Every Five-Year Development Plan since Repelita II has included the policy goal of creating a National Urban Land Policy. While many laws exist regulating land acquisition, a fully comprehensive approach is still being formulated. Questions regarding land control, planning, speculation, pricing and ownership rights continue to be addressed by decree. Repelita V (1989-94) included policy goals for developing methods to use land according to proposed plans and to develop a land information system that enables the issuance of land ownership certificates for purposes of management, taxation, as well as the resolution or avoidance of land disputes.

Regulations on land tenure and registration have their foundation in a 1960 Agrarian Law. In 1972, the Ministry of Home Affairs enacted a regulation that transferred authority regarding land rights and certificates to governors and mayors. Regulations for implementing and enforcing the law of eminent domain were established in 1973. Mechanisms for the transfer of land rights to private enterprises, designed to curb land speculation, were established in 1974 by Ministry of Home Affairs regulation. In 1977, compulsory registration efforts administered by the central government were begun, and augmented in 1980. In 1980 it was estimated that only about one-third of the land was covered by registration certificates, but that percentage is assumed to have increased significantly by the mid-1990s.

Land titling, acquisition and compensation were first addressed in comprehensive fashion during Repelita II. Regulatory changed included the following:

The tying of taxation rates, registration fees, and administration costs to land value;

Authorization of a government appointed committee to set compensation rates for negotiations between land owners and the government for land acquisition for development purposes--this regulation also states that owners must have the proper status in order to receive compensation;

A new regulation that further addressed land acquisition by private enterprises; it addressed development projects intended for the public interest, authorizing Governors to determine whether a project constitutes a public interest.

The Land Administration Program was also established during Repelita II; it now operates under the National Land Agency (described below). Its mandate is to simplify land provision laws and regulations for development goals and expanded land inventory. It is also responsible for designing policy and administrative procedures regarding land matters, such as tenure, land use, land price manipulation and speculation.

To improve land registration procedures and expand national land ownership records by providing land certificates, the Minister of Home Affairs established a National Land Program (PRONA) in 1981. The program aimed to include participation of poor people who had not received certification under prior efforts because of the high costs involved. Many households had opted not to obtain formal title to their land, thereby failing to realize the land's full value when it was sold. Due to funding constraints, however, this program was discontinued in 1988. At that time, the National Land Agency (BPN) was created. BPN is responsible for all land except forest land, and reports directly to the President. It is responsible for certifying land ownership and it maps and registers all parcels. Under Repelita V (1989-94), a new program was initiated for the Land Rights and Certification of low income groups; the program also supports activities such as land use permits for building construction, land and building tax assessment and urban planning. In 1992, the Spatial Management Law was passed, authorizing strengthened land planning and development controls. In 1993, a Spatial Development Management Board was established.

Title to land in Indonesia can, as a matter of law, derive from either "adat" (traditional) or statutory authority. Traditional titles are perpetual and complete, and analogous to the fee simple title of Anglo-American law. However, adat law is mostly

unwritten and titles based upon it are correspondingly uncertain. Statutory primary titles include, among others, the following:

Perpetual right to use and develop land
Right to build on land
Right use and occupy land
Perpetual ownership of land (similar to fee-simple titling)
Right to cultivate land

In addition, there is an array of secondary rights, which include, for example, granting 3-6 year temporary land title certificates to Kampung households whose prior rights were doubtful.

Urban Environmental Regulation

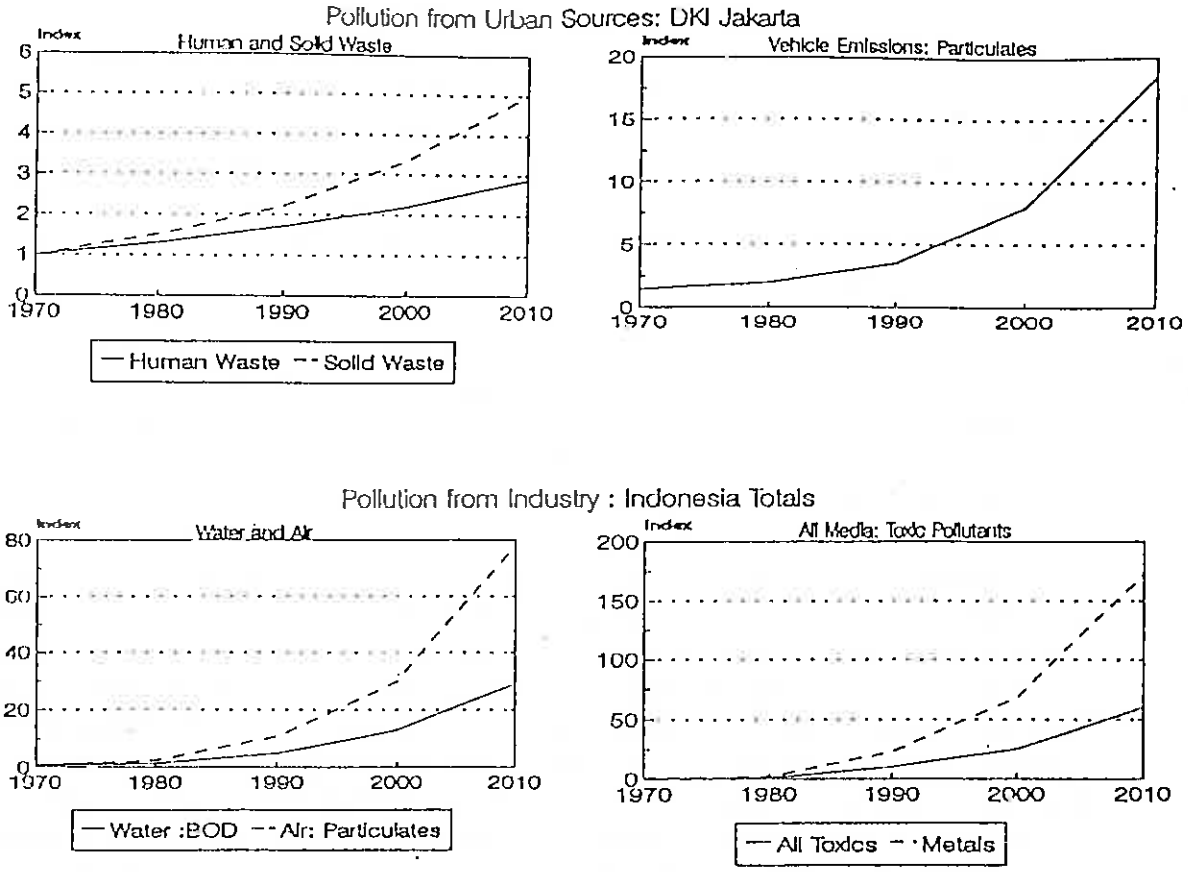
The natural environment in urban areas greatly determines the quality of life for residents. In the urban environment, the Government struggles to control pollution produced from both household and industrial sources; these two major sources of pollution are expected to expand substantially as rapid urban growth continues. In 1983, Indonesia established the Ministry of Population and Environment (KLH) to develop national policy on environmental issues.

The impact of urbanization on the environment has been more fully described in an accompanying assessment, also prepared as part of Indonesia's National Report for Habitat II. Briefly, the environmental problems of water contamination and air pollution in urban areas cause serious health risks and economic costs. For example, a large proportion of Jakarta's shallow wells--the dominant form of residential water supply--is found to be contaminated with human waste; tap water and hydrant samples also reveal contamination, although at a much lower level. Polluted wastewater not only contaminates the surface water in Indonesia's urban areas, it raises the cost and often defeats the purpose of providing municipal water as well. Water-borne diseases are a continuing problem for the country.

Indonesians living in the largest cities also suffer from increasing problems related to air pollution, with vehicle emissions accountable for the largest source of emissions. Emissions are likely to be the fastest growing source as well. Particulates, lead, and other airborne pollutants have reached levels that threaten human health in Jakarta. The other leading source of air pollution, industrial discharge, is becoming an increasing serious problem in many areas, and is expected to increase considerably. As in urban areas around the world, poor people suffer disproportionately from the problems associated with pollution. (See FIGURE 4: Environmental Challenges: Urban and Industrial Pollution.)

In 1986, Indonesia developed an environmental assessment procedure (AMDALs) for reviewing new investment proposals. Completion of this process is

FIGURE 4
Environmental Challenges: Urban and Industrial Pollution



Source: World Bank Staff Estimates

prerequisite for granting the necessary licenses and location permits for project activity. Potentially, the assessment process may require an industrial applicant prepare an Environmental Management Plan and an Environmental Monitoring Plan if an evaluation shows that serious impacts can occur. This process, however, has experienced some shortcomings in relating environmental assessments with development decisions. To address some of these problems, the Government made revisions in 1993, in order to strengthen and streamline the process. Changes included the elimination of preliminary information documents, a simplification of the screening process, reduced time limits for decision making by the AMDAL commissions, and strengthened relationships between the AMDAL process and the process of granting permits for business operations. In addition, three important new types of AMDAL processes were introduced, including AMDAL Kawasan, for industrial estates and other special zones, AMDAL Regional, for assessment of regional development or spatial planning areas, and AMDAL Kegiatan Terpadu, for multisectoral projects.

In 1990, the Government established a new national agency for environmental pollution control in order to develop procedures to implement environmental protection regulations. Known as the Environmental Impact Management Agency, or BAPEDAL, the new agency has a mandate to control pollution and maintain oversight of the AMDAL process.

BAPEDAL was modeled after the U.S. Environmental Protection Agency and was intended to have similar regulatory enforcement powers as those established in the U.S. BAPEDAL is chaired by the Minister for Population and Environment. Two deputies with key environmental roles include: the Deputy for Pollution control Program Development, who deals with water and land pollution, marine and air pollution, and hazardous waste management; and the Deputy for Development, who deals with AMDAL, Licensing/Enforcement, and Reference Lab/Information Systems. In 1994 a new deputy was added to address institutional development needs, particularly to help develop BAPEDAL functions at the regional level. BAPEDAL is accountable to the President directly for policy formulation for pollution control; management of disposal of hazardous waste; monitoring and control of activities in environmental impact analysis, laboratory analysis, and community participation; and enforcement of environmental standards. BAPEDAL also has the authority to sue companies violating environmental standards

Among other accomplishments, BAPEDAL has adopted industrial effluent standards for selected industries. Emission standards for the most seriously polluting industries were recently tightened, controlling the emission levels of ammonia, chlorine gas, chloride hydrogen, particles, sulfur dioxide, black lead and others. The idea of legal enforcement is relatively new and the mechanisms are still being developed and tested. BAPEDAL is the first such agency having enforcement authority for environmental concerns. Other agencies can collect data, conduct monitoring, prepare policy suggestions, etc., all of which go to either governors or

MLH for consideration. Under this arrangement, however, only the governor had powers to enact some type of sanction (primarily referred to as administrative sanctions). The roles and responsibilities of BAPEDAL are still evolving.

The Government of Indonesia has undertaken several special activities to improve the environmental conditions of the country, particularly in urban areas. These programs include ADIPURA (1986), the Clean Cities Program, which rewards cities that achieve outstanding levels of cleanliness, and PROKASIH (1989), the Clean River initiative, under which a number of rivers have been targeted for clean-up; several of these rivers cross urban areas.

EVOLVING NATIONAL POLICIES & PLANS FOR SHELTER & INFRASTRUCTURE

Overview

Housing. Indonesia's housing policy foundations lie in the principles established by the Guidelines of State Policy (GBHN), which describes the government view that housing is a community and individual responsibility. While Indonesia's housing and human settlement development programs and policies take into account the developments in the institutional shelter delivery system, the changing shelter needs, and population growth, these programs cannot finance homes for all people via the public budget. To meet Indonesia's long-term objective announced by the National Housing Board in 1990--shelter for all Indonesians by 2001--the Government has tried to encourage alternative financing by providing a supportive environment for the housing market, and through programs such as cross-subsidization schemes. In other words, the Government has offered programs that provide incentives for private investors to invest in housing for low and medium level income groups.

Infrastructure. The various stages of the Government's policy approach to infrastructure development can be classified in terms of "generations" of an integrated project approach.[4] Beginning with the first Five-Year Development Plan (Repelita I, from 1969-74), the Government has developed five generations of policy toward urban infrastructure planning, preparation, and management. Recognizing in the late 1960s the problems that sectoral approaches can create when infrastructure projects are isolated from each other and when physical requirements are considered separately from financing, the Government began to try a more comprehensive approach to urban environment needs. The "first generation" approach, during the early 1970s, provided support for several services in Kampungs (low income, traditional neighborhoods), placing emphasis on improvements at the micro level. By the "fifth generation" (beginning 1989/90), Indonesia had formalized the coordination of several ministries involved in financing, planning and public works; implemented a nationwide agenda for integrated service planning; and institutionalized implementation of a Policy Action Plan for the urban sector. These changes permit greater quality and scale in the provision of the urban infrastructure and services that create healthy urban environments.

The section below summarizes the history of Indonesia's efforts in establishing housing and urban infrastructure policies focused on improving the quality of shelter in urban areas.

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[4]Suselo, et al., 1995

Repelita I (1969-1974)

Housing. During Repelita I (1969-1974), a National Workshop on Housing was held to begin the discussion of solving housing problems in the country. Repelita I expressed the Government's effort to stimulate private and community participation in housing development, which primarily meant encouraging the informal housing supply system and conducting research to establish a technical base for massive housing construction. These activities were conducted as preparation for the Housing Development Program, described more fully in the section below, which provides historical summaries of specific programs.

Infrastructure. Prior to 1974, the Government handled the administration of urban infrastructure finance through the central government system of sectoral financing--project by project. Development policies focused on the agricultural sector as the supplier of industrial raw materials and food production.

During this First Five-Year Development Plan, Jakarta initiated the Kampung Improvement Program (KIP), providing low-income communities new walkways and roads, clean water supplies, communal latrines and washing facilities, and other community facilities (see the "Program" section below, which provides additional details on KIP).

Available funds for infrastructure provision were concentrated on the rehabilitation of the old infrastructure base in a few cities, including rehabilitation of clean water facilities. Policy goals under Repelita I included stimulating private participation in housing development through bank loans, providing basic necessities like water and sanitation in housing development areas, as well as standardizing building materials and equipment.

Other activities occurring during this period were the initiation of the Urban and Regional Planning Program and the establishment of physical planning units (P2R).

Repelita II (1974-1979)

Housing. Repelita II attempted to (1) facilitate housing construction at a rate that would match population growth; (2) provide guidance and assistance to communities to maximize their role in local development; (3) focus on low income groups, including the improvement of urban living conditions in low-income areas; and (4) address the problems of land availability and provisions for housing development.

Repelita II also developed a number of new institutions, including: the National Housing Policy Board (1974), the National Urban Development Corporation (Perumnas), and the Home Ownership Loan Program (KPR -- 1974) of the Bank

Tabungan Negara (BTN), the State Savings Bank appointed to act as a mortgage bank. It was under Repelita II that the Investment Coordination Board (BKPM) decreed that public and private developers must adhere to a formula stipulating that, for every unit of high income luxury housing produced, three units of middle income housing and six units of low income housing must also be produced. This became known as the 1:3:6 formula (however, this decree was not fully enforced until 1992). Other "set aside" programs require developers to volunteer a portion of land development for public and social facilities, such as parks, schools, and places of worship.

Infrastructure. The "second generation" of housing and urban infrastructure policy evolved during the late 1970s and early 1980s, when the Government stepped up efforts from a micro level approach to a citywide approach or an "urban project approach," operating through a series of pilot programs. During this period, keys central ministries involved in urban development policy began informal cooperation and dialogue regarding the interrelated issues of urban needs. These ministries included the National Development Planning Agency, the Ministry of Public Works, the Ministry of Home Affairs, and the Ministry of Finance.

In this time period, during which the first UN Conference on Human Settlements took place, Indonesia began taking a broader approach to urban infrastructure. Projects undertaken by the Government began to apply a more integrated approach to the entire urban area. Infrastructure activities were planned in terms both of the physical coordination of activities as well as of the management of financial resources channeled from several sources. Local governments began to assume more of the costs of urban projects.

The overarching goal of Repelita II was to alleviate pressures of urbanization in the larger cities and to spread development more evenly. Specific policies initiated in urban development aimed at: achieving a balance between urban areas and their regions; developing a network of new growth centers; raising the quality and quantity of urban public services; improving the capacity of municipal administrations; stimulating urban economic activity to increase employment, and formulating a National Urban Land Policy.

The Urban and Regional Planning Program, and the Housing Development Program began under Repelita I were continued during Repelita II. Several new programs were also launched, relating to: land use development, land administration, regional and local research, housing and kampung improvement, and water supply and sanitation. The Program on Regional and Local Research continued through each subsequent Repelita.

A series of regulations regarding land was also passed during this Repelita period. They related to land sales, land acquisition for government development, and land acquisition for private development.

Repelita III (1979-1984)

Housing. Under Repelita III the basic goals of the two prior Repelitas were continued, and the Government also added the expansion of the KIP program to medium and small sized cities. The Government further promoted more efficient urban land use through high-rise residential apartments for low income residents and attempted to improve the capabilities of housing contractors and consultants through training courses. It was during this period that Indonesia officially began integrating housing policy with other urban sectors. To strengthen the coordination of housing development efforts, the Office of the Junior Minister for Housing within the Ministry of Public Works was established.

Other measures proposed under Repelita III indicated a more interventionist Government role in housing. For example, housing policy stated that the Government should seek to control housing production and finance for all income levels, excluding the highest income group. Furthermore, the housing market should be approached with a view to various income levels of consumers, and different government programs should be developed for all these levels, except the wealthiest (top 2%). On the other hand, to further stimulate private involvement in housing, licensing procedures for land use were simplified. Results of programs undertaken during this time period included the construction of over 103,000 low-cost urban homes, accompanied by an increase of 36,000 liters of water supplied. Further, 5,000 villages received assistance for housing improvements under the Housing Rejuvenation Pilot Project. During this time period, KIP was expanded to reach 200 cities and towns.

Infrastructure. The "second generation" of urban infrastructure policy continued through Repelita III. Prior to the mid-1980s, a top-down system of planning, financing, and managing urban infrastructure prevailed. Local governments were being introduced to the realities of assuming more of the basic responsibilities of urban service. The provincial governments were being asked to modify their roles in government to become more of an active mediating role between central and local governments. They were viewed as critical in ensuring that central government regulations and policies were carried out at the local level, and they were asked to provide information from local governments to central ministries regarding the needs and conditions at the local level.

To support these new roles for local officials, the Ministry of Home Affairs established training centers for local level planning (Bappeda) officials. In 1980, Presidential Decree No. 27 established Bappeda planning boards at the district level (Level II) to assist mayors and regents. The Ministry of Home Affairs also gave guidelines to local governments on the formulation of Regional Five-Year Development Plans (known as Repelitadas).

Implementation of urban services programs, which had started during earlier Repelitas in larger cities, was extended to smaller cities and towns. Standards for "basic needs" were adopted to provide urban residents with water, sanitation, waste removal, roads and pedestrian access, drainage and flood protection, primary health clinics, and education facilities.

The National Urban Development Strategy (NUDS) project incorporated this "basic needs" approach. NUDS was initiated in 1981 by the Indonesian Ministry of Public Works, Directorate general of Human Settlements (Cipta Karya). The United Nations Center for Human Settlements helped fund this project. It was the first systematic effort at formulating comprehensive urban development policies and strategies. Although never formally adopted, the document represents two year's worth of effort in research and dialogue amongst government actors regarding the nation's urban future. NUDS advocated, among other policies, curbing the growth rates of the largest cities and reducing incentives for businesses and industry to locate in these cities. It recommended creating coordinating structures for interdepartmental policy making, and institutionalized provision of services.

Urban development policy promoted under this Repelita included: developing urban areas as provincial growth poles; designing and implementing urban development programs so that they assisted development of nearby villages and smaller cities; developing mid-size and small cities in order to increase employment opportunities in them, and subsequently discouraging migration to large cities; fostering more efficient use of urban land; improving consultant and contractor capabilities; expanding urban infrastructure and services; improving the skill level of city government officials; developing the National Urban Land Policy to address problems of urban land shortages and preserving land for development.

Additional programs implemented during this period included: the Housing and Environmental Research Program; the Program to Improve Government Efficiency, and the establishment of a National Land Program in 1981.

Repelita IV (1984-1989)

Housing. Under Repelita IV, housing policy goals were expanded and given new prominence in national policy. Repelita IV declared that housing development should occur as part of a comprehensive, guided system; that it should be sensitive to environmental concerns, and that the prices of some decent housing be affordable to people in low income groups.

Institutionally, the major change occurring during this Repelita was the upgrading of the status of the Junior Minister for Housing. He became the State Minister for Public Housing. This Minister is charged with making national shelter policy and coordinating housing programs of government institutions, private sector

developers and communities involved in the shelter sector. The State Minister also chairs the National Housing Policy Board (BKPN).

A cross-subsidy policy was developed for construction of housing for lower income groups. Furthermore, housing development policies were to be integrated with other urban sector development policies. During this time, around 320,000 low cost housing units were built and water supply capacity reached 51,000 liters per second. More than 82,500 homes in nearly 8,000 villages were improved.

Policy goals included improved quality of building materials and construction through research and the provision of training programs for industry workers. Land supply and acquisition became a major issue in the consideration of housing supply. In this regard, policy makers were concerned with both the spatial planning aspects of developing land, as well as the increasing level of prices.

In the International Year of Shelter for the Homeless (1987), an International Seminar on Shelter as Engine for Economic Growth and Development was convened in Jakarta. This gathering emphasized the role of the private sector and the partnership it forges with Government in the field of housing and human settlements.

Infrastructure. During the "third generation" of infrastructure policy (from 1984-87) the Government shifted from a project approach to a program approach by formulating policy aimed at applying an integrated approach to infrastructure across the country. This period saw accelerated efforts to decentralize decision-making to local government authorities, and completion of the first National Urban Development Strategy documents. In the provinces, the Government invested in developing the institutional capacity of local (Level II) governments, as well as in technical assistance at central, provincial, and local agencies.

Institutional coordination began to formalize during the third generation. The Ministry of Finance established the Institute for Urban Policy Analysis, which sponsored two national workshops on the economic aspects of urban land policy.

In the early 1980s, the Government undertook a great deal of preparatory work with assistance from UNDP and UNCHS to formulate its National Urbanization Strategy and to begin focusing on the central government's capacity to coordinate all aspects of infrastructure programs. This effort, which aimed to integrate physical, institutional, and financial development, originated within the offices of the Directorate General of Human Settlements, Ministry of Public Works. Local and central government agencies worked with UNDP/UNCHS to develop new approaches to program planning and implementation of urban infrastructure investments. International donors provided financial resources to bring the programs into reality. Part of these initial activities also involved the Ministry of Public Work's focus on providing training, communications, and information dissemination to all levels of government--local, provincial, and central. Integrating

development components also involved incorporating the KIP as a component that required stronger linkages with city wide issues. In 1985, Indonesia officially established the Integrated Urban Infrastructure Development Program (IUIDP) as the process through which physical infrastructure planning and project implementation should occur.

Implementation of IUIDP actually began in 1989/90. While it is not focused on housing, the IUIDP sought to improve housing quality through infrastructure upgrading and by improving the technical capabilities of local governments. Urban infrastructure packages included Medium-Term Investment programs, a Revenue Improvement Action Plan, and a Local Institutional Development Action Plan. In 1990, a four-year project began, which supported implementation of IUIDP activities and assisted in the local level planning and management of IUIDP work.

The significant features of policies promoted under IUIDP are[5]:

- Less reliance on the central government for planning and delivering urban infrastructure and services.
- Improving local government capability for revenue generation; providing greater access to funds from loans.
- Strengthening local government's manpower and institutional capabilities for planning and managing the delivery and development of urban infrastructure more cost effectively.
- Integrating physical planning with institutional and financial development plans.

The sub-sectors addressed by the IUIDP approach are:

- water supply
- human and solid waste management
- urban roads and drainage systems
- market and neighborhood infrastructure

As intended, IUIDP is slowly evolving to become IUDP -- Integrated Urban Development Program, by adding sectors such as housing, transportation, planning, traffic management, and land management.

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[5]Suselo, et al., 1995

During the "fourth generation" of urban infrastructure development, 1987-1989, the Institute for Urban Policy Analysis established in the Ministry of Finance was replaced by the Coordination Team for Urban Development (TKPP), and leadership for the team shifted to Bappenas. Working groups eventually formed to address urban policy, urban programs, municipal finance, and urban institutional development. In 1990, another group--the IUIDP Management Group (IMG)--was formed to take over the working groups, while TKPP continues to have responsibility for policy issues. Since 1990, TKPP membership has expanded to also include senior level officials from the Ministry of Communications, the National Land Agency, the Ministry of Population and Environment, in addition to the Ministry of Finance, the National Development Planning Board, the Ministry of Home Affairs, and the Ministry of Public Works.

Another coordinating team (TKTN) was established to grapple with national spatial planning and development, and to guide environmental preservation by integrating environmental management with development management, and spatial planning with land use planning.

The Government also committed itself to a Policy Action Plan in the urban sector. Donors began to provide "Urban Sector Loans," which were funds that the Government directed toward its urban program, not funds disbursed on a project-by-project basis. Also, the Government worked with USAID to establish a Housing Guarantee Loan (HGL) program, tied to Policy Action Plan.

In addition to the bold policy goal of integrating housing development policies with urban, population, land use, and financial policies, Repelita IV formulated policies to: formulate urban spatial planning guidelines; optimize land use in high density areas of cities; continue clean water programs with the aim of providing 60 liters daily per urban resident; and establish a National Urban Land Use Policy. It also continued the goal of stemming urbanization trends by establishing new growth centers.

Estimates of Indonesia's investment in urban areas indicate an increase from 1984/85 of Rp 2.2 trillion to approximately Rp 3.3 million in 1989/89.

Repelita V (1989-1994)

Housing. Repelita V further expanded the basic goal of stimulating private and community participation in housing, and it also addressed the issue of passing additional housing and settlement responsibilities down to lower levels of government. One objective of this initiative was to reduce duplication and to identify policies that were working at cross purposes. It assumed that duplication and conflict is most identifiable at the implementation stage.

Repelita V presented a series of goals aimed at building effective housing and housing finance delivery systems, as well as the legal and institutional framework to support long term housing development programs. These goals included:

Low Cost Housing Construction. Policy advocated community initiatives in supplying low cost housing and intended these programs to become self-supporting.

Kampung Improvement. Repelita V focused on improving kampung areas in large and medium sized cities. Community participation groups were to assist in the planning and implementation process.

Town Rejuvenation and Development. Priority for this policy goal focused on slum areas where KIP cannot be implemented. Land and infrastructure were to be provided for development. Communities were to fund these projects or seek outside private funding independently; government planned the support of high-rise apartment construction only in exceptional cases.

Building Arrangement. This policy aimed at government establishment of guidelines for building arrangement and safety, including more integration between central and local government policy regarding building arrangement.

These programs resulted in the construction of over 330,000 low cost homes, and the achievement of a total water capacity of 66,000 liters per second. KIP activities reached 15 million people during this time period.

Repelita V also called for the development of new laws and regulations to promote the construction industry, strengthen existing housing finance institutions, and create a legal framework that would more effectively protect property rights.

Also during Repelita V, the State Minister for Public Housing assigned Perumnas to build high rise rental housing. Perumnas was additionally assigned to manage high rise dwellings built as slum renewal projects by the private sector. In 1991, the Housing Minister initiated a "very simple house" policy aimed at low income groups (i.e., about the 50th percentile in the urban income distribution) and included funds for basic infrastructure. The simple housing units measure between 12 and 18 square meters. Home owners receive a special title that provides them the right to use the site for a 20 to 30 year period, with an extension option for another 20 years.

Repelita V established these urban housing targets:

- improve 30,000 hectares of kampung in 500 cities;
- undertake urban renewal projects in 140 cities;

- build 300,000 owner-occupied housing units (100,000 Perumnas-built and 200,000 private-built);

- create 50,000 low-income sites and services housing parcels;

- build 20,000 low-cost rental units using private sector funds under the set-aside (1:3:6) program.

In 1990, the National Housing Policy Board produced and approved a comprehensive National Housing Policy and Strategy that outlines basic policy goals and prioritizes the importance of these goals. It is a product of policy dialogue among the 24 member agencies of the Board. The document articulates Indonesia's long term housing policy objectives:

- creation of healthy, safe and conveniently located homes for all Indonesian families;

- development of communities that spawn economic activity and employment opportunities;

- decentralization and rationalization of land use controls;

- adoption of infrastructure and housing standards that meet the needs of different income groups;

- creation of an efficient property market with appropriate legal safeguards for property owners;

- development of an efficient housing finance system devoid of public subsidies.

Infrastructure. The program approach matured during the "fifth generation" of urban service improvement activity. The Repelita V document stresses urban development that integrates cities internally, as well as with their surrounding villages, viewing urban areas as a strategic factor in regional development. Donors were asked to appraise loan packages for the sector, rather than loans for each individual project or city. Local governments (Level II) began preparing investment, revenue, and institutional development plans during this time period.

All of the programs operating during Repelita IV were continued through the Repelita V period. Urban development was to focus on: creating employment; land use planning and management; land ownership registration; the provision and maintenance of infrastructure; and improved funding systems institutional capabilities for regional governments.

One of the key areas of Repelita V was a focus on the expansion of land use planning activities. In 1989, only 249 of the 816 cities of Indonesia had land use plans. One goal for this period was to expand the use to other cities.

In 1991, KLH submitted a Spatial Planning Law that incorporated the spatial planning laws issued by the Ministries of Public Works and Home Affairs. KLH worked with a technical committee with members from the Ministry of Home Affairs, the National Development Planning Board, the Ministry of Public Works, and university members. This law provides a legislative umbrella for the organization of space at various levels, fills gaps in spatial planning where current guidelines prove inadequate, provides clarification of regulations that currently stand in conflict or are inconsistent with one another, guides development of sectoral programs so that they are in accordance with spatial plans and integrate local, provincial, and national plans.

In the human settlements subsectors of water supply, human and solid waste management, drainage, market and neighborhood infrastructure improvement, investments proposed under Repelita V totaled approximately Rp 1.9 trillion.

Environment. In 1986, Regulation 29 provided implementation guidelines for Indonesia's environmental assessment process (AMDAL); and since 1987 each province was required to set up AMDAL commissions to review project assessments. However, it was not until 1990 that the process was brought under some control with the establishment of BAPEDAL, an environmental protection agency created as an operational arm of KLH, charged with enforcing environmental standards and regulations, and responsible for overseeing the AMDAL process. AMDAL regulations were later revised in 1993, a new State Minister for the Environment (MLH) was established in 1993, and changes were made in BAPEDAL's structure in 1994, but the appearance of BAPEDAL in 1990 was a turning point in the nation's efforts to tie environmental protection to shelter sector development.

AN OVERVIEW OF SELECTED GOVERNMENT PROGRAMS RELATED TO SHELTER AND INFRASTRUCTURE

Below are brief histories of significant programs Indonesia has implemented to realize the goals of a healthy urban environment and improved shelter for its people.

Social Rehabilitation of Poor Areas (RSDK) is a special program implemented by the Ministry of Social Affairs, as part of activities undertaken in connection with the annual observance of National Social Solidarity Day (HKSN). Using a combination of support from the private sector, community groups, and local governments, the program has been active in slum areas in all 27 provinces. Beginning in 1991, the program has supplied social services for disadvantaged groups (including orphans and the elderly), and has built and rehabilitated physical facilities such as foot paths, roads, bridges, public toilets, and water supply systems. Over 3.3 million residents have been affected by the program.

The Urban and Regional Planning program is an umbrella program for several related urban and regional development activities that began in Repelita I and continue on through Repelita VI. This program provides guidelines for the development of urban master plans, urban spatial plans, and regional plans, as well as the implementation of those plans. In the preparation of urban plans, the Ministry of Public Works operates as a technical ministry and advises on the technical aspects of plans.

Physical Planning Units were established in each provincial capital by the conclusion of Repelita III (1984). These units help local government officials with city and regional planning activities, provide technical assistance to local level governments, and channel financial resources for the preparation of plans.

Housing Development Program. Preparation for this program began during Repelita I when the government began research on the quality of construction work and materials. This program also included construction of just over 1,000 pilot, low-cost housing units. Officially, the program began during Repelita II and continues today. It consists of an urban housing program that develops new housing, improves existing housing, and involves housing and urban renewal activities. It also supports a rural housing program that includes housing, an environment program, and a rural growth centers program. The State Ministry of Housing holds responsibility for coordinating the various components of the program, operating under agencies in several ministries.

Urban Renewal Program. Initiated under Repelita III, this ongoing program provides funding for apartments under a cross-subsidy program, while encouraging the community to play an active role in redevelopment activities. The construction and sale or rental of the units built are to be managed by Perumnas (the National Urban Development Corporation). Under Repelita V, a slum renewal component was implemented in order to stimulate more efficient land use and better arranged city areas.

Transmigration Program. Indonesia's transmigration program is the largest voluntary resettlement program in the world. The overall goals of the program have been to promote the balanced development of all geographical regions of the country, as well as strengthen the ability of these regions to produce food. Under the program, households from Java, Bali, and Lombok are moved to the larger outer islands including Sumatra, Irian Jaya, and Kalimantan. The vast majority of households come from, and are destined for, rural areas. This program has had a major impact on reducing village-to-city migration because it helps to move rural residents leading marginal lives to more productive locations. It is estimated that between 1969 and 1991 the program has moved and helped to produce housing for more than 855,000 household units, 35% more than the number produced under the KPR program. The scale of the program has varied. During Repelita I, only 46,000 households were moved under the program. This figure rose to over 400,000 in Repelita III. But then in response to high program costs and international environmental concerns (many transmigrants were being located in or near tropical rain forests) the program was scaled back to approximately 300,000 households in Repelita IV. In Repelita V the numerical goal was reduced to 180,000 households. Typical program benefits per family include a 1.75 hectare plot of farmland, a basic house on a quarter hectare lot of land, farm equipment, technical assistance, and food for up to two years for the family after arrival at the transmigration site.

Kampung Improvement Program. Although the program does not actually provide housing, the objectives of KIP seek to improve housing quality in poor neighborhoods, which have been built primarily through informal sector activities. The program focuses on the provision of physical inputs. Initiated by the city administrations of Jakarta and Surabaya during the Repelita I period (in Jakarta under the M. Husni Thamrin program), KIP was later formalized under Repelita II (1974). In 1979 KIP became a nation-wide program affecting 200 cities. That number has since grown to 500. A variety of KIP programs exist, including some that are financed and managed by community residents. The most widely applied approach to KIP involves funding from contributions by both the central government and municipalities (as well as donor support). It is administered by Cipta Karya (within the Ministry of Public Works), with local governments carrying out administration at the kampung level along with input from local residents. Currently it

operates typically as a component of the IUIDP. The program includes the improvement of water supplies and drainage, footpath upgrading, the development of communal bathing and toilet facilities, health care clinics, waste disposal facilities, and occasionally schools.

KIP attempts to provide the minimum infrastructure requirements of large numbers of urban poor at low cost. It has shown success in its intention of encouraging residents to improve their own dwellings and surrounding area. A 1987 study showed that when neighborhoods received KIP funds, households invested an additional US$220 more than investments made by control groups (comparable, non-KIP areas).[6] For homeowners, the difference was even larger--US$300. It is estimated that every Rp 1 million invested in KIP stimulates another Rp 1.9 million in private expenditures. Additionally, land and house values in KIP neighborhoods have risen significantly faster than those in control neighborhoods. Short term impact studies indicate that the KIP programs that involved greater participation by residents had longer term results, whereas those with less community involvement returned to original or near-original condition after five years. Exemplifying this experience is the city of Surabaya, which received the UNCHS World Habitat Award in 1991.

When it operated in Jakarta during Repelita I, KIP was responsible for improving 2,400 hectares of kampung, where 1.2 million people resided. During Repelita II, implementation of the program in Surabaya resulted in the improvement of an additional 7,000 hectares, affecting 3.5 million residents. Under Repelita III, when the program was expanded to 200 cities, the total hectares affected increased to 17,780, the living area of approximately 5.4 million people. After this surge of expansion, the program was scaled back in the mid-1980s. Still, spatially, the program affected 27,000 hectares under Repelita IV and continued to cover 30,000 hectares under Repelita V. Under Repelitas IV and V, activity was included for improving new outlying kampungs as well as re-KIPing older kampungs to a higher standard. Repelita V aimed to support KIP in 500 cities. Table 6 provides summary details.

Perum Perumnas. The National Urban Development Corporation was established as a state-owned corporation to develop new residential areas, originally receiving direct government subsidies. It was given the power and financial resources to acquire large tracts of urban and suburban land and was directed to complement its housing construction activities with extensive infrastructure improvements (roads, water, electricity, and waste disposal). The homes built were intended to be affordable to "low- and moderate-income households," defined as households with incomes between the 20th and 80th

[6]Taylor, 1994

TABLE 6
Coverage of Kampung Improvement Program:
Repelitas I - V

Time Period		No. of Cities	Hectares Improved	Residents
Repelita I	('69-'74)	1	2,400	1,200,000
Repelita II	('74- '79)	2	7,000	3,500,000
Repelita III	('79- '84)	200	17,780	5,400,000
Repelita IV	('84- '89)	427	27,000	12,000,000
Repelita V*	('89- '94)	500	30,000	7,500,000

* Projected

Source: The Ministry of Public Works

percentile of the national income distribution. That is, the program was not targeted at the lowest income groups. Since Repelita II, 213,492 housing units in 131 cities across Indonesia were built by Perumnas.

Bank Tabungan Negara (BTN) and Home Ownership Loans (KPR). In 1974, BTN became a savings and mortgage loan bank, implementing the national Home Ownership Loan Program (KPR) that offers below market interest rate loans and provides mortgages to the same income group served by Perum Perumnas. All Perumnas homes and those built by approved private developers are eligible for KPR mortgages. The KPR program provides mortgages with 20-year terms and 12-18% interest rates. KPR loans are limited to salaried employees. In the past, preference in granting loans was given to Government employees; this preference was officially dropped in 1986. The KPR and Perumnas' urban housing construction program are Indonesia's largest housing programs. Between 1976 and 1990, approximately 638,000 housing units were financed by the KPR program. Of these, approximately 196,000 were built by Perumnas. On a year to year basis the number of units built has varied tremendously, with fewer than 10,000 units being built annually prior to 1980 and more than 110,000 units being built in 1989. The average number of homes built each year has tended to move upward. An average of 43,000 units was built annually in the first half of the 1980s while 78,000 units were built annually in the second half of the decade. During this period, the share of units being built by the private sector also rose, increasing from about 55% in the early 1980s to 70% in the later part of the decade.

Overall, the total of formal mortgages for urban area housing is estimated to be very small. Data from 1987 indicates that formal mortgages provided financing for only 3% of urban area home purchase. (See TABLE 7: Government Housing Expenditures -- Perumnas and Non-Perumnas.)

PT Papan Sejahtera. This is another state enterprise founded under Repelita III to provide mortgages. Much smaller in scope than the KPR program, the PTPS is aimed at middle income groups, with rates that are not quite as low as those offered through the KPR. It was created in 1980, and as of 1989 PTPS had issued 14,298 mortgages with the average loan being valued at Rp 15.3 million.

The Clean Water Supply Program. This ongoing program began under Repelita I. The regional water enterprises, known as PDAMs, administer the program, with the Ministry of Public Works responsible for technical activities and the Ministry of Health responsible for the quality levels of water. By the end of Repelita I, 15,222 liters/second of clean water were produced. During this time period feasibility studies were carried out in eight cities. The Water Supply program expanded under Repelita II, increasing the number of water

TABLE 7
Government Housing Expenditures -- Perumnas and Non-Perumnas

	Number of Units Built	Total Percent of Year Total	Average Mortgage Value (Million Rp)	Mortgage Value
Perumnas				
1976 to 1979	2,819	29.0%	5,867	2,081,000
1980	6,334	34.1%	10,923	1,725,000
1981	23,338	54.1%	34,285	1,469,000
1982	36,020	56.3%	47,422	1,317,000
1983	17,086	34.1%	27,585	1,614,000
1984	9,214	22.4%	19,252	2,089,000
1985	13,806	27.6%	40,730	2,950,000
1986	30,355	43.2%	84,110	2,771,000
1987	7,928	11.3%	23,400	2,952,000
1988	19,840	22.7%	68,512	3,453,000
1989	22,002	19.4%	88,419	4,019,000
1990*	17,7463	6.4%	75,305	4,244,000
Total/Average	196,208	30.7%	Rp. 481,882	Rp. 2,456,000
Non-Perumnas				
1976 to 1979	6,951	71.0%	16,339	2,351,000
1980	12,223	65.9%	38,183	3,124,000
1981	19,791	45.9%	81,921	4,139,000
1982	27,942	43.7%	135,750	4,858,000
1983	33,002	65.9%	180,681	5,475,000
1984	31,944	77.6%	192,104	6,014,000
1985	36,171	72.4%	264,115	7,302,000
1986	39,920	56.8%	290,796	7,284,000
1987	62,191	88.7%	277,014	4,454,000
1988	67,470	77.3%	327,038	4,847,000
1989	91,639	80.6%	438,297	4,783,000
1990*	30,972	63.6%	144,631	4,670,000
Total/Average	442,155	69.3%	Rp. 2,302,501	Rp. 5,207,000
Combined Total	638,363	100%	Rp. 2,784,383	Rp. 4,361,000

* Annualized on the basis of January to June data.

Source: Biro Pusat Statistik, 1990

supply facilities and repairing existing networks to reach a wider distribution. Distribution systems for kampung areas and Perumnas housing units were expanded and hydrants constructed. Production capacity increased to 20,312 liters/second. Capacity increased to 38,564 liters/second under Repelita III, while distribution increased to 710 big, medium and small size cities. Repelita IV increased the production capacity to 51,000 liters/second, and Repelita V aimed to increase this by another 14,000 liters/second.

The Sanitation Program. This program also began under Repelita I and continues today. The goal of this program is to provide services for the handling of waste water and trash and the provision of drainage systems. Initially, this program focused on capital cities, harbor towns, industrial areas, and tourist resorts. Under Repelita II these activities expanded to include research on sewage and solid waste disposal, as well as to increase services. Financing for water supply and sanitation systems changed under this program from central government grants to providing loans and including local government participation. Studies and surveys were conducted in several cities in preparation for wasted disposal master plans.

During Repelita III, the program focused on high density, low income areas, critical areas, and new settlements. It aimed to develop systems for drainage, garbage disposal, and sewerage. It achieved improvement in solid waste disposal systems in 15 cities, and began sewerage construction in three cities. It also improved waste water drainage systems in 40 towns, drainage systems in 25 towns, and trash systems in 65 towns. During Repelita IV, the sanitation program achieved improvement in waste water drainage systems in 62 towns, drainage systems in 90 towns, and trash collection systems in 198 towns. The government also developed a cross-subsidy system to minimize the costs of infrastructure provision.

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REPUBLIC OF INDONESIA

NATIONAL REPORT FOR

HABITAT II

ANNEX 4

THE ENVIRONMENTAL IMPACT OF URBANIZATION

Final Draft
February 1996

National Committee for Habitat II
Jalan Kebonsirih 31, Jakarta, Indonesia

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ABBREVIATIONS AND ACRONYMS

AMDAL	Environmental Impact Assessment
Adipura	The Clean Cities Program
BAPEDAL	Environmental Impact Management Agency
BAPPENAS	National Development Planning Agency
BOD	biological oxygen demand; represents the biodegradability of the total organic matter dissolved or suspended; organic pollutants can deplete oxygen which adversely impacts on aquatic life.
CO	carbon monoxide
CO_2	carbon dioxide
COD	chemical oxygen demand; the weight of oxygen taken up by organic matter in a water sampling
DKI Jakarta	Jakarta, Special Capital City Region
DO	dissolved oxygen
GEMS	Global Environment Monitoring System
GOI	Government of Indonesia
HC	hydrocarbons
Hg	mercury
Jabotabek	Metropolitan area encompassing Jakarta, Bogor, Tangerang, and Bekasi
JMDP	Jabotabek Metropolitan Development Plan
JUDP	Jabotabek Urban Development Project
KIP	Kampung Improvement Project
KLH	State Minister for Population and Environment (pre-1993 Cabinet change)
LPG	Liquefied Petroleum Gas
MEIP	Metropolitan Environmental Improvement Program
MCM	million cubic meters
MLH	State Minister for Environment (post-1993 Cabinet change)
NGOs	nongovernmental organizations
NH_3	ammonia
NO_x	nitrogen oxides
PDAM	Local Government's Water Enterprise
PPB	parts per billion
Prokasih	Clean River Project
REPELITA	Five-Year Development Plan
Rp	Rupiah, Indonesian currency unit
SO_2	sulphur dioxide
SPM	suspended particulate matter
TSP	total suspended particulates
UNCHS	United Nations Center for Human Settlements
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

Rapid Growth

The environmental impacts of urbanization in Indonesia present enormous challenges for the nation. A rapidly developing nation of over 180 million people, spread across 13,000 islands spanning almost 5,000 kilometers, Indonesia must deal with huge obstacles in simply monitoring environmental changes in the hundreds of urban areas within its boundaries. Influencing the direction of those changes presents even greater difficulties. The Indonesian Government, working with the private sector, as well as NGOs and the academic community, has begun to address these urban environmental challenges in systematic, comprehensive fashion, and in fact is ahead of many developing countries in this regard. However, the speed and magnitude of the nation's tremendous economic growth, combined with related growth in the size and density of urban populations, will insure that simple, short-term solutions to these problems will remain even more illusory than in most of the rest of the developing world.

Economic Growth. Indonesia's economic growth over the past 25 years, particularly when measured in terms of living standards, has been remarkable. Income per capita has risen steadily, poverty has been reduced from 60% to 15% of the population, life expectancy at birth has increased by 20 years, universal primary education has been established, and the adult illiteracy rate has been reduced by two-thirds. Indonesia's improved economic condition has been based primarily on a strategy that emphasizes export-oriented industrial growth, which makes intense use of the nation's vast natural resources, such as oil, natural gas, and timber. This strategy--along with the tremendous growth that it has facilitated--is expected to continue into the foreseeable future.

Rapid Urbanization. Most of this industrial sector growth occurs in Indonesia's major urban centers. During the past two decades, the rapid increase in the manufacturing and related services sectors have helped to push Indonesia's urban growth rate to well over 5% per annum, among the highest in the world. In the 1980s, Indonesia's cities and towns had to accommodate an average of 2.3 million new inhabitants per year, more than twice the 1.1 million average of the 1970s.

Environmental Impacts

Together, increased population densities and the continued rapid expansion of industry create a concentration of pollution from human and commercial activity in urban areas, which threatens to lower the quality of human life and destroy the natural resource base upon which many economic activities depend. Urban environmental degradation is increasingly being recognized as one of the most serious side effects of Indonesia's economic development. The environmental impacts of urbanization are

magnified for three reasons. First, while precise data on the differences remains elusive, it is generally accepted that the amounts of waste generated in cities, per capita, are several times higher than in the countryside. The production of solid waste in urban areas is estimated to grow at twice the rate of population growth; the production of industrial waste in urban areas is now estimate to be growing exponentially. Second, because these residuals of human activity in cities are so spatially concentrated, they are potentially more dangerous to human health than if spread more evenly over the national territory. Third, institutions, technologies, and infrastructure systems available to control these problems are often weak. Indonesia's environmental institutions and processes are developing quickly, but are still largely embryonic and not yet fully able to respond adequately to rates of urban population growth and industrialization that would tax much more sophisticated systems.

Water Pollution. For Indonesia, one of the most severe impacts of urbanization has been the decline in water quality. The priority issues for addressing water pollution from urban sources appear to be water supply and sanitation, solid waste management, as well as energy production and industrial pollution control. Unsafe water is one of the major sources of disease in Indonesia, and the lack of adequate sanitation facilities is a primary cause of contamination of urban water supplies. Water resource management carries a number of implications for the Indonesia's future--especially on Java where 60% of the population lives. Both competing needs for water quantity and the levels of surface and ground water in growing urban areas are sources of growing concern.

Air Pollution. A second, significant impact of urbanization has been the sharp decline in air quality, particularly in large urban areas such as Jakarta. A recent environmental survey of 100 of the world's largest cities by the Population Crisis Committee ranked Jakarta among the most dangerously affected by poor air quality. Experts agree that air quality is lowest in poor areas. The burning of solid wastes is estimated to contribute anywhere from 15-40 percent of the extremely high levels of total suspended particulates and total hydrocarbons in large Indonesian cities. Most of the rest of the wide variety of air pollutants in urban areas are emitted by motor vehicles; growth in the use of autos and other motorized vehicles has recently been projected at over 10 percent per year, with total usage more than doubling between 1990 and 2000. Strategic, innovative interventions to address air quality issues are now under consideration by the Indonesian Government, but the problem--particularly as it related to motor vehicle usage--is widely recognized as one of the most intractable in developing countries.

Land Use. Concern also exists with regard to land use, in and around urban areas. For example, urban sprawl and continued concentration of industrial firms in urban areas cause negative impacts for ecologically sensitive areas. Land acquisition for development purposes raises the further issue of equity when compensation or other arrangements for those affected are considered. Finally, urbanization has environmental impacts well beyond the borders of city areas. As the urban transition

brings 60% of the total population to urban areas by 2010, sources for the inputs required for maintaining increasing quality-of-life standards will have to be found further and further from city centers.

The National Response

To address these emerging issues, the Indonesian Government has initiated various activities to improve the current urban environment and to manage future pollution loads from industry, energy and indoor air pollution. Enhanced public awareness of environmental issues has been a particular target of these efforts. The Government declared 1993 the "Year of the Environment," and along with a series of special awareness campaigns significantly expanded its publication, "The Environmental Statistics of Indonesia," to include a broader range of environmental components, including impacts of human activity on the environment. Indonesia has also long been a leader in establishing and maintaining a legal framework for sustainable development and environmental protection at the national level, supplemented by provincial regulations.

However, senior Government officials have been quick to point out that, despite public awareness campaigns and a comprehensive regulatory framework, there have been difficulties in making environmental sensitivity an ongoing aspect of development and other growth related activities. This has been particularly evident in the area of enforcement of environment regulations. In the last few years, Indonesia's commitment to improve enforcement has been demonstrated by the creation in 1990 of its Environmental Impact Management Agency (BAPEDAL), the operational arm to the Minister of State for Population and the Environment. This agency was required to assist the Government in implementing the Environmental Impact Assessment (AMDAL) process, established in 1986 to regulate commercial and project activities that have potentially serious consequences for the environment. In keeping with Indonesia's commitment to actualize environmental objectives--especially important in urban areas where rapid development occurs--the Government revised the AMDAL process in 1993 to strengthen the authority of BAPEDAL in carrying out its coordinating role, as well as to clarify and speed up the AMDAL process.

The Government of Indonesia recognizes the magnitude of obstacles facing efforts to effectively carry out environmental management in its rapidly growing urban areas. A substantial increase will be required in public and private sector investment. Motivating private sector firms to invest in pollution abatement, and households and individuals to behave in an environmentally responsible manner, will require a carefully balanced mix of policies and instruments and greatly enhanced institutional capacities for urban environmental management and industrial pollution control.

A large variety of environmental initiatives and special activities have helped make Indonesia a leader in the developing world in terms of public attention devoted to environmental issues. Overall, the Government's efforts in these areas have shown steady progress, with a considerable number of milestone achievements.

INTRODUCTION

The purpose of this report is to examine the impact of urban development on the environment and describe projections made concerning future impacts, given current trends. Indonesia does not yet have a system to regularly and reliably monitor changing environmental conditions in its cities. Indeed, this lack of information about actual urban environmental conditions and trends, combined with a lack of understanding of the impact of pollution on ecological systems and human health and welfare, has been a major impediment to decisive action in favor of urban environmental protection in nearly every country in the world. Nevertheless, the Indonesian Government has commissioned and supervised a number of studies that permit at least a general understanding of the nation's urban environmental issues. This report makes use of these studies, other Government information sources, as well as interviews with Indonesian and foreign experts, to assess problems and trends, offer examples of successful urban environmental strategies achieved by the Government, and describe lessons learned from efforts to manage environment quality.

Indonesia is acknowledged as a leader among developing countries in its efforts to create a sustainable development strategy and build the framework needed to support that strategy. These efforts, however, are part of a continuous process to address the nation's environmental challenges. The Government has shown its commitment to this process in a variety of ways. President Soeharto has declared that "We will consolidate, expand and deepen all that is good. We will put in order what has been neglected."[1]

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[1] World Bank, 1994a

OVERVIEW OF URBANIZATION IN INDONESIA

During the 1980s Indonesia experienced the fastest rate of urban growth among East Asian countries. This urban growth, resulting from general population increases as well as economic development centered in urban areas, is the most immediate cause of the tremendous environmental stress in Indonesia's urban areas. The population in urban areas increased at 5.4% per year between the censuses of 1980 and 1990. From 33 million people in 1980, the urban population rose to 55 million by 1990. Migration from rural to urban areas and the urbanization of "rural" towns accounted for two-thirds of the urban growth.

Urban Growth

The 25 largest metropolitan areas--with populations greater than 280,000 persons in 1990--continued to account for some 66 percent of the urban population, but in absolute terms became more dominant. Ten metropolitan areas ended the decade with more than 1 million inhabitants each, led by the Jakarta metropolitan area (known as Jabotabek) with some 13 million, followed by Surabaya and Bandung with 3.5 million and 3.3 million respectively. Two major metropolitan corridors have developed on Java. One extends along the northern coast from Jakarta to Semarang, and continues south to Surakarta and Yogyakarta. Another north-south corridor has formed between Surabaya and Malang. By the early 1990s, these corridors accounted for more than 60% of Java's urban population. Sumatra ranks second among Indonesia's islands in percentage of total urban population--it accounts for more than 17 percent. The urban population is expected to increase by nearly 4% per year until 2000. (See TABLE 1: Urban & Rural Population by Island -- 1990 & 1993.)

Urban growth in Indonesia has pushed forward dramatically over the last three decades despite one of the developing world's most successful national family planning programs. The use of contraceptives among married couples increased from 10% in the 1960s to more than 45% in the 1980s. From 1970 to 1988, mortality rates decreased by nearly one-half, but simultaneously the fertility rate declined even faster--from 41.4 births per thousand to 28.0. Indonesia's population growth rate has fallen from 2.4% per annum in the 1960s, to approximately 1.6% today. Continued progress could result in replacement-level fertility rates before 2010, although zero population growth may not occur until late in the 21st century.

Java

High fertility rates in the past and continued urban migration have resulted in one of the highest population density ratios in the world: of Indonesia's 180 million people, over 60% of the population live on Java alone, creating a density of about 815 people per square kilometer. Population has of course been attracted by job

TABLE 1
Urban and Rural Population by Island
1990 and 1993

Island	Urban (x 1 000)		Rural (x 1 000)		% Urban Population To Total Population	
	1990	1993	1990	1993	1990	1993
1	2	3	4	5	6	7
Sumatera	9,307.1	10,510.5	27,164.6	28,000.0	25.52	27.29
Jawa	38,341.6	42,623.8	69,183.9	68,336.2	35.66	38.41
Kalimantan	2,508.2	2,811.2	6,587.6	6,918.7	27.58	28.89
Sulawesi	2,787.6	3,148.2	9,722.8	5,586.5	22.28	36.04
Kepulauan Lainnya *Other Islands*	2,489.2	2,834.9	11,155.1	11,447.8	18.24	19.85
INDONESIA	55,433.7	61,928.6	123,814.0	120,289.2	30.93	33.99

Source: Biro Pusat Statistik/ Compendium of Environmental Statistics of Indonesia, 1993.

opportunities. Approximately 75% of Indonesia's total industrial output is located on Java, of this, 60% occurs in urban areas. Jakarta, Surabaya and Bandung alone account for 27% of the country's total. Density on Java is expected to increase to 900 people per square kilometer by the end of the decade and possibly exceed 1,100 by the year 2020. Many demographers already consider virtually all of Java to be an "urban area." With the exception of Bali, which has a population density of about 500, the outer islands experience a significantly lower ratio. Sumatra's density is 77, Sulawesi is 65, Kalimantan is 17 and Irian Jaya is 4 people per kilometer.[2] High population density in a given area can offer opportunities for economies of scale in service delivery, but until this goal is reached, densities like Java's create a potential threat to environmental health. For example, studies show a high correlation between river water quality and population density.[3] (See FIGURE 1: Population Growth and the Urban Transition in Java.)

Future Growth

On the basis of experience in other developing countries, Indonesia's recent high rates of urban growth will most likely continue for the next several decades. Currently, approximately 35% of Indonesia's population, about 65 million people, live in urban areas. Projections vary, but many experts believe that by 2010 this percentage is expected to increase to as much as 60%, or about 150 million people. By far, Java will experience the implications of urbanization most severely. In 1990, Java's urban population was 38 million; it may exceed 50 million by the end of this decade and 85 million by 2020. This translates into as many as 1.5 million additional urban residents a year over the next three years. In Jakarta alone, the overall population grew by almost 7% per year between 1980 and 1990. In fringe areas where industrial output was expanding rapidly, population growth rates of over 17% were recorded; this is a similar pattern in most large cities. By 2010, the Jakarta metropolitan area (Jabotabek) may have as many as 35 million people. By 2020, Indonesia could have 35 cities with over one million residents.

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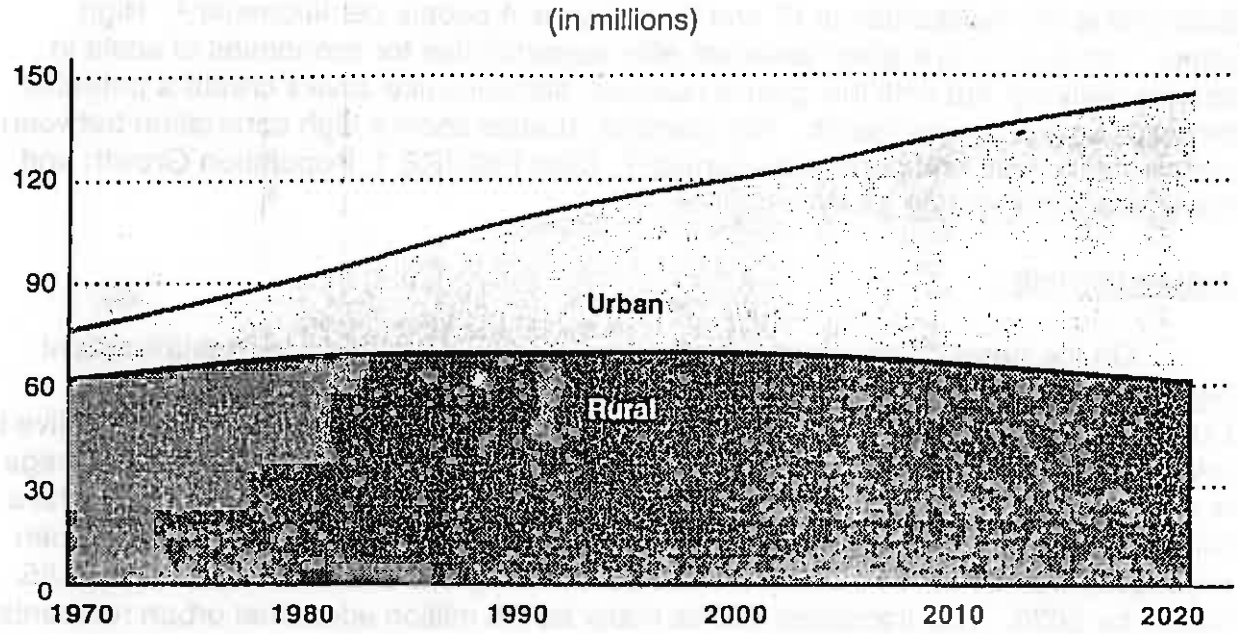
[2] BPS, 1994
[3] JICA, 1991

FIGURE 1
Population Growth and the Urban Transition in Java



Source: Biro Pusat Statistik Census Reports and World Bank Staff References

SOURCES OF URBAN ENVIRONMENTAL DEGRADATION

Households

Overview. Household waste is the principal source of surface water contamination in Indonesia. Human waste ("black water") causes significant levels of fecal coliform contamination of surface water. In addition to human waste, domestic sullage ("gray water", wastewater of kitchens, showers, and laundries) also contributes significantly -- about 50% -- to water pollution. Most cities use an old open ditch system to move domestic waste water; these drains are subject to clogging that can cause subsequent flooding.

For water in Jakarta, domestic sullage creates a pollution load of 152 tons/day of BOD ("biological oxygen demand," a measure of the total organic pollution load). Under current practices, this is expected to increase up to 288 tons/day by the year 2010, by some estimates. Sullage and septage together are estimated to contribute 79% of the waste water in Jakarta, and 73% of the BOD load. This shows an increase in percentage from 1989, when domestic sources were estimated to contribute 39% of total BOD loads.[4] In contrast to domestic waste, commercial activity and industry currently generate about BOD 12% and 15% of the total load, respectively.[5]

Septic Tanks. Lack of adequate sanitation facilities is a primary cause of fecal contamination of urban water supplies. A recent census shows that only about 48% of all Indonesians use private or shared toilet facilities; the remaining percentage use alternatives. In Jakarta, a 1987 survey indicated that nearly 4% of the population defecating directly into rivers and canals. Of residents in Jakarta who use some kind of toilet facilities, only about 1% are served by operating sewer systems.[6] Only 8 other cities in Indonesia have the beginnings of a sewerage system in their downtown areas.[7] More affluent individuals and businesses rely primarily upon septic tanks. Often, however, septic tanks are not emptied regularly and public facilities, housing estates and private toilet owners may dispose waste directly into drains to avoid the costs and inconvenience of desludging.[8] Septic tanks that are defective leach and contaminate groundwater. Even when a household adequately treats its human waste water, sullage continues to drain directly into open drains that flow into the rivers and canals[9]. Also, toilets may not built according to guidelines that specify the types of on-site systems appropriate for local population densities, water intakes, soil permeability, and depths of the ground water table. Since the negative impacts of inadequate septic systems can be shifted to other residents (living "downstream"), individual households

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4 Porter, 1994
5 JICA, 1991
6 Porter, 1994
7 World Bank, 1993
8 Silver, 1990; Sawarto, 1987
9 Porter, 1994

face little incentive to adhere to the guidelines when installing and maintaining their sanitation systems. Monitoring of septic tanks continues to be a challenge for government administrators; the total number of septic tanks is not even known. Financing for sanitation contributes to the difficulties; currently about 3% of urban public expenditure in Indonesia is spent on this concern[10].

Desludging. Some septic tanks are emptied regularly, but desludging services contribute to the poisoning of water by disposing collected human waste directly into rivers and canals, not considering public health hazards. In Jakarta, public and private services collect well over 5,000 cubic meters (m^3) per day of sludge, but treatment facilities receive only 230 m^3 of that. The remainder is disposed of into the city's waterways.[11] The City of Jakarta desludges an average of only 25,000 household tanks per year; while the total number of septic tanks is unknown, this can represent only a small fraction of the total.[12] Citywide septage discharges were estimated at 202,400 m^3 per day in 1989. By 2010, this may increase to 136 tons a day by the year 2010 if present trends continue.[13]

Residential Air Pollution. Households contribute to air pollution primarily through the use of domestic fuels. Biomass fuels (firewood, charcoal, agricultural residues) in open cook stoves emit important pollutants, including particulates, carbon monoxide, hydrocarbons, sulphur dioxide, and nitrogen oxides. In urban areas like Jakarta, use of wood and charcoal is limited to less than 2% of all households now, with the rest using kerosene (83%) and Liquefied Petroleum Gas (LPG) (15%).[14] For all of Indonesia, though, the use of biomass as primary energy supply has been estimated at 45%.[15] To address the problem, improved stoves with cleaner emissions have been introduced, as well as the use of LPG, which is being utilized more and more by lower middle income groups.[16] Most homes are likely to have relatively high ventilation because of the climate, and concentrations of pollutants may not be great. Still, preliminary results from recent measurements of indoor air pollution in Jakarta homes indicate that while most kitchens had ventilation, more than a quarter of homemakers suffered from respiratory disease. There was also some correlation between respiratory disease and factors such as lack of ventilation, dampness in the house, and low socioeconomic status.[17]

Solid Waste

Production and Disposal. Most large Indonesian cities face the challenge of improving an inadequate system for the disposal of increasing amounts of municipal

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[10] Porter, 1994
[11] Biller, 1992
[12] Porter, 1994
[13] JICA,1991
[14] Surjadi, 1993
[15] Kingsley, et al, 1994
[16] Soedomo, 1993
[17] World Bank, 1994a

solid wastes. The primary environmental issues surrounding solid waste disposal are that the burning of waste adds to air pollution, while uncontrolled dump sites lead to leachates that contaminate ground water. Unmanaged accumulation of solid waste dump sites also serve as a breeding ground for disease-carrying pests. Further, rivers and drainage canals become blocked from "informal" disposal, causing flooding and spreading contaminated water into residential areas. Between 15 and 40 percent of all urban solid waste does not get collected, and of that collected, not all of it is disposed of in a safe or legal way. In the case of Jakarta, some portion of the uncollected wastes are burned, another 30% ends up in rivers and canals, and up to 40% lands in "informal" dump sites. Waste disposal problems will be exacerbated by both continued population growth and higher per capita lifestyles that tend to produce more solid waste as incomes increase. In Jakarta, trends indicate that waste generation is growing by 6 percent. Future growth in Surabaya has been estimated at 5 percent a year.[18] (See FIGURE 2: Pollution from Human & Solid Waste: Jakarta.)

The Three Largest Cities. The cities of Jakarta, Surabaya and Bandung all maintain relatively high collection rates of solid wastes. In Jakarta and Surabaya, however, a large proportion of the amount collected is disposed of in an uncontrolled way. Jakarta's City Sanitation Office recently reported that the city discarded 25,404 cubic meters of waste daily, of which 21,085 (around 83%) cubic meters were handled by the City.[19] This has been a stable percentage for several years. Studies estimate that as much as 30% reach rivers and canals.[20] Similarly, waste generation in Surabaya is estimated at 5,100 cubic meters/day, of which 16% of the total collected is disposed of in unidentified places. As much as 15% of the total production fails to be collected at all.[21] Bandung, an urban area with a population of nearly 3.5 million, reports that it disposes about 95% of all waste generated[22]. (See TABLE 2: Garbage Production & Carried Volume in Jakarta and Bandung.)

Environmental Impacts. Improperly disposed of garbage causes a number of social problems, including nuisance and smell. It also impacts the environment by: (1) creating leachates, which contaminate surface and ground water; (2) blocking drains and causing flooding; (3) fostering the proliferation of pests; (4) creating air pollution when garbage is burned, and; (5) affecting human health. Children playing outdoors become exposed to toxic or other hazardous material left by random, unsafe garbage dumping. The mechanics of garbage management are such that various stages of waste handling, transportation, and disposal complicate solving these problems, some of which are described in further detail below.

Leachates. Produced through the contact of solid waste with water, leachates infiltrate surface and ground water causing the most common form of

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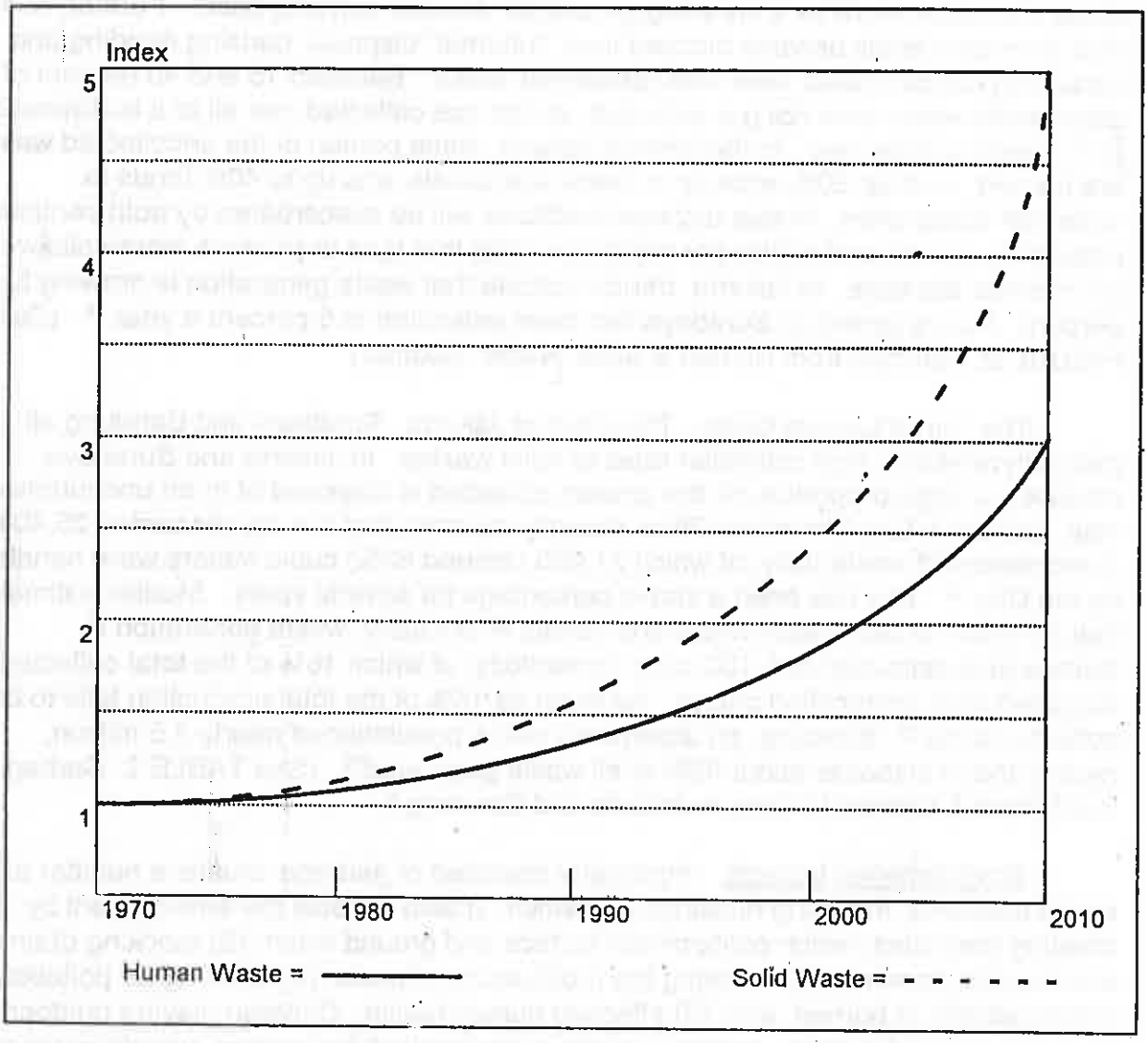
[18] JICA, 1992
[19] Jakarta Post, 11 March 1995, p.3
[20] Binnie & Partners, 1990
[21] JICA, 1992
[22] BPS, 1994

FIGURE 2
Pollution from Human and Solid Waste -- Jakarta



Source: World Bank Staff Estimates

TABLE 2
Garbage Production and Carried Volume in Jakarta and Bandung

(m3)

C I T Y	Year	Estimate of Daily Garbage Product	Volume of Daily Garbage Carried	Percentage of Overcoming
1	2	3	4	5
DKI Jakarta	1986/1987	18,694 r)	16,055	85.88
	1987/1988	20,150	16,452	81.65
	1988/1989	21,234	16,769	78.97
	1989/1990	21,671	17,331	79.97
	1990/1991	21,894	17,874	81.64
	1991/1992	23,706	18,997	80.14
	1992/1993	23,778	19,736	83.00
Kodya Bandung	1986/1987	5,848	3,902	66.72
	1987/1988	5,848	3,913	66.91
	1988/1989	6,496	3,958	60.93
	1989/1990	6,607	4,376	66.23
	1990/1991	6,792	4,959	73.01
	1991/1992	6,852	5,166	75.39
	1992/1993	6,852	6,474	94.48

Source: Biro Pusat Statistik/ Compendium of Environmental Statistics of Indonesia, 1993

contamination. Contamination can occur wherever solid waste is exposed to rainfall or moisture--at household sites, in drains, and in temporary and final disposal sites. For example, studies on one Jakarta river estimate that solid waste contribute to 7 tons of BOD per day (15 percent of the total organic pollution load), 300 kg of phosphate, and 60 kg of ammonia nitrogen.[23] High concentrations of home industries that do not use official means of garbage disposal increase the possibilities of toxic and inorganic waste contamination.

Pests. Accumulated garbage contributes to the proliferation of cockroaches, rats, mosquitoes, and scavenging animals, such as cats and dogs. These pests can carry diseases and lower the quality of residential life. For example, residents of urban kampungs in Surabaya identified mosquitoes, pests and blocked drains as their most serious environmental problems.[24]

Burning Debris. The burning of garbage is a significant source of urban air pollutants, especially hydrocarbons and particulate matter.[25] Urban residents burn refuse to reduce waste, and scavengers burn it to separate out materials that can be recycled. The process of decomposition also generates methane gas that ignites fires at waste disposal sites, contributing to this source of air pollution. BAPEDAL, the Indonesian environmental protection agency prepared an inventory with the following estimates for Suspended Particulate Matter (SPM) and hydrocarbon (HC) emissions attributed to solid waste burning for major cities in 1991:[26]

City		SPM	HC
Jakarta	=	8%	8%
Bandung	=	20%	17%
Surabaya	=	9%	17%
Semarang	=	8%	8%

Drainage. Much of the solid waste generated by lower income households is disposed of into roadside drains and canals. The accumulation of solid waste in the drainage systems of urban areas has exacerbated drainage problems existing from other factors. These factors include erosion in upland watersheds, increasingly built-up urban land, and land subsidence along the coast due to over-extraction of ground water aquifers. All of this contributes to problems of flooding in urban areas. Solid waste alone can be the source of localized flooding, which often brings contaminated drainage water into residential areas. During the rainy season, garbage in waterways contributes to flow stagnation.

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[23] Binnie & Partners, 1990
[24] Collier, et al, 1993
[25] Soedomo, 1993
[26] Kozak, 1992

Industrial Waste

Overview. Industrial pollution tends to concentrate in Indonesia's urban areas, and in those provinces like Java with the highest population densities. As population growth and industrialization in the outer islands continue, Java's share of the total, national output of traditional water and air pollution from industrial sources are expected to decline from 60% to under 45% between 1990 and 2020. In absolute terms, however, Java may see eight-times the current, relatively high levels during that time period. By 2010, pollution loads in urban areas on Java may be more than ten times greater than they are today; the total pollution load in urban areas off-Java will be more than twelve times greater than they are today.

Industrial Growth. Industrial pollution is to some extent an unavoidable result of the Government's success in promoting the private sector as the nation's "engine" of economic growth. Since 1983, this sector has grown at about 7.3% per annum, contributing 72% of total economic growth, and 79% of the growth in non-oil exports. The structural changes in the Indonesian economy have followed the classic development pattern of transition from reliance on agriculture to increasing reliance on industry. Relatively recently, the industrial sector has begun to expand into higher technology products and a wide range of manufactured goods for both the domestic and export markets. Manufacturing contributed 22.3% to the total GDP in 1993. This percentage is expected to increase to more than a 33% contribution by the end of the decade, and nearly 45% in the following decade.[27] Total industrial output is likely to increase by 13-fold by the year 2020, according to World Bank estimates.

This reliance on industrial growth for the creation of higher productivity jobs and non-oil exports will mean a continued expansion of basic processing of commodities, including pulp and paper, food and beverage products, metal working, pharmaceuticals, and chemical and pesticide plants. These industries make intensive use of raw materials, and this adds to the pressure on natural resources and critical ecosystems. Basic processing industries also contribute most of the urban water, air and toxic pollution that is classified as coming from industrial sources.

Processing has expanded by nearly eight times since the early 1970s, and another six fold increase is expected by the year 2010.[28] But assembly-type industries are expected to grow even faster, and they are much less pollution intensive than the processing-type, especially with regard to water pollutants, as well as for many of the traditional air pollutants. With the increase in assembly-type production industries, the pollution intensity of industrial output has declined since the 1970s, and the decline is expected to continue.

Environmental Impacts. With continued industrial growth in Indonesia, pollution loads will likewise continue to increase substantially for nearly all pollutants, although

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[27] World Bank, 1994a
[28] World Bank, 1994a.

rates of increase will peak and level off for some varieties. Estimates suggest that total BOD loads will increase ten-fold by the year 2020, and air pollutants, such as sulphur dioxide and suspended particulates, will increase 13-fold and 15-fold, respectively. Emissions of bio-accumulative metals like lead and mercury are projected to increase by as much as 19-fold. The annual emissions of each of eleven pollutants analyzed as part of a recent World Bank study is expected to be at least ten times greater in 2020 than in 1990, assuming no changes in environment or industrial policies and practices.

Industrial concerns discharge a variety of pollutants into the water and air, as well as in the form of toxic and hazardous waste. Summaries of these impacts are described below:

Surface Water. Surface water supplies approximately two-thirds of water for human use in Indonesia, but virtually all of it must be treated before it can be considered potable. Traditionally surface water contamination has been considered primarily the result of household pollution. However, recent monitoring of the discharge of large industries indicates that industrial pollution constitutes from 25% to 50% of the total pollution load in different rivers in Java. As these percentages indicate, monitoring results vary considerably. In Surabaya, a 1989 survey estimated that industrial effluents accounted for 38 tons per day of BOD in the Brantas River, out of a total load of 120 tons per day.[29] In one of Jakarta's rivers, a 1990 study revealed industrial source pollution accounted for 5 tons per day, only 6% of the total.[30]

Ground Water. Ground water is a more scarce resource, and consequently supplies much less of the water for human consumption. It too tends to be polluted in urban areas, where water tables are also dropping and salt water intrusion is affecting aquifers in coastal areas. The total industrial contribution to ground water contamination is not known with any precision. In shallow aquifers in the Jabotabek area, typical industrial effluents, such as phenol, detergents and nitrate have been recorded. Pollution of ground water is also caused by mismanagement in the storage of hazardous materials, for example, improperly stored fertilizer. While more than half of the industries located on West Java river basins have waste control units, 46% of them produce discharge that falls below the quality set by national standards.[31]

Air. 1988 emissions inventories[32] conducted on three major cities indicate that Jakarta's industrial sector emissions account for about 15% of particulates, 16% of nitrogen oxides, and 63% of sulphur oxides loadings. In Surabaya, the industrial sector shares of these pollutants were about 28%, 43% and 88%, respectively. Bandung recordings revealed pollutant shares at 20% for

[29] Brantas River Basin Development Executive Office, 1989
[30] Chifos, 1991
[31] BPS, 1994
[32] Soemodo, 1993

particulates, 29% for NO_X, and 71% SO_X. The inventories suggest that pollutant emission from the industrial sector is determined primarily by the use of fuel for industrial consumption. Except for the continuous monitoring program run by the City of Jakarta since 1982, on-going ambient air quality monitoring is currently not conducted in Indonesia.

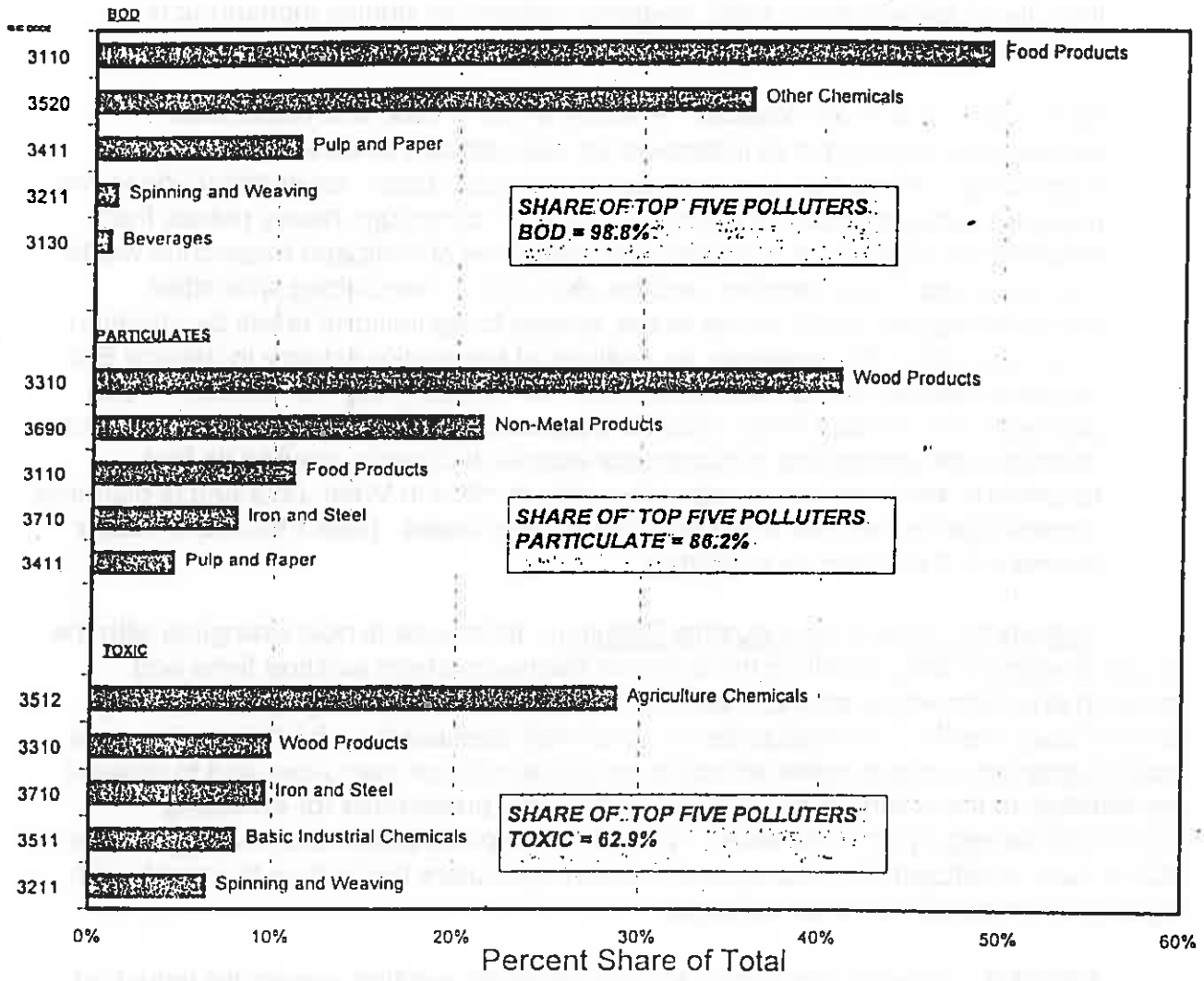
Hazardous and Toxic Wastes. Precise levels of toxic and hazardous substances disposed of in Indonesia are also difficult to establish. The monitoring of rivers that is carried out on a regular basis, for example, does not measure concentrations of mercury, copper or chromium, heavy metals from industrial production. It is evident that quantities of toxic and hazardous waste are deposited in uncontrolled landfills, dumped in rivers along with other industrial wastes, and in some cases, spread to agricultural areas by irrigation water and wind. For example, an analysis of the Angke estuary in Jakarta Bay, reported mercury contents ranging from 7 to 18 ppb (parts per billion).[33] The allowable limit for sea water used for aquaculture is set at 6 ppb. In an effort to address safe processing of hazardous wastes, Indonesia opened its first hazardous and toxic waste disposal facility in 1994 in West Java and is planning construction for another three facilities in other areas. (See FIGURE 3: Major Sources of Pollutants by Industry.)

Options for Controlling Industrial Pollution. Indonesia is now wrangling with the issues of appropriately handling the pollution discharged from existing firms and ensuring environmentally sound practices from new and expanding firms. Existing national laws require industrialization to occur with consideration for the environment, encouraging industries to make efforts to conserve national resources and to prevent any damage to the environment. Where institutional procedures for enforcing environmental regulations are weak, civil and media participation is active in Indonesia; NGO's have mobilized boycotts against industrial polluters that refuse to comply with regulations or compensate for damages.

BAPEDAL recently introduced an environmental auditing system for industrial companies. Although an environmental audit is currently voluntary, the government agency has the authority to order a polluting company to undergo the process. Since implementation, the agency has ordered three firms to be audited. Another vehicle for addressing industrial pollution involves the courts. In Jakarta, the number of court cases involving industrial polluters increased from three in 1992 to 25 in 1995, but formal litigation often produces unsatisfactory results. Bappenas recently announced the government's plan to set up an Alternative Dispute Resolutions (ADR) system to address these types of legal gaps, in response to public demands for environmental safety. Finally, another tactic Indonesia is exploring more seriously is the use of cleaner production concepts in the upstream industries--developing and using clear technologies and processes. Indonesia cooperates with several foreign firms in the

[33] Hutagalung, 1987

FIGURE 3
Major Sources of Pollutants by Industry



Source: World Bank

filed of environmental technology. Because Indonesia's business community is just beginning to become more environmentally conscious, the government provides incentives to attract environmentally friendly industries.

Reducing pollution from its sources costs much less than clean-up costs for a polluted environment, such as treating grossly contaminated water. Abatement for existing industry in Indonesia would cost an estimated US$70 million per year, or less than 0.5% of total industrial sector sales, and 0.6% of GDP, according to the World Bank. Indonesia may consider the potential for offsetting the costs of abatement through cost-saving innovations in waste minimization and waste recycling. These type of innovations appear to have potential for realizing those savings while simultaneously achieving lower industrial pollution levels.

Vehicle Emissions

Vehicle Emissions and Traffic Congestion. While sources of air pollution are difficult to establish with accuracy, in most large cities vehicle emissions are the largest single factor in urban air pollution, and they are also likely to be the fastest growing source of harmful pollutants. (See FIGURE 4: Pollution from Vehicle Emissions -- Jakarta.) Transportation, industrial processes, power generation, burning of household wastes, agricultural burning, forest fires and other sources also contribute to the problem, but in much smaller percentages. For example, in comparison to other sources, the percentage contribution of particulate emissions by vehicle transportation in Jakarta, Bandung and Surabaya are 44%, 28%, and 13%, respectively; in all three cities, vehicular emissions account for virtually 100% of the lead and CO in the air.[34]

Two-stroke Engines. Among all types of vehicles, two-stroke motorcycle engines are a major cause for concern; many experts recommend phasing out the use of these vehicles as quickly as possible. These types of motorcycles produce as much as ten times the smoke and hydrocarbon (HC) emissions as do four-stroke or even cars.[35] (See FIGURE 5: Estimation of Hydrocarbon Emission from Motorized Vehicle, 1989-1992.)

Trends. During the 1980s, the number of motorized vehicles in Indonesia more than doubled. One third of these vehicles are in urban areas, and this trend is expected to continue. Road construction from 1989 to 1991 significantly extended various road networks. Over this period, 6,234 kilometers were added to national roads, 40,126 km were added to regency roads, and 972 km were added to municipal roads. The overall expansion of the urban road network, however, has not kept pace with needs, and this has led to rapidly growing traffic congestion and vehicle emissions in the major metropolitan areas. Urban development in Indonesia is characterized by a concentration of activities in center sections of cities, with new residential areas

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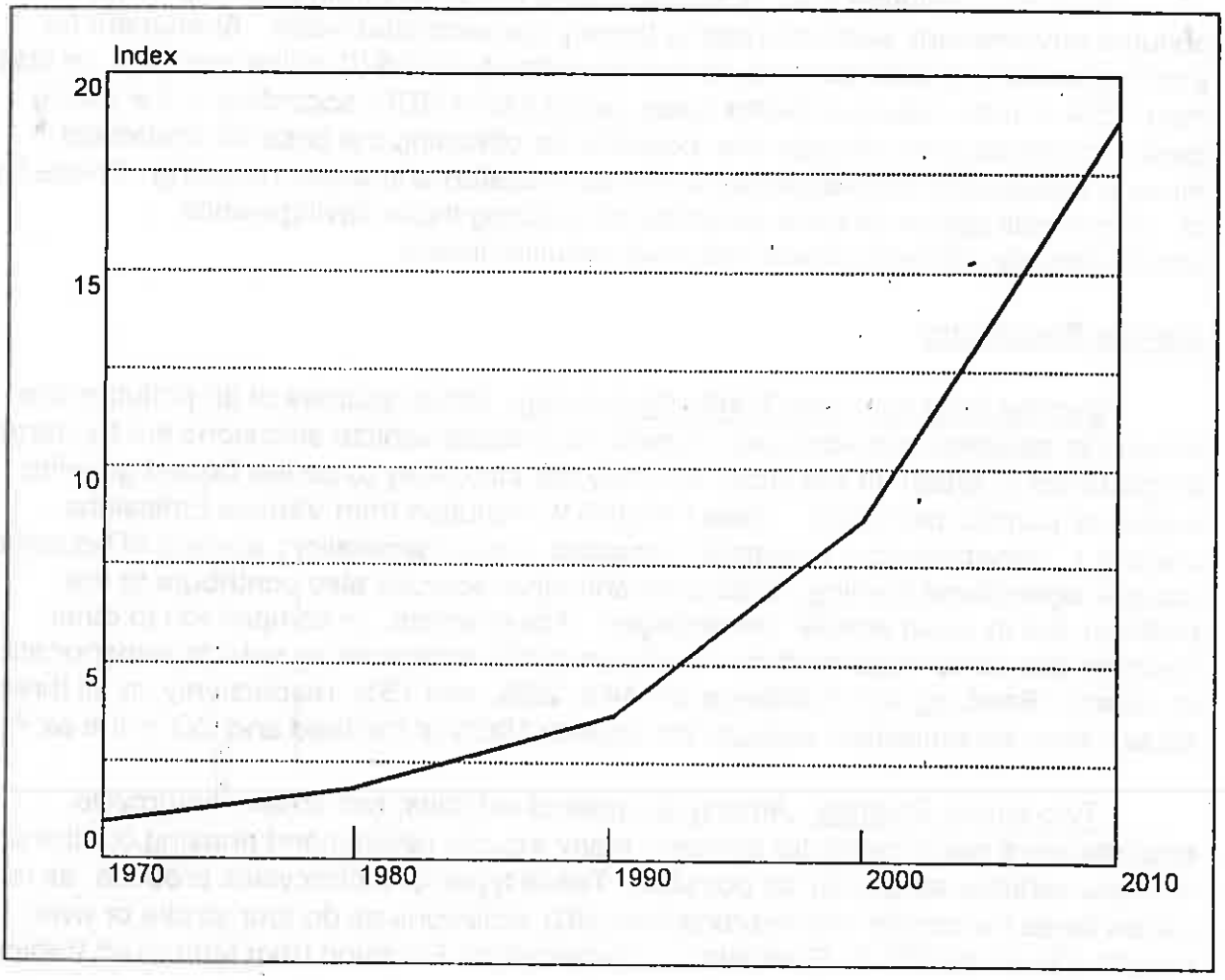
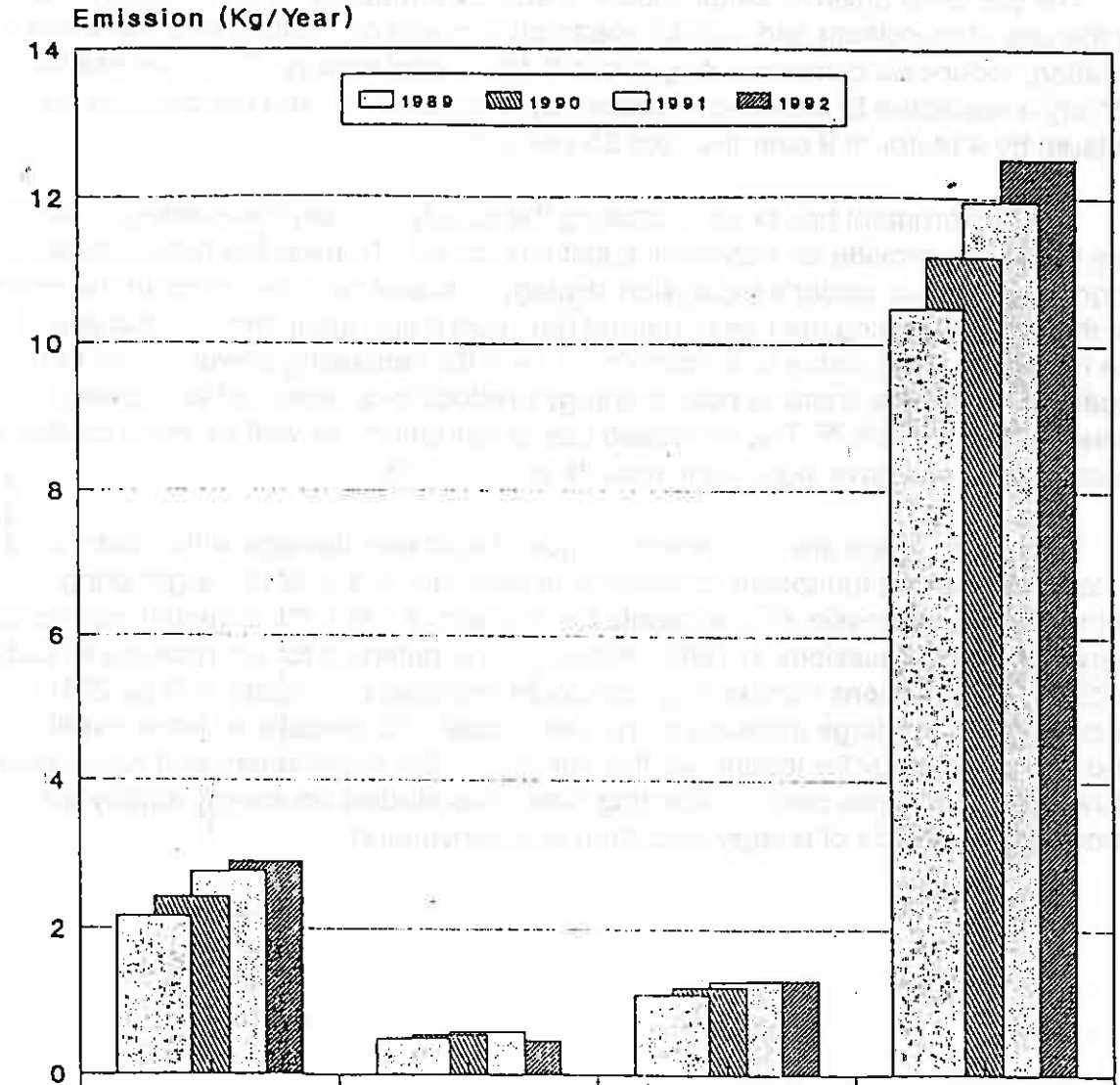
[34] Soedomo, 1993
[35] Kingsley, et al, 1994

FIGURE 4
Pollution from Vehicle Emissions -- Jakarta



Source: World Bank Staff Estimates

FIGURE 5
Estimation of Hydrocarbon Emission from Motorized Vehicle
1989 - 1992



	Passenger Cars	Buses	Trucks	Cycles
1989	2.161	0.514	1.12	10.489
1990	2.418	0.558	1.219	11.193
1991	2.75	0.601	1.295	11.951
1992	2.897	0.485	1.318	12.519

Source: Biro Pusat Statistik/ Compendium of Environmental Statistics of Indonesia, 1993

developing in the periphery. This leads to traffic conditions where lower average speeds cause inefficient fuel utilization.

Energy Production and Utilization

The principal environmental impact of energy production is air pollution resulting from the use of petroleum and coal for electricity generation. With 3% of the world's population, Indonesia consumes only about 0.3% of total energy. The demand for electricity is expected to increase, however, by a factor of 13, and the demand for petroleum by a factor of 9 over the next 25 years.[36]

The Government has been promoting the supply of alternative energy resources where these can provide an economic substitute for oil. To meet the future demand for electricity, the power sector's expansion strategy is based on a reduction in the share of oil through expanding the use of natural gas, hydro and geothermal to the extent these resources area viable and economical, with the remaining power needs to be met by coal. By 2020, the share of coal in energy production is expected to increase between 40% and 56%.[37] The increased use of petroleum, as well as any increase in the use of coal, will have significant impacts on air quality.

At present, there are no observed signs of acid rain damage within Indonesia, and no evidence that Indonesia contributes to acid rain in any of its neighboring countries. And, Indonesia also accounts for only about 1.6-1.7% of global man-made "greenhouse gas" emissions in 1989. Although, the potential for an increase in carbon dioxide (CO_2) emissions from energy use could increase by a factor of 6 by 2010, especially given the large increase in the use of coal. To prepare an environmentally sound energy strategy for Indonesia, the Agency for the Assessment and Application of Technology (BPPT) has been conducting numerous studies on energy supply and environmental impacts of energy utilization and conversion.

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[36] World Bank, 1994a
[37] Sastrohartono,1993; World Bank, 1994a

ENVIRONMENTAL ASSESSMENT: URBAN WATER

Water Quality

Ground water. As much as 30% of Jakarta's population relies upon ground water for their water source. Shallow wells provide a cheap water source, and many households use shallow wells to avoid the need to install home reservoirs or use pumps applied directly to the water utility pipes because of supply interruptions and low pressure in the pipes. However, many ground water sources are polluted with nitrates and microorganisms from domestic waste and toxins from land dumping of industrial waste in parts of Jakarta, Bandung, and Surabaya.[38] In a recent survey in Jakarta, most of the shallow wells examined were contaminated with fecal coliform; tap water samples have revealed a 21% rate of contamination, and samples from public water hydrants were as high as 58%. Where well water has become polluted or brackish, public standpipes and vendors provide an alternate source of water. Venders may charge up to 25 times what water authorities charge, but residents in poorer neighborhoods often have no choice but to spend 15-25% of their income on water. Up to 50% of the water solid sold by vendors in Jakarta is estimated to have fecal coliform.[39]

In addition to shallow wells, there are several thousand deep wells that may pump as much as another 100 to 300 hundred million cubic meters (m^3) per year. Jakarta's deep aquifer is being greatly over extracted, and this overuse causes both salinization and land subsidence. Current ground water extraction is about twice the sustainable rate, although some studies estimate that the recharge rate is only about one-third the rate of extraction. A similar problem is occurring in Bandung where ground water levels are dropping drastically due to large land coverage, where rainwater cannot seep down and refill the catchment area.

Surface Water. Surface water, which supplies two-thirds of public water supplies, is non-potable in many parts of the country, including all surface water in Jakarta. At a treatment plant in Surabaya, the water quality was considered substandard (untreatable by conventional means) in 80% of samples taken at the intake in 1989-90.[40] Results from recent studies of pollutant levels of rivers for Jakarta and Yogyakarta were reported in the Compendium of Environmental Statistics for Indonesia, 1993.

Jakarta. The monitoring of several rivers in Jakarta showed that all the rivers contained every chemical element tested for, except for cyanide and cadmium.

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[38] Chifos, 1992
[39] Chifos, 1992
[40] World Bank, 1994a

Levels of ammonia, nitrate, phenol and ferrum exceeded tolerable value.[41] All 13 rivers in Jakarta have been monitored on a regular basis for the past ten years, and these findings consistently show high BOD readings. The sources of BOD in Jakarta's Sunter River system originate from industrial and other wastewater (50%), solid waste (15%), and domestic sewage (19%).[42]

Yogyakarta. In Yogyakarta, a 1993 clean water program has involved monitoring the level of alkalinity, concentration of hazardous pollutants like sulfide, ammonia, nitrate and coliform, and the concentration of BOD on three rivers. The data shows that concentrations of sulfide, ammonia, BOD and chemical oxygen demand (COD) in these rivers are lower than that of Jakarta, although it also shows the Yogyakarta rivers highly polluted by human fecal matter. Waste water from several hotels and firms in Yogyakarta were also measured. These studies showed that, with two exceptions, the pH of the test sites were around the acceptable ambient pH level (the pH value is a measure of the acid-base equilibrium of water; the lower the number, the greater the acidity). Most of the waste fluid from firms had phenol concentration, BOD or COD above the ambient level. All the firms also discharged concentrations of sulfide above the ambient. Textile industries also produced waste water that exceeded the ambient level for BOD and COD, and these were found to be increasing from 1991 to 1992.

West Java. Waste water from industrial activities in the districts of West Java showed that while the numbers of manufacturers in Bandung, Tangerang and Bogor were the highest, the largest number of waste fluid production came from Kodya Bandung Cirebon, Seran and Bogor. This relationship indicates that the type of production produced and the means of disposal influence the amount of waste more than the number of manufacturers. The Clean River Program achieved an average 27% reduction of BOD and 32.7% of COD in several West Java rivers.[43]

Sea Water. Coastal seas serve to diffuse and carry away pollution from inland industries and urban centers. On the north coast of Java, however, wetland rice and tambak production are increasingly threatened by excessive pollution from streams and runoff, and the marine life in Jakarta Bay already contains potentially harmful levels of mercury. Coral reefs are threatened by excessive exploitation for building material and uncoordinated tourism activities.

Health Impacts of Water Pollution

Wastewater. Because there are so many variables to the causes of waterborne diseases, it is clear that improvement in water quality alone will not be enough to

[41] BPS, 1994
[42] Leitmann, 1994
[43] BPS, 1994

eradicate this health problem. Also needed are accompanying increases in water availability, as well as the treatment of related risk factors and attitudes concerning basic hygiene, sanitation, drainage, and solid waste. Nevertheless, studies do show that improved water and sanitation may be expected to reduce diarrheal mortality by 55% to 60%, and morbidity by 25%. It is estimated that a 25% reduction in diarrheal disease could be achieved in Jakarta by the provision of water supply and sanitation. For Jakarta, such a reduction from the provision of safe water and adequate sanitation would amount to 360,000 fewer diarrheal episodes per year. Diarrheal disease is among the largest causes of morbidity in Indonesia.

Solid Waste. The health effects of inadequate solid waste management are difficult to isolate from those arising from other causes, but Government officials and private sector experts agree that more effective management of solid waste will be essential to ensuring a clean and healthy urban environment. Skin, respiratory and diarrheal diseases are all associated with contact with solid wastes. Indirect health effects can occur when food and water contaminated by solid waste is ingested, and when people suffer from the air pollution caused by burning debris. Accumulated garbage also increases the spread of diseases that are spread by insects or rats.

Options for Managing Urban Water Quality and Use

Expanding Water Supply. Indonesia has greatly expanded the water supply systems to serve the fast growing urban populations. The number of households served increased from 1.6 million to 3.7 million in the 1980s,[44] a substantial achievement. In an effort to provide better water supply services, the Government has constructed public hydrants and offers direct installation for customers. (See TABLE 3: Clean Water Supply by Province -- 1991-92.) The service capacity (in liters per second) for 1991/1992 increased by nearly 52% over 1990/91 due to the extension of water-pipe systems.[45] To continue to improve the availability of safe water in Indonesia's largest cities, the Government is considering ways of significantly expanding systems for piped water supply. The Government is also studying means for increasing public access to water by reducing "unaccounted for water" and leakages in the current system. In some cases, leakages reach 35-40%, and in Jakarta, estimates of water produced without the collection of revenue is as high as 60%.[46] (See the concluding section of this paper for more details of the Government's strategies for managing the urban environment.)

Balancing Urban and Agricultural Water Use. Currently, demand for water in Indonesia primarily comes from the agricultural sector (98%). Industrial and municipal requirements together account for only about 2% of the total demand.[47] Over the next two decades, water consumption by households and businesses will rise rapidly, but

[44] World Bank, 1993
[45] BPS, 1993
[46] Porter, 1994
[47] World Bank, 1994a

they will only account for about 5% of total demand by the year 2010. To meet these needs, some shifting of water in the dry season from agriculture to municipal and

TABLE 3
Clean Water Supply by Province
1991 - 1992

Province	Urban	Rural	Capacity of Product (l/det)	Pipe (K)	Service: Channel of House (Unit)	Service: Public Hidrant (Unit)	Service: Public Cran (Unit)	Service: Water Station (Unit)	Service: Tank Truck (Unit)	Population Served (people)
1	2	3	4	5	6	7	8	9	10	11
Daerah Istimewa Aceh	47	7	89.5	117,176	125	230	-	11	3	24,975
Sumatera Utara	17	18	17.5	114,738	-	218	-	9	3	22,700
Sumatera Barat	26	15	135.0	121,470	83	249	-	6	-	26,081
Riau	12	15	44.5	67,392	200	134	-	28	8	17,600
Jambi	21	1	45.0	66,863	1,035	157	-	25	-	25,445
Sumatera Selatan	57	20	121.0	287,505	4,350	416	-	16	3	73,650
Bengkulu	16	19	113.0	92,237	1,504	167	-	9	3	28,128
Lampung	37	13	415.5	288,272	3,006	251	-	6	2	46,742
DKI Jakarta										
Jawa Barat	36	13	65.0	223,054	1,881	254	-	18	3	40,367
Jawa Tengah	55	18	105.0	362,639	1,460	1,083	-	90	-	127,520
DI Yogyakarta	49	16	-	178,730	8,093	384	-	18	5	96,851
Jawa Timur	37	34	15.0	256,067	-	208	-	76	1	28,400
Bali	11	16	125.0	159,700	1,200	31	-	9	2	12,400
Nusa Tenggara Barat	22	19	-	276,740	3,000	333	-	34	4	57,700
Nusa Tenggara Timur	13	32	50.0	142,856	215	231	-	52	9	29,805
Timor Timur	17	11	45.0	81,355	63	107	-	12	5	12,341
Kalimantan Barat	16	40	20.0	98,942	-	89	-	8	2	9,700
Kalimantan Tengah	13	15	23.5	107,873	300	197	-	12	2	23,000
Kalimantan Selatan	17	8	60.0	60,485	500	109	-	20	5	16,400
Kalimantan Timur	9	17	38.5	39,100	250	123	-	8	-	14,850
Sulawesi Utara	19	34	127.5	161,759	-	299	-	16	4	31,500
Sulawesi Tengah	17	32	30.5	71,920	100	167	-	30	8	20,400
Sulawesi Selatan	46	22	70.0	167,100	2,065	317	-	44	22	50,555
Sulawesi Tenggara	11	6	10.0	56,635	-	139	-	20	5	15,900
Maluku	10	19	50.0	74,114	100	133	-	16	-	15,600
Irian Jaya	14	12	60.0	94,727	-	105	-	187	17	29,200
INDONESIA	645	472	1,876.0	3,769,449	29,530	6,131	-	780	116	897,810

Source: Ministry of Public Works, 1991/1992 Annual Report Directorate General Cipta Karya

industrial use may have to occur. For most localities, this shift should not cause constraints on agricultural production. The degree that urban and industrial development takes up irrigated lands over time (an area expected to equal 10% of Java's total irrigated paddy by the year 2010), will likely equal the water requirements of the new users.

Reducing Ground Water Use. Heavy reliance on ground water to serve industrial and domestic needs in large urban areas cannot continue at current rates; in some parts of Jakarta the shallow aquifer is already running dry. In northern coastal cities of Java, ground water abstraction occurs at rates greater than that of replenishment, causing salinization and land subsidence. With land subsidence comes an attendant increases in floods and waterlogging that aggravate ground water pollution from septic tanks and leaching pits. Because of the comparatively lower costs, private abstractions of ground water far exceed the amounts of water supplied by city water supply authorities. Private withdrawal in Jakarta is estimated at more than 300 million cubic meters (MCM) per year, an amount that also exceeds the estimated annual recharge capacity of Jakarta aquifers of about 114 MCM. The resulting land subsidence ranges from 4 to 9 cm a year, which risks serious damage to buildings and roads. In the northern parts of Jakarta, the salinized area is expanding at a rate of 0.5 - - 1.0 km/year and extends several kilometers south from the coast.[48] Options for managing the problem include a tax on ground water users or adjusting the price incentives for piped water. On the supply side, the government can ensure more sustainable practices through the creation and protection of catchment areas, such as the requirement in South Jakarta that 80% of all property remains open land.

Registering Wells. Incomplete well registration compounds the problems of managing ground water extraction. Once source estimates that approximately 2,700 deep wells are registered in Jakarta.[49] These contribute to recorded abstraction levels of about 31 million cubic meters (MCM)/year. Actual rates of abstraction, however, are believed to be closer to 95 MCM/year. An additional 200 MCM/year of water is estimated to be extracted from approximately one million shallow wells. The municipal government of Jakarta has recently announced a new program for registering wells within the city limits.

Long-Term Options for Water. The long-term options for the public supply of safe drinking water are somewhat limited. With the over-extraction of ground water, expanding public water systems will increasingly rely on surface water to meet demand. Although this demand will remain relatively small compared with the total resource base, the supply of surface water must be cleaner and used more effectively. Reducing leakages in the current piped system and improving management will alleviate some of the pressures on the environment, since the same amount drawn from raw sources will reach more people. Perhaps more difficult and more resource intensive will be the effort to clean already heavily polluted river water. The raw water

[48] World Bank, 1994a
[49] IWACO, 1992

entering Jakarta treatment plants, for example, is reported to be worse than that entering sewerage treatment works in other countries. One technically feasible option would be to upgrade the plants to handle more polluted inflows. This will be expensive, but necessary. Another realistic alternative, which the Government is now beginning to address, is to clean up the pollution at the source.

Options for Sanitation and Sewerage. The main issue for Indonesian sanitation systems regards the safe disposal of human waste. Without adequate wastewater treatment, existing potential drinking water supplies are at risk of contamination. Off-site, conventional sewerage systems for Indonesia's large urban areas are economically unlikely in the near future, although pilot projects are being initiated and alternative systems tried. Some alternatives to conventional sewer systems include small-bore sewers, shallow sewers, and small anaerobic plants. The Government has initiated a pilot program to assess the sanitation needs of up to 25 cities, to determine ways in which off-site and on-site systems can be used. The primary response to wastewater needs, however, will continue to focus on the proper siting, maintenance and cleaning of septic tanks and of public toilets. Experts estimate that investments in urban water supply and drainage, sewerage and sanitation, and solid waste management, which amounted to Rp 2.0 trillion (0.2% of GDP) in REPELITA IV, would need to increase to about 0.4% of GDP in future years.

ENVIRONMENTAL ASSESSMENT: URBAN AIR

Urban Air Quality

Overview. The available evidence on air pollution in Indonesia's major urban centers suggests that, much of the time, the concentrations of several pollutants already exceed the national ambient air quality standards the Government has established (See TABLE 4: National Ambient Air Quality Standards -- Current & Proposed.) Excesses have been recorded in the level of total suspended particulates (TSP), and in lead, sulphur dioxide (SO_2), and nitrogen oxide (NO_x). These last three have been observed in selected areas of heavy traffic in Jakarta, Bandung, and Surabaya. The percentage increase in carbon monoxide (CO) emitted by cars and motorcycles from 1991 to 1992 was nearly 5%. The impact of these pollutants in the air primarily cause concern for human health; other potential environmental impacts from air pollution such as soil productivity, ground water contamination, aquatic ecosystems are unlikely to develop into problems of significance.

Jakarta. Due to its concentration of traffic and industries, Jakarta experiences the most problems with air pollution. Relatively flat, the city receives infrequent atmospheric inversions and only low speed winds, which contribute to the build up of pollution. Constant soft breezes, however, direct air toward the sea at nighttime, and the limited number of high rises also permits these winds to flush out some of the pollution. In 1991, the SPM quantity measured in certain areas of Jakarta severely exceeded the ambient standard of 0.26 mg/m^3; in one area it was as high as 0.8394 mg/m3. (See TABLE 5: Analysis of Suspended Particulate Matter in Jakarta Neighborhoods -- 1991.) Other measurements for air pollutants in Jakarta reveal that while concentrations of SO_2, NO_x and ammonia (NH_3) appear to be increasing, in general they fall below the threshold value.[50]

Other major Indonesian cities will be expected to follow Jakarta's pattern of pollution, with the exception of Bandung, whose location on a plateau surrounded by hills creates conditions for trapping air. Recent air quality measurements for Bandung indicate relatively high concentrations of SPM and hydrocarbons.

Trends. The transport sector is expected to grow at 6-8% per year.[51] Fuel use in road transport and the attendant pollution is projected to increase by twice the 1990 level by 2000, five times by 2010, and nine times by 2020. Emissions of particulates are projected to increase by a factor of 8, those of lead by a factor of 9, and of those nitrogen oxides, by a factor of 14.

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[50] BPS, 1994
[51] World Bank, 1994a

Indonesia currently has ten cites with more than a million inhabitants of which seven are on Java. Given the expected growth in urban populations, rapid growth in vehicles and increasing road congestion, and the expansion of air pollution from

TABLE 4
National Ambient Air Quality Standards -- Current and Proposed

No.	Parameter	Time of Measurement	Standards
1	Sulfur dioxide	24 hours	260 $\mu g/m^3$ (0.10 ppm)
2	Carbon monoxide	8 hours	2260 $\mu g/m^3$ (20 ppm)
3	Nitrogen oxides	24 hours	92.50 $\mu g/m^3$ (0.05 ppm)
4	Ozone	1 hour	200 $\mu g/m^3$ (0.10 ppm)
5	Dust	24 hours	260 $\mu g/m^3$
6	Lead	24 hours	0.06 $\mu g/m^3$
7	Hydrogen sulphide	30 minutes	42 $\mu g/m^3$ (0.03 ppm)
8	Ammonia	24 hours	1360 $\mu g/m^3$ (2 ppm)
9	Hydrocarbon	3 hours	160 $\mu g/m^3$ (0.24 ppm)

DRAFT NATIONAL AMBIENT AIR QUALITY STANDARDS FOR INDONESIA

No.	Parameter	Measuring Time	Standard
1	Sulfur dioxide	1 hour 24 hours 1 year	900 $\mu g/m^3$ (0.34 ppm) 300 $\mu g/m^3$ (0.11 ppm) 60 $\mu g/m^3$ (0.02 ppm)
2	Carbon monoxide	1 hour 8 hours	30,000 $\mu g/m^3$ (26 ppm) 10,000 $\mu g/m^3$ (9 ppm)
3	Nitrogen dioxide	1 hour 24 hours 1 year	400 $\mu g/m^3$ (0.21 ppm) 150 $\mu g/m^3$ (0.08 ppm) 100 $\mu g/m^3$ (0.05 ppm)
4	Oxidant as O_3	1 hour	160 $\mu g/m^3$ (0.08 ppm)
5	Suspended particulates	24 hours 1 year	230 $\mu g/m^3$ 90 $\mu g/m^3$
6	Lead	24 hours 1 year	2.0 $\mu g/m^3$ 1.0 $\mu g/m^3$
7	Hydrocarbon	3 hours	160 $\mu g/m^3$

Remarks: These values have been determined based on the following at the atmospheric conditions, i.e., temperature: 25°C, and 1 atmosphere.

Source:
1. The Decree of the State Minister for Population and the Environment No. 02/1988. Annex III, p. 29
2. The World Bank

TABLE 5
Analysis of Suspended Particulate Matter in Jakarta Neighborhoods
1991

(µgr/m3)

Bulan *Month*	BMG	Ancol	Bandengan	Glodog	Monas	Halim	Ciledug	Medan	Manado	Kenten Palembang	Banjar Baru
1	2	3	4	5	6	7	8	9	10	11	12
Januari/ *January*	125.39	-	-	-	-	-	-	-	-	-	-
Februari/ *February*	153.53	-	-	-	-	-	-	-	-	-	-
Maret/ *March*	153.00	-	-	-	-	-	-	-	-	-	-
April/ *April*	153.05	-	350.33	830.40	164.33	-	-	-	74.03	46.21	56.29
Mei/ *May*	180.19	-	438.08	839.94	218.26	-	-	-	47.04	89.11	32.86
Juni/ *June*	181.41	-	342.96	574.21	176.86	111.95	285.45	300.80	78.70	125.66	69.98
Juli/ *July*	241.31	283.25	499.02	604.06	223.92	135.75	337.07	120.97	74.84	104.34	52.40
Agustus/ *August*	209.15	198.47	519.96	575.94	242.91	163.88	336.97	200.46	77.43	222.28	58.19
September/ *September*	213.97	286.21	554.69	647.41	258.12	207.15	299.24	205.08	85.41	226.93	96.41
Oktober/ *October*	186.14	290.93	568.85	566.30	202.64	159.32	252.08	204.59	85.46	333.57	67.63
November/ *November*	181.78	242.90	496.63	617.88	159.67	160.26	190.99	141.59	90.77	84.46	54.11
Desember/ *December*	200.60	267.52	361.82	578.75	-	-	231.20	-	64.13	136.46	27.65

Source: Biro Pusat Statistik/ Compendium of Environmental Statistics of Indonesia, 1993.

industry and power plants in and around the major urban centers, the condition of the air in the largest cities is likely to worsen dramatically if nothing is done.

Health Impacts of Urban Air Pollution

Total Suspended Particulates (TSP). On an annual average basis, the measured concentrations in Jakarta range from 181 μg/ m^3 to 392 μg/m^3, more than twice the proposed standard of 90 μg/m3. High exposure to TSP has been related to a series of health problems involving the respiratory system. Acute respiratory infections already cause high rates of mortality and morbidity in Indonesia, and a high prevalence of chronic respiratory disease exists. According to the 1990 Census, acute respiratory infections account for 14.4% of all mortality for children under five, which makes it the second leading cause of death after diarrheal disease. For the population as a whole, a 1986 Household Health Survey by the Ministry of Health showed that inflammation of the respiratory tract was the sixth leading cause of death, accounting for 6.2% of all mortality. In Jakarta, however, this health problem caused nearly 13% of all deaths.[52]

Studies of the relationship between the concentrations of TSP and adverse health outcomes have not been conducted in Indonesia. However the World Bank has reported on one study, which used ratios from the U.S. and data from Bandung to produce the following estimates of outcomes that can be attributed to excessive levels of TSP in Jakarta:[53]

> **Mortality.** Given Jakarta's 1990 population of 8.2 million and crude mortality rate of 0.007, the excess mortality attributable to the excess level of TSP pollution is estimated at 1,500 deaths per year.
>
> **Morbidity.** The annual effects in Jakarta of high TSP levels can be tentatively estimated at six million restricted activity days (days spent in bed, days missed from work and other days significantly restricted due to illness), in addition to 41,000 emergency room visits and 18,000 respiratory hospital admissions, 100,000 cases of lower respiratory illness in children and 300,000 asthma attacks.

Lead. Exposure to lead can interfere with the biochemical processes of the circulatory, reproductive, nervous and kidney systems. Studies show that long-term exposure to lead can cause decreased learning levels in children. In Jakarta, the average 24-hour concentrations measured in Jakarta ranged between 0.5 - 2.0 μg/m^3, just under the proposed Government standard. However, the location of the sample collection efforts have led some experts to conclude that lead concentrations must be far above the standards in the more heavily trafficked areas of Jakarta, and some other major cities. This is consistent with the findings of epidemiological studies that show

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[52] Ministry of Health, Health Ecology Research Center, 1991
[53] World Bank, 1994a

very high concentrations of lead in the blood of central city residents, particularly taxi drivers, street vendors, slum dwellers, etc. Several studies reviewed by the World Bank have estimated the health consequences of lead exposure in Indonesian cities, based on data from the United States. These studies conclude that the health effects of excessive ambient air concentrations of lead in Jakarta include about 62,000 cases of hypertension and 350 cases of coronary heart disease, 340 cases of mortality related to cardiovascular disease in adult men, and some decline in the intelligence of children.

Nitrogen Oxides (NO_X). Nitrogen oxides effect the functions of the lung and increase sensitivity in asthmatics. Roadside measurements carried out in Jakarta recorded NO_X ranges from 80 to 190 µ/m3 and measurements in Bandung recorded around 100 µ/m3, concentrations close to or above the government standard. Consistent with the findings for lead, this differs from the measurements taken at the regularly monitored stations in Jakarta, which show the highest average level of NO_X at about half the proposed Government standard of 100 µg/m3 (24-hour average). Again, the difference is attributed to the location of the monitoring stations. Experts estimate that incremental respiratory problems attributable to current NO_2 concentrations include about 1.8 million cases per year. NO_2 is also a precursor of ozone, nitrates (a constituent of TSP), nitric acid, and potentially carcinogenic nitrogen compounds. At high levels of exposure NO_2 may be associated with respiratory symptoms and disease in children.

Options for Controlling Urban Air Quality

Infrastructure Investment. Reducing the growth of traffic congestion will be essential for improving the quality of air in Indonesia's urban areas. However, to manage the growing problems of traffic congestion and vehicle emission, investments in urban roads and other transportation related infrastructure will need to expand substantially. In early 1995, the Government approved plans to build a subway and an elevated railway to help ease traffic congestion in Jakarta. Construction of the subway, which will link areas in South and West Jakarta, is expected to begin in 1996 and cost approximately US$1 billion. The elevated railway, to link two areas of South Jakarta, is expected to cost approximately US$800 million.

Changes in Fuels and Fuel Pricing. Controlling the growth of vehicle emissions, however, will need to involve a wide range of policy and investment actions, including changes in fuels and fuel prices, better traffic management, more effective land-use management and improvements in public transportation. A study by the Agency for Assessment and Application of Technology (BPPT) concluded that the use of clean technologies could reduce energy emissions by 50% by the year 2021, compared to the amount of emissions produced if no changes are made in the utilization of energy. Another study by the World Bank examined the potential for reducing energy-related air pollution in Jakarta. That report concluded that pollution-based fuel taxes, together

with the introduction of unleaded gasoline and Compressed Natural Gas (CNG), would permit a 90% increase in Suspended Particulate Matter (SPM) instead of the currently forecasted 600% by the year 2020.[54]

Alternative Energy Sources. To reduce the impacts on air quality of the use of petroleum and coal to meet rapidly rising energy demands, the Government is considering a variety of sources for clean, renewable energy, including hydropower, geothermal, bio-mass-based power, and, wind. Another alternative Indonesia is currently exploring is solar energy. More than 16,000 solar home units have been installed in Java, Sulawesi, Sumba and other islands since 1987, and there are plans for another 36,000 units for the eastern part of the country. The Government is considering a loan arrangement that would support construction of another 100,000 home units over the next five years. These would supply electricity for households, water pumps, telecom facilities and medical stations.

[54] World Bank, 1994

OTHER ENVIRONMENTAL IMPACTS OF URBANIZATION

Land Use

As a result of growing population pressure and changes in the nature and intensity of economic activity throughout Indonesia, land-related issues of efficiency, sustainability and equity have become increasingly important. On Java, these issues are reflected in the rapid and often uncoordinated expansion of urban areas, and the spread of industrial firms in and around urban areas. Until recently, this expansion has primarily occurred without consideration of impact on environmental quality and the surrounding communities' health. (See TABLE 6: Land Use in Indonesia.)

Expansion of Urban and Industrial Land. During the period 1980-1990, the urban population of Indonesia grew 5.36% per year, meaning that currently about 3 million people add to Indonesia's city population each year. Land conversion from agricultural to urban use occurs at a rate of about 25,000 ha per year, of which 15,000 ha are in Java. Many larger cities show relatively low-density land use patterns, particularly in the older areas. This has contributed to urban sprawl and an uncontrolled, rapid conversion of prime agricultural land to urban and industrial use. Despite a long tradition of planning Indonesia, no legal procedures have been established to enforce the numerous existing plans.

Land Titling. Indonesia has a fairly rigid system that provides for unambiguous transfers of ownership and processing ownership records in some cases. But this system co-exists with a system of traditional land rights not necessarily based on formal registration. As a result of this co-existence the costs and complexity of land transactions sometimes discourage sustainable use of agricultural land, act as a deterrent to business investment, result in lower land-use density than would be desired in urban areas, and increase the costs of urban infrastructure. Procedures to enforce existing regulations are limited. Government officials are focusing now on enforcement issues, believing that when enforcement is improved, not only will many issues of equity be resolved, but the Government will be able to more effectively guide private land development processes to meet environmental objectives.

Quarrying. Another significant land use issue now receiving Government attention involves quarrying conducted for construction materials used in rapidly developing areas, such as Jakarta. In some areas, quarrying activities are damaging rivers and threatening the water supply. Quarrying also contributes to erosion and over-drainage of water from nearby rice fields.

Downstream Impacts

In addition to the consequences on the immediate environment, the impact of urban and industrial pollution can be carried "downstream", affecting other areas outside urban boundaries. For example, untreated wastewater flowing into inland

TABLE 6
Land Use in Indonesia

(in millions of hectares)

Land Use Type	Java		Sumatra		Sulawesi		Rest of Indonesia		Indonesia	
	ha	%	ha	%	ha	%	ha	%	ha	%
Forest	1.2	9.1	23.3	49.1	11.3	60.5	83.9	75.2	119.7	62.7
Bush/Scrub	1.4	11.0	7.7	16.2	2.2	11.7	7.4	6.6	18.9	9.9
Grassland	0.1	0.5	2.8	5.8	1.1	6.0	6.3	5.7	10.3	5.4
Shifting Cultivation	0.3	2.2	3.4	7.2	0.5	2.8	7.5	6.7	11.7	6.1
Upland	2.3	17.3	1.7	3.6	0.8	4.1	0.5	0.0	5.3	2.8
Wetlands	3.4	25.6	2.2	4.5	0.8	4.5	1.5	1.3	7.7	4.0
Tree Crops	2.4	18.0	3.5	7.5	0.8	4.2	1.2	1.1	7.6	4.0
Urban Areas	1.8	13.5	1.4	2.9	0.3	1.6	0.3	0.2	3.8	2.0
Other	0.5	3.8	1.6	3.2	0.8	4.6	3.1	2.8	6.0	2.7
TOTAL	13.3	100.0	47.5	100.0	18.6	100.0	11.5	100.0	190.9	100.0

Source: Biro Pusat Statistik; RePPProT (1990) The Land Resources of Indonesia.

waterways can cause biological changes that affect the flora and fauna of estuarine and coastal waters. Domestic waste increases the BOD and reduces the dissolved oxygen (DO) in the water, so anaerobic conditions can develop, causing the eventual replacement of aerobic organisms by anaerobic algae and bacteria. These conditions can cause significant downstream impacts on species that depend on estuary and river organisms for survival.

Organic pollution, largely from urban sources, is linked to the disappearance of coral reefs within 30 km of Jakarta Bay. Coastal fisheries can also be affected. Shrimp production on the north coast of Java, for example, is increasingly threatened by industrial pollution; if conditions worsen, this production may have to be relocated. There is anecdotal evidence of economic losses to communities in the outer islands due to the rapid growth of processing industries, with pollution incidents sometimes involving serious health effects as well.

Uncontrolled human and solid waste in resort areas can also jeopardize the sustainability of tourism revenues. For example, because of population pressures, Kuta Beach in Bali suffers some deterioration of its beaches, the main tourist attraction. Government officials have begun to better manage such development in the future, in order to avoid irrevocable loss of markets.

STRATEGIES FOR MANAGING THE URBAN ENVIRONMENT

The Government of Indonesia recognizes the magnitude of obstacles facing efforts to effectively carry out environmental management in its rapidly growing urban areas. A substantial increase will be required in public and private sector investment. Motivating private sector firms to invest in pollution abatement, and households and individuals to behave in an environmentally responsible manner, will require a carefully balanced mix of policies and instruments and greatly enhanced institutional capacities for urban environmental management and industrial pollution control. The sections below catalogue a variety of on-going attempts by the Government to carry out its long-term strategy for more effective urban environmental management.

Government Investment in the Urban Environment

The Government's growing concern for improving urban services has been reflected in increased public investment, particularly beginning with dramatic increases in the last two five year development plans, known as REPELITA. Each of the last two REPELITAs has increased funding for urban water supply, sanitation, and solid waste management. Each has also emphasized improved operations and management, increased local government responsibility for investment planning and implementation, and a greater role for the private sector in the provision of public services. REPELITA VI, which begins April 1995, allocates Rp 2.6 trillion to finance environmental projects. The State Minister for the National Development Planning Board (Bappenas) recently stated that, "Environment is more than an issue. It has become a necessity." Since 1992, Bappenas has made urban environmental quality management (UEQM) a priority.

The Government's investments in piped urban water supply reflect a number of important social and economic objectives, including improving the health of Indonesia's urban citizens, enhancing equity for the poor, and reducing the unsustainable use of ground water resources. Investments in sewerage, sanitation and solid waste management are intended primarily to improve human health and welfare, but may also have an important influence on the overall appeal and competitiveness of Indonesia's main urban centers in attracting job-creating foreign investment. Regarding solid waste management, a number of cities have already begun to expand private sector participation; a trend that would benefit most municipalities by reducing budgetary pressures. In 1994, Indonesia opened its first treatment facility for toxic and hazardous waste in West Java. Current plans envisage as many as 10 such facilities in various parts of the country. Both public and private sector investments in the transport sector as a whole have increased quite substantially, quadrupling in the past five years. Much of the Government's investment has gone toward reducing the backlog of maintenance, and renovation of national and provincial roads. Investments in the production of cleaner fuels (particularly unleaded gasoline) will also be needed.

Environmental Regulation

AMDAL. In 1986, Indonesia developed an environmental assessment procedure (AMDALs) for reviewing new investment proposals. Completion of this process is prerequisite for granting the necessary licenses and location permits for project activity. Potentially, the assessment process may require an industrial applicant prepare an Environmental Management Plan and an Environmental Monitoring Plan if an evaluation shows that serious impacts can occur. This process, however, has experienced some shortcomings in relating environmental assessments with development decisions. To address some of these problems, the Government made revisions in 1993, in order to strengthen and streamline the process. Changes included the elimination of preliminary information documents, a simplification of the screening process, reduced time limits for decision making by the AMDAL commissions, and strengthened relationships between the AMDAL process and the process of granting permits for business operations. In addition, three important new types of AMDAL processes were introduced, including AMDAL Kawasan, for industrial estates and other special zones, AMDAL Regional, for assessment of regional development or spatial planning areas, and AMDAL Kegiatan Terpadu, for multisectoral projects.

BAPEDAL. In 1990, the Government established a new national agency for environmental pollution control in order to develop procedures to implement environmental protection regulations. Known as the Environmental Impact Management Agency, or BAPEDAL, the new agency has a mandate to control pollution and maintain oversight of the AMDAL process.

BAPEDAL was modeled after the U.S. Environmental Protection Agency and was intended to have similar regulatory enforcement powers as those established in the U.S. BAPEDAL is chaired by the Minister for Population and Environment. Two deputies with key environmental roles include: the Deputy for Pollution control Program Development, who deals with water and land pollution, marine and air pollution, and hazardous waste management; and the Deputy for Development, who deals with AMDAL, Licensing/Enforcement, and Reference Lab/Information Systems. In 1994 a new deputy was added to address institutional development needs, particularly to help develop BAPEDAL functions at the regional level. BAPEDAL is accountable to the President directly for policy formulation for pollution control; management of disposal of hazardous waste; monitoring and control of activities in environmental impact analysis, laboratory analysis, and community participation; and enforcement of environmental standards. BAPEDAL also has the authority to sue companies violating environmental standards

Among other accomplishments, BAPEDAL has adopted industrial effluent standards for selected industries. Emission standards for the most seriously polluting industries were recently tightened, controlling the emission levels of ammonia, chlorine

gas, chloride hydrogen, particles, sulfur dioxide, black lead and others. The idea of legal enforcement is relatively new and the mechanisms are still being developed and tested. BAPEDAL is the first such agency having enforcement authority for environmental concerns. Other agencies can collect data, conduct monitoring, prepare policy suggestions, etc., all of which go to either governors or MLH for consideration. Under this arrangement, however, only the governor had powers to enact some type of sanction (primarily referred to as administrative sanctions). The roles and responsibilities of BAPEDAL are still evolving.

Integrated Urban Infrastructure Development Program (IUIDP)

In 1985, Indonesia officially established the Integrated Urban Infrastructure Development Program (IUIDP) as the process through which physical infrastructure planning and project implementation should occur. Implementation of IUIDP actually began in 1989/90. It has sought to improve the quality of urban environmental infrastructure by improving the technical planning capabilities of local governments. Urban infrastructure investment packages planned as part of IUIDP include Medium-Term Investment programs, a Revenue Improvement Action Plan, and a Local Institutional Development Action Plan. In 1990, a four-year project began, which supported implementation of IUIDP activities and assisted in the local-level planning and management of IUIDP work.

The significant features of policies promoted under IUIDP are:

- Less reliance on the central government for planning and delivering urban infrastructure and services.
- Improving local government capability for revenue generation; providing greater access to funds from loans.
- Strengthening local government's manpower and institutional capabilities for planning and managing the delivery and development of urban infrastructure more cost effectively.
- Integrating physical planning with institutional and financial development plans.

The sub-sectors addressed by the IUIDP approach are:

- water supply
- human and solid waste management
- urban roads and drainage systems
- market and neighborhood infrastructure

As intended, IUIDP is slowly evolving to become IUDP -- Integrated Urban Development Program--by adding sectors such as housing, transportation, planning, traffic management, and land management.

Special Environmental Programs

The Clean River Program (PROKASIH). Operating for the past four years, the PROKASIH program in Indonesia was initiated in response to growing pollution loads in critical watersheds, and was designed to overcome the previously fragmented and uncoordinated efforts to control such pollution, especially from rapidly expanding industries. It aims to cleanse 24 of the country's most polluted rivers. It was inaugurated by KLH (Ministry of Population and the Environment), in collaboration with the Ministry of Home Affairs and senior officials from the eight most industrialized provinces: East Java, Central Java, West Java, DKI Jakarta, North Sumatra, South Sumatra, Lampung, and East Kalimantan. In 1990, the provinces of Riau, Aceh, and West Kalimantan also joined. The initial focus was on the worst industrial polluters in the 24 most highly polluted rivers, with a stated goal of reducing their pollution loads by 50%.

At the central Government level, technical coordination has been provided by KLH (since 1993, MLH) and (since 1990) BAPEDAL, and administrative coordination has been provided by the Ministry of Home Affairs. Implementation is carried out by provincial authorities, with support from central agencies as needed. PROKASIH teams in the provinces are coordinated by vice governors, and include representatives from BKLH (Bureau of Population and Environment), BAPPEDA (Regional Planning Agencies), PSLs (university based environmental studies centers), research laboratories, local offices of the Ministry of Industry, police, and prosecutors, and other relevant sectoral agencies. The mass media is encouraged to report on environmental damage caused by pollution and on significant clean-up efforts. NGOs are encouraged to facilitate the participation of community groups in related environmental activities.

The Kampung Improvement Program (KIP). Over the past 25 years the Kampung Improvement Program (KIP) has improved living conditions for about nine million low-income urban residents in 527 cities and towns through provision of an integrated package of basic services, including water supply, sanitation, drainage, roads, footpaths, schools and clinics. While KIP has been effective in providing basic infrastructure, and is popular among recipients, the program continues to evolve, with Government administrators learning from past performance. The program's successes have underscored the fact that various features are essential for effective operations and maintenance of KIP improvements, as well as wide use of public sanitation facilities: attention to sanitation and health education, efforts to effectively involve residents in location planning, the presence of training programs for facility maintenance, together with financial or in-kind contributions by residents. Central and municipal agencies have attempted to design a more flexible program based on increased community participation in defining local needs and in project design and implementation.

The Clean Cities Program (Adipura). Adipura is a national-level award program for cities that achieve outstanding levels of cleanliness. The program was begun in 1986 and considered a key approach for monitoring and encouraging the environmental awareness in urban areas. Candidate cities must submit completed questionnaires that include questions about garbage management, public participation, and public health. Expert teams review these applications and conduct on-site inspections, using predetermined criteria overall city cleanliness. Cities are eligible for awards in a variety of categories based on size. As the accompanying table indicates, the national response to the program has been dramatic, as has been the accomplishments of a growing number of urban areas. (See TABLE 7: Adipura Award Winners -- 1986-94.)

City Greening Program (Hutan Kota). Over thirty years ago the Government recognized the need to increase green spaces in cities, and many cities have departments that focus on urban parks, green strips along roads, tree planting, etc. Green "belts" are routinely included in the urban development plans for cities, but economic development priorities for urban land use have weakened many of these greening efforts in the past. During Repelita VI the Government has begun a nation-wide program for city greening, particularly tree planting, based in part on city greening models developed and used in Canbera, Australia. One of the most visible, early achievements of the program has been the relocation of the Jakarta Fair Grounds from the Monas park area, which has become the focus of extensive tree planting and other greening activities.

TABLE 7
Adipura Award Winners
1986 - 1994

KATEGORI KOTA	TAHUN											
	1986	1987	1988	1989	1990	1991	1992	1993		1994		
KOTA RAYA	-	Bandung	Surabaya	Surabaya Bandung	Surabaya Bandung	Surabaya Semarang	Surabaya (AK) Semarang Bandung Jakarta Pusat	Surabaya (AK) Semarang Jakarta Pusat Bandung		Semarang Jakarta Pusat Surabaya		
KOTA BESAR	Padang	Surakarta	Surakarta Padang	Surakarta Padang	Surakarta Padang	Surakarta (AK) Padang (AK) Malang B. Lampung	Surakarta (AK) Padang Malang B. Lampung	Surakarta (AK) Malang B. Lampung Padang		Malang Padang (AK) Surakarta Bandar Lampung		
KOTA SEDANG	Bogor	Bogor Jambi	Bogor Jambi	Bogor Jambi Samarinda Ambon	Bogor Magelang Menado	Magelang Cianjur Balikpapan Jambi Cirebon Menado	Magelang (AK) Cianjur Tegal Jambi Purwokerto Cirebon Balikpapan Menado	Magelang Tegal Cirebon Purwokerto P. Siantar Blitar Sidoarjo Jambi Banyuwangi Menado	Sukabumi Jember Cianjur Tasikmalaya Balikpapan Pontianak Cilacap Pakanbaru Metro	Tegal Magelang (AK) Cirebon Jambi (AK) Purwokwerto Blitar Sukabumi Cianjur Balikpapan Batu Cilacap	Mojokerto Banyuwangi Jogyakarta Denpasar Tulung Agung Tebing Tinggi Manado (AK) Ambon Tasikmalaya Banjarmasin Jombang	Sidoarjo Madiun Pemalang Mataram Jember Probolinggo Gresik Pematang Siantar Metro Klaten Cimahi
KOTA KECIL	-	-	Bukittinggi Magelang	Bukittinggi Magelang Temanggung Wonosobo	Temanggung Magetan Wonosobo Tjg Pinang Solok	Bukittinggi Wonosobo Temanggung Magetan Boyolali Kudus	Magetan Bangil Bukittinggi Banjarnegara Kudus Situboodo Solok Wonosobo Boyolali Pdg. Panjang Wonogiri Temanggung Pare Pare Tabanan	Kudus Temanggung (AK) Bangil Solok Bukittinggi (AK) Pariaman Magetan Pdg. Panjang Blora Sragen Wonogiri Bojonegoro Tuban Batusangkar Pare Pare	Boyolali Muaraenim Banjarnegara Situboodo Wonosobo (AK) Payakumbuh Kisaran Wates Lebak Lamongan Lumajang Kuningan Sleman Tabanan Bangli Negara	Temanggung (AK) Bangli Situboodo Blora Padang Panjang Wonosobo (AK) Bukit Tinggi (AK) Tabanan Magetan (AK) Bojonegoro Solok Karang Anyar Sragen Boyolali Pariaman	Wlingi Tuban Bangil Lumajang Purwerejo Wonogiri Kudus Muara Enim Wonosari Bantul Gianyar Kuta Mojosari Sumedang Kuningan	Ungaran Negara Purbalingga Payakumbuh Batusangkar Painan Salido Sleman Kendal Boodowoso Padang sidempuan Banjarnegara Purwodadi Fak Fak Bengkalis Tanjung
TOTAL	2	4	7	12	12	18	30			85		

Note : AK = Adipura Kencana

Annex 1
URBAN AREA ENVIRONMENTAL PROFILE: JAKARTA

The metropolitan area referred to as Jabotabek encompasses Jakarta and the neighboring townships of Bogor, Tangerang, and Bekasi. In 1990 its population totaled nearly 17 million people; it is expected to exceed 26 million by the year 2010. According to Dinas Perumahan (DKI Jakarta's Housing Agency), by 1992 Jakarta's land use was primarily residential, with structured residential area comprising 33% of the total land area and unstructured residential representing 37% of the total. Industrial, agricultural/green areas, urban infrastructure account for nearly 20% of the remaining land, leaving about 10% as "unspecified" in its usage. The per capita income of the area in 1994 was approximately US$1,500 per year, 70% higher than the national average. However Government statistics indicate that there are still over one million people with incomes below the poverty line in Jakarta. They are generally concentrated in unplanned slums that have high population densities, substandard dwellings and inadequate infrastructure.

Below are summaries assessing the status of various physical features of Jakarta's environment, including water quality (ground water, surface water, and Jakarta Bay), air quality, and land (forests and natural vegetation, agricultural land, fisheries, open space).

Water

Ground water, which provides at least 30% of the population with water, is being degraded by saline intrusion due to over extraction and declining recharge, while the secondary aquifers are widely affected by organic pollution linked to infiltration from sewage. The municipal water authority (PDAM) supplies fewer than half of the city's households and businesses with water, and the system is subject to unaccounted for water of approximately 50%, and other technical problems. Other water consumers rely primarily on ground water supplies, mainly from shallow wells. These are rapidly being depleted, and urban expansion is threatening the main recharge area south of the city. Furthermore, the estimated 40% of solid waste that does not reach official disposal sites causes pollution in drains, rivers and also ground water through seepage from informal dumping on vacant land areas.[55]

In the 1980s, Jakarta's watersheds in its southern zones were threatened by development. The Jabotabek Metropolitan Development Plan proposed ecological zoning for the entire metropolitan area. This zoning influenced the design of policies and programs to encourage development away from the sensitive areas in the south and along the water in the north. This planning, along with problems in providing

[55] Hadiwinoto, 1990

infrastructure to south Jakarta helped to promote development along the east-west axis.

Surface Water. As described earlier in this report, all the rivers in Jakarta are heavily polluted. Rivers in Jakarta have been monitored on a regular basis for the past ten years, and these findings consistently show high BOD readings. The sources of BOD in Jakarta's Sunter River system originate from industrial and other wastewater (50%), solid waste (15%), and domestic sewage (19%).[56] High pollution levels cause treatment costs to increase. All surface waters crossing Jakarta are heavily polluted by gray water from households, commercial buildings, together with discharges from industries, pesticide and fertilizer run-off from agricultural land, solid waste, and fecal matter from overflowing or leaking septic tanks.

Water Supply. Water resources in the region are ample but the storage and distribution of water to Jakarta and surrounding fast-growth urban areas is reaching a crisis point. PDAM serves only 47% of the city population. During the dry season, the main source for raw water becomes highly polluted and PDAM's 13 water treatment plants require more time to treat it before it becomes potable, and the water company has trouble even attaining the minimum WHO standards for piped water. Demand management, reduction of losses, and new storage and/or long distance transmission of raw water for urban uses are all urgent requirements to meet the growing needs. Also, upstream headwaters are subject to siltation and pollution because of increasing agricultural and urban pressures on forest and plantation zones. Affected by agricultural run-off, the raw water supply is subject to contamination prior to entering the City. Fecal and other rural wastes lead to fecal coliform concentrations in the range of 104-106 per 100 ml upstream from Jakarta.[57]

Jakarta Bay. The sea water and sediment in Jakarta Bay have high concentrations of heavy metals, with certain areas of the water column experiencing deoxygenation and anaerobiosis.[58] Increasing pollution levels are expected to affect fish production in the bay before the end of the 1990s.

Sewerage and Sanitation

Household Waste. Most households discharge "gray waste" from private kitchens, bathrooms, and laundry directly into drains, and 68% have toilet wastes treated in septic tanks or leaching pits. About 17% of the population rely on pit latrines or toilets that discharge directly to nearby ditches and drains, while 6% use public toilets--which are provided with septic tanks. About 9% have no facilities at all. Water quality analyses show that the effluent from septic tanks often is of poor quality, having BOD levels of more than 1000 mg/l.[59] These patterns of sewage disposal result in the

[56] Leitmann, 1994
[57] MEIP, 1991
[58] Hadiwinoto, 1994
[59] Hadiwinoto, 1994

contamination of secondary aquifers flowing beneath Jakarta when flooding occurs and when overflow from septic tanks and pit latrines affects ground water wells. A significant indicator of sanitation conditions is the incidence of parasites and worms. A 1990 study showed worm infection in 81.1% of a sample of North Jakarta students, 73.3% of a sample of students from Central Jakarta, and 61.1% of a sample of students from South Jakarta.[60]

Flooding. The northern third of Jakarta faces a particular environmental hazard: intensive rainfall combined with high tides in Jakarta Bay cause habitual and costly floods that seriously affect 5% of the city area. Flooding occurs about two times on average per year. This problem is compounded by land subsidence of up to 6 cm annually in some parts of the city, and is linked to over exploitation of ground water resources.[61] Overall, approximately 20% of Jakarta's land is prone to flooding, and once inundated, many areas drain slowly, causing prolonged traffic jams, economic losses, and damage to infrastructure. Since flooding reduces the value of land, the urban poor tend to live where flooding is most frequent; conversely, the damaging effects of flooding are increased in areas where the urban poor live, because their population density means more waste to clog drains, and fewer incentives for community participation in efforts to maintain drainage facilities.

Solid Waste

Production. Jakarta's City Sanitation Office recently reported that the city discarded 25,404 cubic meters of waste daily, of which 21,085 (around 83%) cubic meters were handled by city employees or contractors hired by the city to collect waste.[62] This has been a stable percentage for several years. Although estimates vary, most experts believe that the city produces some 5,000 to 6,600 tons per day of municipal solid waste. Studies estimate that as much as 30% of it (including a significant percentage collected by city contractors) ultimately finds its way into rivers and canals.[63]

Collection. For over half of city residents, including those living below median income levels, the first stage of solid waste collection is organized at the neighborhood level. This waste is moved by foot or by handcart to an open depot space or community container, where it awaits collection by the city. Problems arise when the quality of collection deteriorates and the willingness to pay for collection consequently weakens. Other households have their garbage picked up by private collecting servicers or by the city sanitation department (Dinas Kebersihan).

The composition of Jakarta's solid waste--75% organic--is such that it does not burn well, yields relatively little recyclable material, and does not yield to much

[60] Chifos, 1992
[61] Hadiwinoto, 1990
[62] Jakarta Post, 11 March 1995, p.3
[63] Binnie & Partners, 1990

compression in volume by compactor trucks. Wastes that can be recycled--estimated at 7% to 20% of the total produced--are removed by street scavengers.[64] Scavengers sell their materials to a sorting and recycling operation, which in turns sells materials to a distributor that transports materials to suppliers. Suppliers, in return, sell the waste to recycling factories. A dozen factories in Jakarta recycle some 200,000 tons of paper per year.

Air Pollution

Air pollution in Jakarta has just recently been recognized as a serious problem, and calculations indicate that emissions are on the increase. A city research laboratory, the Center for Applied Research in Urban Environment (P4L), monitors air every eight days at ten different stations across the city. These stations measure particulates, SO_2, NO_X and O_X. Currently measured concentrations of particulates in the Jakarta area register at twice the level of preliminary Government standards. This level of pollution is associated with relatively high levels of respiratory disease recorded in the city. Inflammation of the respiratory tract, for example, accounts for 12.6% of mortality in Jakarta, more than twice the national average.[65]

Industrial Pollution

Approximately 4,000 polluting industries operate in the Jakarta metropolitan area; about 75% of these are small scale producers.[66] Because these small enterprises and cottage industries are numerous and widely dispersed, these polluters are difficult to regulate and hard to identify for education and/or mobilization as part of waste treatment programs. Airborne emission from one large oil burning electricity facility in Jakarta, accounts for as much a significant proportion of the air pollution in Jakarta. Under the Clean River Program, heavy polluting industries along four Jakarta area rivers are being identified and encouraged to install treatment facilities. The city's Center for Applied Research in Urban Environment (P4L) monitors 150 to 200 industries in DKI Jakarta. Although this agency has no authority for enforcement of regulations against deviations, it reports its findings to responsible city agencies for appropriate action.

Urban Environmental Planning

A number of special urban planning initiatives for the Jabotabek area address development issues from the standpoint of environmental concerns. These initiatives including the following:

The Jabotabek Metropolitan Development Plan (JMDP). Developed in the 1980s to address the pressures of massive urban growth in the area, this plan

[64] Porter, 1994
[65] Ministry of Health, Health Ecology Research Center, 1991
[66] Hadiwinoto, 1994

promoted development along an east-west axis as a means to reduce pressure on the aquifer recharge area south of the city and the environmentally sensitive coastal zone in the north. JMDP incorporated environmental planning and management into an overall strategic planning process, and addressed topics such as water resource cycles, upstream water supply, urban water cycles, flooding risk, air pollution, overcrowded housing stock, and urban kampung upgrading. As the basis for the Jakarta Structure Plan, 1985-2005, JMDP has had partial success in linking land use planning with economic and environmental planning.

Jabotabek Urban Development Project (JUDP-I & II). JUDP projects involve activities in the key sectoral components of the JMDP, such as transport planning, water resources and distribution, sanitation and solid waste management, the KIP, etc. Under JUDP, a review of JMDP has been undertaken to define an updated spatial strategy for Jabotabek to restrict development in environmentally sensitive areas, facilitate infrastructure planning throughout the region, formulate development control procedures and assess the existing legal framework related to spatial planning. Population growth and the lack of regular updates have made the JMDP outdated; this review will be incorporated in efforts undertaken in JUDP-III.

Jabotabek Urban Development Project III (JUDP-III). JUDP-III provides the framework for many urban improvement goals, including support for joint wastewater treatment, institutional strengthening of provincial pollution control authorities, environmental improvement in low-income settlements, and community composting and recycling enterprises. It incorporates an environmental protection and pollution control component, and an urban spatial management and monitoring component. It builds on the efforts of the JMDP as well as Jakarta's Kampung Improvement Programs (KIP).

The Jakarta Structure Plan. On the basis of JMDP principles, the Structure Plan (1985-2005) addresses interaction between planning, environmental resources, socio-economic resources, capital investment, and other financial resources for the entire Jakarta area.

Sewerage and Drainage Masterplan. The City is preparing a sewerage and drainage masterplan, providing for intermediate techniques for sewerage treatment because comprehensive, conventional sewerage systems are so capital intensive and expensive to operate.

Integrated Urban Infrastructure Development Program (IUIDP). As noted in earlier sections of this paper, IUIDP was established in the 1980s by Cipta Karya, the human settlements directorate of the Ministry of Public Works, to address the increased local government responsibility in coordinating the preparation, financing and implementation of their own infrastructure programs, particularly in larger urban areas. IUIDP goals for the Jakarta area include strengthening local government capacity as well as initiating revenue/cost recovery initiatives. The process has helped make significant progress in handling environmental impacts.

Spatial Planning. Under recently introduced policy initiatives, Government plans now take into account the spatial dimensions or the environmental limits of future urban growth. In 1992, a new law on spatial planning was passed, which establishes the legal foundation for improving on current practices. This law provides for the identification of environmentally sensitive areas in which development activities would be restricted, as well as improved planning for the location and support of centers of "significant activity" (e.g., industrial and commercial developments, government complexes, and other sources of employment). In the case of the latter, the intention is to ensure the provision of adequate public services and to minimize adverse effects on surrounding communities and ecosystems. In a Presidential Decree issued in late 1993, a spatial planning coordination board was created to examine and regulate the environmental impacts of development activities in the water catchment area for the Greater Jakarta region, bounded by the townships of Bogor, Puncak, and Cianjur. One task of this cross-sectoral board, headed by the chairman of the National Development Planning Agency, is to develop policies and regulations to address the spatial and environmental implications of development in this area.