Institute of
Social Studies

HOUSEHOLD INCOME AND DECENTRALIZED URBAN INFRASTRUCTURE
A CASE STUDY OF THE INTEGRATED URBAN INFRASTRUCTURE DEVELOPMENT PROGRAMME - YOGYAKARTA URBAN DEVELOPMENT PROJECT

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF MAPS

CHAPTER ONE
INTRODUCTION

1.1. Background of the Study.

Since postwar period, urbanization increasing sharply due to improving peace and development process. The expansion of urban population which responds to the economic growth seems different from country to country. According to the United Nations (1982), the urban populations of industrial countries are expected to expand from about 0.8 billion in 1980 to 1.2 billion in 2025 (an annual growth rate of 0.9 percent). In contrast, developing country urban populations are expected to grow from 1.0 billion to 3.9 billion over that period (a rate of 3.1 percent annually). That growth alone (2.9 billion) is 18 times the total US urban population in 1980, the equivalent of building 360 versions of metropolitan Los Angeles at its current size (Kingsley, 1989). This prediction, which is based on past data and tendencies in the future, means that the urbanization in developing countries are faster than that in developed countries.

Similar with this prediction, urbanization in Indonesia shows a tendencies of increasing rapidly. ESCAP (1979) presented the data of urbanization in Indonesia by percentage in following years 1950, 1960, 1970, 1978 shown following number 12.9%; 14.6%; 17.2%; and 20% (Bintarto, 1983). Based on moderate assumptions, it is expected that urban population in Indonesia will have increased from around 33 million (22% of total population) in 1980 to 76 million (36% of total population) by the year 2000, with the rate of urban growth 4.3% per annum while the average annual rate of growth of the total population is projected at only 1.8% - 1.9% (Team of Urban Development Coordination, 1987). The tendency of population growth is moving up in the following years especially concentrated in Java cities.

As late as 1980, population in Java is 62% of the nation's population while Java is only 6% of its land area. It shows the spatial imbalance which has some implications on depleting carrying capacity, lack of urban infrastructures, gaps of household income, and increasing environmental problems in some parts of its urban areas. The growing of urban area in Indonesia like Jakarta, Surabaya, Bandung, Medan, Semarang, and Yogyakarta, tends to grow beyond its administrative boundary, then builds an agglomeration both physical and functional to serve its community and its activities within the urban and the rest of its region. The main cities in Indonesia can be seen in appendix 1.

Rapid population growth in urban areas which is caused by urbanization and natural growth, has increased substantially the demand for urban facilities and services. In last decade of 1980s, it was estimated that about 68% of the urban population was without direct or adequate access to safe potable water and 60% without satisfactory sanitation facilities (UNDP 1985, p2). Without appropriate policies and programmes to provide urban services, this situation will become

a serious problem (Sidabutar, 1992). Some empirical studies[1] and NUDS (National Urban Development Strategy) study[2], show that the growing urban activities often is not followed by the development of urban infrastructure. Giving this statement, a critical question should be raised such as:

> "Does the spatial distribution of household income relate to urban infrastructure problem and how are the government policies to tackle this problem?".

This research focuses on the analysis of household income distribution and existing infrastructure problems, furthermore it tries to examine the government policies on urban development and infrastructure development in Yogyakarta. This research has important contribution to review the issue on urban development and the decentralization on infrastructure provision as be indicated on the Integrated Urban Infrastructure Development Programme[3].

1.2. Indication of the Problem:

In the last two decades, Yogyakarta has been growing beyond its administrative boundary. Some remarkable growths are urbanization and urban development which are related to population, education centres, tourism, services, and other economic activities. Yogyakarta in 1930s is just a small town in interior of Central Java with 60.000 population. It has been growing sharply until 861,294 population in 1991. Urban activities has been expanding beyond its administrative boundary and spills over to neighbouring districts, Sleman in the north and Bantul in the south of Yogyakarta (see appendix 2).

It is a long history that Yogyakarta urban activities concentrated in the urban centre surround the Sultan palace. The pattern of settlement area concentrated in the urban centre close to business area (Malioboro), government office (Kepatihan), and the palace (Kraton). Since 1980s the settlement pattern has been shifting to sub urban which is indicated by growing new settlement provided by government (Perumnas) and private sectors (Developers from REI-Real Estate Indonesia, Cooperatives and Banks). It is followed by growing business centre, education centre, hotels for tourists in the new areas in sub urban. However the settlement pattern shifted to sub-urban (Sleman and Bantul), high density and disorder settlement still can be found around rivers valley in urban centre.

Both old area with high density population and new area with growing fast activities cause

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[1]. see UNDP 1985; Courtney J.M. 1989; and Kingsley G.T. 1989.

[2] The NUDS has established an urban database system as well as provided clear guidance for the current and future challenges of urban development in Indonesia. These were prerequisites for executing policy programs covering all urban areas for the entire country (Sidabutar, 1992 p.23).

[3] This program will be explained in chapter three and its glossary and abbreviation will be attached in appendix 14.

a problem of infrastructure development. Lack of infrastructure is a big problem to support population and urban activities in that area. According to YUDP[4] in their report on RUTRP (Rencana Umum Tata Ruang Perkotaan or General Spatial Urban Plan) analysis, urban infrastructure in Yogyakarta is not sufficient to serve the growing urban activities. Some indications as follow:

- **Clean Water**: only 15% of population can be covered by piped water supply, the remaining population have to use shallow well and rivers which most of them are polluted by human waste and industries.
- **Sewerage and Sanitation**: only 3% of urban population can be served by sewerage system, most of them use on-site sanitation which some of them are insufficient construction and make pollution to ground water.
- **Garbage collection**: only 30% of solid waste can be collected and treated by garbage management from government.
- **Drainage system**: increasing covered massive materials on soil surface leads increasing run off of surface water through drainage system. Some parts of the city have drainage problem related to insufficient of channel, sedimentation and garbage, and lack of drainage network system.
- **The other infrastructures** which is insufficient are housing, market infrastructure, road and transportation, environmental protection and green zone.

In order to develop urban agglomeration and to improve infrastructure, the Indonesian government under Department of Public Work, Directorate of Human Settlement together with related institutions such as BAPPENAS (National Planning Agency) and BAPPEDA (Local Government Planning Agency)[5], Department of Finance, and Department of Home Affairs, set a policies on urban development and a programme of the Integrated Urban Infrastructure Development Programme (IUIDP) in 1987. The IUIDP in Yogyakarta was started in 1989 in cooperation between Directorate of Human Settlement, Swiss Development Cooperation (SDC), and the three BAPPEDA Tk II (Yogya, Sleman, and Bantul) as well as BAPPEDA Tk I (Yogyakarta Province).

1.3. Research Objectives:

This research will attempts to deal with the following objectives: First, to analyze the

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[4] YUDP - Yogyakarta Urban Development Project is a cooperative project between central government (Directorate General of Human Settlement) and local government (Yogya, Sleman, and Bantul). Central government, foreign funding and consultant also involve in this project.

[5] There are two level of BAPPEDA in local government: BAPPEDA Tk I in provincial government and BAPPEDA Tk II in municipal or district government.

relationship between population density, household income and urban infrastructure. Second, this research will assesses the government policies on urban development policies in context of decentralization process (macro perspective) and the process of planning and implementation of IUIDP-Yogyakarta Urban Development Project in the context of what going on in the reality (micro perspective). This assessment is to reflect and to search some alternatives to improve the planning and the implementation of IUIDP-YUDP.

1.4. Research Questions:

Core question:

"Does the spatial distribution of household income relate to urban infrastructure problem and how are the government policies to tackle this problem?".

Specific questions:

a. How is the spatial distribution of population, household income and urban infrastructure in the Yogyakarta urban area? and how can it be explained?. Those questions lead to explore the spatial pattern of those aspects in a growing urban area.

b. Why high population density and low household income often can be found in urban centre? and how about the household income and population density in the urban fringe?. What are their reasons to stay in that areas?. Those questions lead to analyze the population density, household income and it relationships with infrastructure problems.

c. How are the government policies tackle spatial urban development related to population density, household income and the infrastructure in urban development?. This is the most important research question. It leads to go not only describing the data but also furthermore analyzing the data and examining the government policies.

1.5. Research Methodology.

This research will analyzes the relationships between household income and the existing urban infrastructure problems. Quantitative data as well as qualitative data will be used to elaborate the topic. For this purpose, some secondary data such as: statistical data, data from the YUDP project, and some related studies of this field will be collected. In addition, a field work to gather qualitative data have been done in Yogyakarta during August and September 1993.

There are 22 kecamatan (sub-district) in Yogyakarta urban area which is consist of 14 sub-districts administratively under Yogyakarta municipality, 5 sub-districts under Sleman district and 3 sub-districts under Bantul district. Detail unit of analysis on average of household income and existing of infrastructure, is based on kecamatan or sub-district level. Household income data will be based on the Real Demand Study of IUIDP-YUDP 1991. Other data which related to the

existing infrastructure and its problems will be based on data from BAPPEDA and Dinas[6] in local government and YUDP consultants. In addition the field work made an important contribution to check the data with reality.

In order to know the development of Yogyakarta in the future, the government policies on urban development and planning on infrastructure development will be examined by studying the reports, interviewing the key persons, and observing the dynamic trends of development. To analyze those data, the map pattern analysis methods will be applied in this research. Average household income category and simple scoring method will be used to simplify the data. Those category will be exposed on thematic maps. Other data will be presented on tables, graphics, and explanations.

In this study, Yogyakarta will be used as a term of urban agglomeration which consist of Yogyakarta municipality (Yogya) and some parts of Sleman and Bantul districts as urban fringe. Yogyakarta municipality as urban centre in some extent will be called as Yogya to distinguish with Yogyakarta urban area which in some extent is called Yogyakarta.

1.5.1. Thematic mapping of income.

Household income data will be processed by categorizing the data into 5 groups based at kecamatan levels. The next effort is to put in the data on thematic map. From this map it can be analyzed the pattern and of the household income in Yogyakarta. The 'map pattern analysis' is used in this process. The map pattern analysis attempts to achieve two things: aggregation of spatial data and a comparative delineation of a discernible shape in their aggregate distribution (Cullen, 1984). In order to do map pattern analysis, three steps should be done: aggregation, pattern recognition and comparison, and interpretation.

The aggregation is a simplification of the data to describe in a summary and clustered form a subset of the discrete events in a given area, in this case kecamatan as given administrative area. In this stage the data both population and household income are transferred into thematic maps. Through thematic maps, the pattern recognition and comparisons can be proceeded. The pattern recognition and comparison is an effort to understand the data distribution and its relations in a spatial context. This efforts needs an innovative skills to relate and to compare the data in the maps and in both theoretical framework and empirical evident. The next step is an interpretative work to elaborate and to give a meaning of what we have been done in the previous steps.

1.5.2. Presentation of Infrastructure Data.

The existing infrastructure data will be presented on table for each type of infrastructures.

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[6] Dinas is provincial or local department agency, office or service. Other terms, abbreviations, and acronyms will be attached in appendix 15.

Basically the data will be based on area (unit) analysis of kecamatan. Some related data will be combined to analyze the relationship between existing infrastructure with other data such as: population, and household income.

A simple scoring method will be employed to determine the urban infrastructure distribution. Some types of infrastructure related to the IUIDP programme at kecamatan level can be scored: piped water, drainage system, sanitation facilities, and garbage collection. Through simple scoring method, those scores can be summed to categorize the urban infrastructure at kecamatan level. A thematic map will be developed based on that categorization.

1.5.3. Examining Government Policies

The examination of government policies will be done by critical analysis of the policies and by comparative analysis of the reality and the trend of development. Some studies on the IUIDP programme and its critics as well as field information of what going on in the reality will be used to elaborate arguments in this analysis.

1.6. Organization of the Paper

This paper is organized as follows. Chapter I as an introduction presents the background of this study and the identification of the problem, objective and research questions, and research methodology, then following by the organization of the paper. Chapter II elaborates the theoretical framework. Chapter III explains the Government Policies on Urban development and the Integrated Urban Infrastructure Development Programme. Chapter IV presents a case study of Yogyakarta. Chapter V analyzes population density, household income and their relations with the existing infrastructure. Chapter VI presents further discussion, conclusions with some recommendations.

CHAPTER TWO
URBAN GROWTH, HOUSEHOLD INCOME, AND DECENTRALIZATION OF URBAN INFRASTRUCTURE

This chapter elaborates the theoretical framework related to this topic and conceptual framework of this study. Section one discuses the urbanization and urban growth. Section two discuses location decision of household related with income. Section three discusses the concepts of decentralization of infrastructure provision.

2.1. Urbanization and Urban Growth.

Government in developing countries face two inevitable trends over the next quarter of a century: rapid urbanization and a high concentration of the poor in large cities. Many migrants are poor and lack of skills. They will joint with the poor household in urban centre, who continue to crowd into slums and squatters settlements in increasing numbers (Rondinelli and Cheema, 1988). Urban area have grown rapidly especially in developing countries. Between 1960 and 1990, for example, the population of urban areas is estimated to have grown 180 percent in Africa, 150 percent in Latin America, and 135 percent in South Asia, while rural areas grew by only 45 percent in the same decades (Todaro, 1992). The migration of people from rural to urban area has been the principal cause of tremendously increasing urban population.

Urbanization in Indonesia grew fastest in the 1970s when the new order government have restored economic development through REPELITA, a five years development plan. The plan integrates agricultural and industrial development to achieve economic growth. The economic growth was increasing sharply especially during oil boom in 1970s. The government have invested in strategic infrastructures to support agricultural sector such as dams, irrigation, and industrialization related to agricultural sector. An intensive agricultural programme (Green revolution) has been introduced to increase agricultural production. This programme is basically inducing high input (technology and capital) in agriculture on the other side, but reducing labour force on the other side. As a result agricultural production increases sharply but unemployment in rural areas also increasing tremendously.

A simultaneous programme have been developed in industrial sector. The government invites private sector both foreign and domestic investors to develop industry. Industrialization have been growing sharply during the last two decades especially in urban area and it become an economic engine of the country. Economic growth generated by industrialization has a multiplier effects to other economic activities in urban areas. Therefore jobs opportunities in urban areas relatively high compare with that in rural areas.

Jobs opportunities (labour demand) in urban areas attract rural unemployment in rural areas (labour supply) to migrate to get job in urban areas. Todaro (1992) wrote a theory on

migration model. His model assumes that migration is primarily an economic phenomenon which for the individual migrant can be a quite rational decision. Despite the existence of urban unemployment, the Todaro model postulates that migration proceeds in response to urban-rural differences in expected rather than actual earnings. Furthermore his work has the fundamental premise that the migrants consider the various labour market opportunities available to them, as between the rural and urban sectors, and chose the one which maximises their 'expected' gains from migration.

2.1.1. Push and pull factors of urbanization.

The acceleration of economic growth especially in urban area, leads a multiplier effects on other economic activities which basically open many opportunities. The opening opportunities in urban area attracts people from rural area to migrate to urban centre which is called urbanization. Basically there are two factors causing urbanization, 'push' factor from rural area and 'pull' factor from urban area.

The push factor is often related to high population growth in rural area which links to limited employment opportunities in agricultural sector. Population pressure on limited agricultural land causes several problems on its production and environment. When the agriculture were improved, modern agriculture technology produce more food but require less labour. Therefore it caused unemployment problems especially for landless farmers.

Subsistence agriculture activities are no longer interesting for young generation. Since education are improved in rural area, many children attend to school. But after past the school, most of the students are going to study in higher school or to get jobs in urban area. They are not return to their land to do agriculture because of limited land and less opportunities. Rural area have less opportunities of alternative jobs for educated young generation. Since insufficient rural infrastructures to support creating alternative jobs, low demand of local market and considering too far of regional market, and weakness of technological inputs and innovative design, such non-farm economic activities are difficult to be developed by young educated generation. Those conditions push them to migrate to urban area in order to challenge the opportunities to get job and to change their better life.

The pull factor of urban area is often related to high urban economic growth and image of better life. The high urban economic growth which is generated by industrialization, creates a multiplier effects on other activities such as trading, services, construction, etc. Those activities offer many job opportunities for the people. The image of better life is challenging for the rural people. Putten J.G. (1967) wrote that the migrant expects to find more permanent and rewarding employment in the urban area, better housing and health condition, and education for their children. The glory of the fantasy light of skyscrapers in the urban centre become a symbol of comfortable life.

2.1.2. Urbanization and conurbation.

Rapid growth of urban population caused by both natural growth and urbanization, accelerates the growth of urban area. Recently, the concentration of urban population spills over to sub-urban or neighbouring districts, this process is called conurbation process. A term 'Conurbation' was coined by Patrick Geddes to describe a large concentration of urban communities. Planners in Britain speak of 'the London conurbation' (Whittick in Encyclopedia of Urban Planning, 1974:295). A report on RUTRP (Rencana Umum Tata Ruang Perkotaan) or a general urban space plan, mentions that urban growth in big cities in Indonesia show a tendency of conurbation process. This report describes conurbation as a tendency of urban growth beyond its administrative boundary and shapes an agglomeration together with its expanded area in both physical and functional aspects (Directorate General Cipta Karya, Department Public Work, 1992).

The consequences of urbanization and conurbation process in an urban growth, can be explained in positive and negative impacts. Urbanization in positive view means a supply of labour force to generate the economic growth in urban industrialization process especially in early stage of a growing urban area. From the point of view of the migrants, urbanization is a transformation process from rural-traditional to urban-modern life. The migrants can develop their potential knowledge and skill to get better opportunities in urban area. Putten (1968:17) described that

> "Social change and economic growth in urban areas creates a perspective in which development is not just an increase of capacities and production, but the creation of new quality of life".

In addition the migrants can adapt new technology and urban facilities to improve their family life in rural areas, through several ways such as: create links to support their rural development, transfer of income, spread information and innovation, create market for agriculture products.

Urbanization on the other hand, has a negative impacts especially in developing countries. Putten (1968) explained that the conditions under which urbanization process occurs in the developing countries differ substantially from those under which the developed countries experienced their major urban growth. He had arguments that when in the 19th century industrial revolution in Europe and North America took place at relatively moderate place, industry and people settled in the most developed areas in growing nations which were favoured by world trade. Now, a great urbanization in developing countries is most intensive and rapid in areas where natural resources and infrastructure are underdeveloped and where the economic, technological resources, and human skills, are inadequate.

Those conditions in developing countries create problems as a negative consequences of a massive urbanization process. The most obvious impacts of this process are growing slum areas in urban centre, unemployment, inequality of urban services, and social problems. Furthermore the worst consequence is depletion of natural resources (water, soil) and pollution of environment in the urban area. Gaps between rich and poor household often creates some social problems.

Slums almost can be found in every urban areas in the developing countries. Geographers view urbanization from several aspects which are related to distribution, diffusion changing, and time and spatial aspects. Kantsebovskaya (1976) stated that:

> "Geography deals first and foremost with spatial aspects of urbanization, its purpose being to reveal its forms, geographic variants and types and the specific features of the particular course taken by urbanization under the impact of different social, economic and natural conditions." (quoted from Bintarto, 1983:12).

Social scientists have arrived at fairly broad agreement that a single pattern of urban densities is repeated in a large number of very different cities. This consensus of opinion has been summarized into a system of equations by Berry and Newling (Berry and Horton, 1970) , as follows:

Axiom 1: "The decline of population densities with distance from the city centre".

This axiom has been tested by Philip H. Rees[7] in Chicago. He rises a question "How well does this generalization fit the population pattern in Chicago?". Through several calculations and data representations, he arrived at a conclusion that the axiom the density of population declines exponentially at a constant rate with distance from the city centre is a fairly close approximation to the truth. Even beyond that point, the density at which people reside in continuously built-up suburbs continues to decline in the same fashion, but rural and small outlying town densities complicate the simplicity of the urban pattern.

Axiom 2: "The density gradient declines with time".

Winsborough[8] presents two series of population density gradients for Chicago between 1860 and 1950. His calculation were checked for several years later by the same method. He presented the data on the graphs and concluded that although the data are not completely comparable, it is clear that the total population density gradient does decline exponentially with time.

Those axioms are challenging to be tested in urban growth studies in developing countries. Those axioms and evident in Chicago is important to give a framework to understand the tendencies of urban growth and its population structure which seems happen also in Yogyakarta urban area. Since the limitation of time and data, this study is not focused to test those axioms.

2.2. Location Decision of Household Related to Income.

Migrants who move to urban area and chose to stay in certain part of the settlement area have to face a set of decisions with many considerations. This situation is also faced by new couple

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[7] He did for his study "The Factorial Ecology of Metropolitan Chicago (Master's thesis, University of Chicago, 1968), Appendix B.

[8] in Berry J.L. and Harton F.E. 1970, chapter 9 "The urban envelope: pattern and dynamics of population density".

married or new household. The different is that the migrants have to adapt with the new situation of urban area and need time to understand the people behaviour, the urban system, and the environment. Related to location choice of household, Berry (1970) wrote:

> "The inhabitants of the city are faced with a fundamental decision: where to life. The principal determinants of their choice of housing are three in number: the price of the dwelling unit (either rent or purchase price); the type of residence; and its location, both in terms of neighbourhood environment and in relation to place of work." p.311.

The first determinant, the price of the dwelling unit, reflects the household income. It shows how much his capability to pay the rent or the purchase of house. The price depends on the condition, size, environment, and location of the house. The price of the house has parallels in the attributes of land price which is closer to the centre higher of the price. Then the following determinants, type of residents and its location, are related to the housing they need which depend on marital status and family size; their life style preferences which will affect the type of neighbourhood; and their location of work which is related to daily transport to their work places.

Similar with Berry, Fujita (1989) considered three basic factors of location choice of the household: accessibility, space, and environmental amenities. According to him, accessibility includes both pecuniary and time costs associated with getting to and from work, shopping, recreation, and other social activities. The space factor consists of the need for some land as well as the size and quality of the house itself. The last factor is environmental amenities which more related to high level of household income. Household income is reflected the choice of the amenities include natural landscape and scenic beauty as well as neighbourhood characteristics ranging from social status to racial composition.

It can be concluded that the three determinants of location decision, both derived by Berry and by Fujita, are closely related to household income. Then the question can be raised how is the pattern of household income distribution in Yogyakarta urban area?. This question will be developed in chapter four and five.

2.3. Decentralization of Decision Making Related to Urban Infrastructure.

One of the major problems in urban agglomeration is insufficient of infrastructure to support urban activities. The urbanization process, an acceleration of urban population growth over the past two decades has already brought about a high concentration in urban centre. Slum area which is characterized by high population density and low income often can be found close to business areas in the centre.

The slum areas which is overloaded of their carrying capacity often lack of infrastructures such as clean water, sanitation, housing problems and drainage system. An encyclopedia of urban planning describes infrastructure as a term, widely used in planning, denoting the services and facilities which are an integral part of the life of an urban community. In a healthy urban

community such as infrastructure is geared to expand economic and social life (Whittick, 1974).

The conurbation process, an expansion of urban growth to surrounding sub-urban areas often not be followed by infrastructures development. Because of high land price and overcrowded in urban centre, some urban activities are shifting to sub-urban areas. The activities spills over to those areas where unplanned yet by local government. The government have budget constrain to develop infrastructures in sub-urban areas, so the investors and community who have activities in those areas have to provide infrastructures for themselves, certainly in Yogyakarta, Indonesia. The strain on basic urban infrastructure are not only caused by urbanization and conurbation process, but also from limited financial capacity and administrative management of central government to develop infrastructures at least parallel with urban growth. Recognising those shortcomings and considering economic and political situation, the government attempt to decentralize urban infrastructure provision.

Before we discuss in-depth on decentralization concepts, it is better to discuss centralization as a part of government strategy to lead the country. Centralization of government is common in most of the developing countries just after independence from colonial government during 1950s and 1960s. Rondinelli et all (1983:7) described that naturally the governments in the developing countries, first turned their attention to national-building and thus invested heavily in programmes of economic development. Both processes seem to require and legitimize centralized management. In a big country like Indonesia, centralization still remains in many aspects of government policies. Bosier (1978) wrote that centralization has a role to consolidate a national unity:

> "Perhaps of greater importance is the relationship between centralization and the national unity. Many of the developing countries are still in the nation-building stage, consolidation of this process requires a strong central power" p.40.

A great demand of decentralization has emerged during 1970s in some developing countries. It is because the development have been growing fast and because the demand of democratization and participation in the development have become more popular. Mawhood's recent survey (1987) goes further and say that governments are more interested in decentralization when they feel politically secure, yet also under economic pressure to mobilize local resources (quoted by Gasper 1991:16). Since the 1980s when Structural Adjustment Programme has been adopted and when oil price has decreased, centralization in some extent, such as urban infrastructure provision, is no longer effective. Then decentralization was promoted to improve the system. From the central government point of view, decentralization is to reduce over-loaded jobs and over-heated bureaucratic 'machine' systems. From the local government point of view, decentralization is to empower its capability to develop local resources with strategies of local interests and to tackle local problems.

Decentralization of government is the transfer of powers and responsibilities from central government (higher level authority) to local government (lower level authority) to formulate a

development plan, to make decisions, and to manage public function in order to serve local community. Robertson (1985) formulated in Dictionary of Politics that:

> "Decentralization denotes a process or situation in which powers and responsibilities are transferred from a central authority to other, usually more local, organs. The term can be employed in relation to the distribution of power between elected authorities and to the organization of the bureaucracy" p.79.

Rondinelli (1983) indicated that the concept of decentralization is broad and its component parts are many. According to him decentralization can be defined as the transfer of responsibility for planning, management and resources raising and allocation from central government and its agencies to: (a) field units of central government ministries or agencies, (b) subordinate units or levels of government, (c) semiautonomous public authorities or cooperations, or (e) non-governmental private or voluntary organizations. Some authors categorized decentralization into four types: deconcentration, delegation, devolution, and privatization (Rondinelli 1983, Gasper 1991). Gasper (1991:9), defined those terms as follow:

(1). Deconcentration - the handling over of some administrative authority or responsibility to lower territorial levels of central government ministries and agencies. Some authors call this 'field administration' or 'local administration', depending on the extent.

(2). Devolution - the creation or strengthening of sub-national governments whose activities are in larger part outside the direct control of the central government, thanks to a legal basis for local powers. This fits the position of states within a federation, and legally established and typically elected local governments. Some authors equate devolution and 'local government'; others use the latter term more broadly.

(3). Delegation - the transfer of managerial responsibility for specifically defined functions to parastatal organizations outside the regular bureaucratic structure.

(4). Privatization - the transfer from government of responsibility for specified function, to NGOs, voluntary organizations, community associations, or private enterprises.

This breakdown partly correlates with Hyden's 2x2 picture types of decentralization. A difference is that Hyden breaks Rondinelli's 'privatization' into two: transfer to NGOs etc. is called interest group representation, and only transfer to private enterprises is called privatization. Delegation would be another case of managerial functional decentralization (Gasper 1991).

Table 1

The Hyden's picture type of decentralization

	TERRITORIAL	FUNCTIONAL
MANAGERIAL	Deconcentration	Privatization
PARTICIPATORY	Devolution	Interest group representation

Source: Gasper 1991

Some authors defined the concepts of deconcentration as a separate one of decentralization. Hudson and Plum (1986) wrote:

> "...Central to our discussion are the concepts of 'deconcentration' and 'decentralization' and as the distinction between these is a crucial one, it is important to specify it at the outset"

Mawhood (1983:3-4) also distinguished the terms of decentralization and deconcentration. According to him, decentralization is taken to mean the sharing of part of the governmental power by a central ruling group with other groups, each having authority within a specific area of the state. The local share of allocating power is protected by formal as well as by normative rules which are accepted by the centre. While deconcentration, implies the sharing of power between members of the same ruling group having authority respectively in different areas of the state; political structures which essentially represent the interests of the central rulers and depend upon their support, functioning in areas away from the capital city; and units of local administration in which formal decision-making in exercised by central appointed officials.

Furthermore Mawhood (1983) draw a simple distinction between both terms in association with organizing principle, structures in with the principle dominates, and their practice. This distinction is presented in table 2.

Table 2

The distinction between deconcentration and decentralization

Associated with	Deconcentration	Decentralization
Organizing principle	Deconcentration (French writers)	Decentralization (French writers)
	Deconcentration (UN report)	Devolution (UN report)
	Bureaucratic decentralization (administrative)	Democratic decentralization (political)
Structures in with the principle dominates	Field administration	Local government
	Regional administration	Local-self government
	Perfectoral administration	Municipal administration
Practice	Delegation of powers	Devolution of powers

Source: Mawhood (1983)

It can be distinguished that by political, decentralization is related with more democratic and popular participation in decision-making; while deconcentration is related with bureaucratic and administrative decentralization. Deconcentration refers to the transfer of functions, not powers, to local government organization. Those are may be newly set up or may be already functioning organizations which should serving to local needs and achieving to government's

objectives. Rondinelli (1981) mentioned that, the least form of decentralization is deconcentration. At one extreme this merely involves the shifting of workload from central government ministry headquarters to staff located in offices outside the national capital, and the staff may not be given the authority to decide how those functions are to be performed.

However, deconcentration is simply the administration of the periphery by the use of officials in the outposts. It can have its merits, of a type, of regimented efficiency but it could also be totally unresponsive to local needs and aspirations. This was focused, for instance, in the classic distinction made by commentators between law and order administration and development administration.

Decentralization and deconcentration are also formulated by Government of Indonesia in order to operate those concepts in the development policies. In the Laws no 5/1974 about Autonomy and Local Government, the formulation originally in Indonesian language and be translated as follows:

> "Desentralisasi adalah penyebaran urusan pemerintah dari pemerintah pusat atau pemerintah daerah tingkat atasnya kepada daerah untuk menjadi urusan rumahtangganya sendiri. (Decentralization is a distribution of government affairs from central government or higher local government to local government for their home affairs)".
>
> "Dekonsentrasi adalah pelimpahan wewenang dari pemerintah atau kepala wilayah instansi vertikal tingkat atasannya kepada pejabat-pejabatnya di daerah. (Deconcentration is a transfer of responsibility from higher government or head of vertical branch of institution/department to their local officers)".

Decentralization is not the opposite of centralization (Smith, 1985; Helmsing, 1991). Decentralization has a positive side which is associated with a wide range of economic, social and political objectives. Economically, decentralization is said to improve the efficiency with which demands for locally provided services are expressed and public goods provided (Shepard, 1975, quoted by Smith, 1985:4). Socially, decentralization is advocated as an approach to enlarge community participation, to develop local resources with local interests, and to solve the problems with local characteristics. Smith (1985:5) wrote that politically, decentralization is said to strengthen accountability, political skills and national integration. It basically brings democratization close to the reality and brings the government closer to the people.

Decentralization is not without critics and limitations. Mawhood (1983:1) criticized that in some developing countries, decentralized structures of administration that only act as a more effective tool for centralizing the power; regional and district committees in which local government official make decisions while the local representatives sit silent; village councils where local people participate but have no resources to allocate. It is quite clear that the local

representatives have no capability to analyze the technical and managerial system of urban infrastructure. In some cases, the local representatives is lack of power and less initiative than the local government.

The limitations of decentralization in practice is not only by the representatives, but also the local government capacity in term of manpower, financial resources, and the technical demands in certain activities. Furthermore, Gasper (1991) observed in the case of decentralization of planning and administration in Zimbabwe that the issue is more than technical. He wrote that national policy-makers appear at present unwilling to transfer substantial powers and there are well established central ministries and strong beliefs in centralized planning, including in the Local Government Ministry.

The successful decentralization much depends on the particular authority-specific context. It is not a singular process of change, but also often as a partial response to a multiple of external and internal, macro and micro, induced the process. The Integrated Urban Infrastructure Development Programme as a decentralized infrastructure provision in Indonesia is challenging to be studied. In this study, a concept of decentralization and deconcentration which were formulated by Indonesian government will be employed to asses the IUIDP programme.

CHAPTER THREE
GOVERNMENT POLICIES ON URBAN DEVELOPMENT: THE INTEGRATED URBAN INFRASTRUCTURE DEVELOPMENT PROGRAMME

This chapter explains the government Policies on Urban Development in national development policies and in the context of the implementation of IUIDP programme in Yogyakarta Urban Development Project. The last part of this chapter attempts to analyze those policies.

3.1. Government Policies on Urban Development: The IUIDP Programme

3.1.1. An overview of urban policies.

The main report on National Urban Development Strategy (NUDS) was published in September 1985 and the Integrated Urban Infrastructure Development Programme was initiated in line with NUDS and was based on the earlier experiences gained by Kampung Improvement Programme (KIP) - the first large scale integrated infrastructure provision programme at neighbourhood level. The IUIDP programme realizes the year 2000 urban development strategy and expands the KIP approach into an urban agglomeration development and urban infrastructure programme.

The IUIDP programme was intended to overcome the following problems:

(1) centrally administered provision does not always reflect local needs sufficiently, and is often inadequately operated and maintained by local government (and local communities).

(2) infrastructure programmes of central, provincial and local government show much duplication of efforts, hence resulting in an inefficient use of limited resources.

(3) over dependence on central government grant funding for many elements of urban infrastructure which could to a larger degree be self-financing (Padmopranoto 1987, Suselo 1987, and Hoff and Steinberg 1992).

According to The Coordinating Team of Urban Development 1987, the basic principles of the IUIDP are functional decentralization and/or deconcentration of planning and programme development, integration of physical programmes, and integration of financial resources between Central and Local Government (see appendix 3 and 4). The goals expected to be achieved over the next 5 - 10 years through these efforts can be formulated as follows:

(a) effective decentralization of urban infrastructure planning, implementation and operation;

(b) the strengthening of Local Government's responsibility for financing urban infrastructure;

(c) the strengthening of Local Government's capabilities to carry out these responsibilities.

The idea of urban development strategy through the IUIDP programme gives more

responsibility to local government to fulfil their demand by developing local resources. Eventhough the concept is to strengthen the capacity and to give the responsibility to local government, but in reality it is very difficult to be implemented and to be spread (to be replicated). The dependency of local government to central government seems still dominates the implementation of IUIDP concept. Robert van der Hoff and Florian Steiberg[9] have an observation that:

> "Though now, with the IUIDP, urban infrastructure is becoming a local government responsibility, central government's resources contributions (matching funds) are still very dominant. Also, in the field of physical project implementation, local governments have the capacity to implement only small scale projects. For either larger or more complicated projects, for which they will need to attract or hire skilled staff, local governments will depend largely on the ability to mobilize or control the necessary final resources". (p 3).

This statement is related to the fact that the policies on urban development were produced at central level by a committee consists of central government or department bodies. The policies of urban development in Indonesia which was produced by The Management Team of Urban Development in 1987, focuses on the following areas:

Policy 1: Development of urban infrastructure and the operational and maintenance thereof, in principle, is within the authority and responsibility of the Local Governments, with the assistance and guidance of the Provincial and Central Governments.

Policy 2: Planning, programming and identification of investment priorities by all levels of Government for urban development will continue to be improved by meas of a decentralized and integrated approach which, among others, has already started through the IUIDP system.

Policy 3: In order to develop Local Government responsibility for providing urban infrastructure services, there will be further strengthening of the Local Government's capability to mobilize resources and optimize the use of funds.

Policy 4: In accordance with the principle of decentralization of urban infrastructure responsibilities, the government will, in addition to the measures described under policy 3, endeavour to improve the financing system for urban infrastructure systems. The purpose of the improvements would be to: (a) strengthen Central-Local Government borrowing scheme for Local Government urban infrastructure investment needs, and (b) provide incentives for local resource mobilization and borrowing.

Policy 5: The capability of Provincial and Local Governments staff and institutions to execute urban development activities more effectively in the context of strengthening their roles and responsibilities will be enhanced by institutional development procedural

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[9] Two foreign experts who assist IUIDP as consultants and trainers. They work closely with Indonesian decision-makers on IUIDP and they also edited a book IHS study related to IUIDP, 'Innovative Approach to Urban Management, 1992'.

improvement, where appropriate, as well as training to be provided by means of a coordinated programme of local government manpower development.

Policy 6: Coordination and consultation between the various agencies and levels of Government (Central, Provincial and Local) involved in the development of urban infrastructure and services will continue to be strengthened for the smooth implementation of development activities and to provide a mechanism for review and formulation of future sector policy recommendations.

The analysis of those policies will be presented in the last part of this chapter, after we discuss several emerging issues and a review of the IUIDP programme in Yogyakarta Urban Development Project.

3.1.2. The IUIDP Programme: its origin and how it works.

The government initiated urban development under the "Basic need strategies" approach after experienced by the "Comprehensive urban planning" approach[10]. Sidabutar (1992) criticised the "Comprehensive urban planning" that this approach has proved ineffective to control and to manage rapid urban growth. It is because institutionally there were insufficient numbers of trained personnel to prepare and to execute the master plan, no strong enforcement of regulations to achieve the implementation of the policy and the plan, and weakness of financial analysis and offered no explanation of the source of funds to finance the programmes. Regarding to the master plan, it was too broad and not directed to programme implementation. In addition the plan did not address many real urban problems.

Under the "basic need strategies", Kampung improvement programme (KIP) was initiated in 1969 in Jakarta. This programme addressed the problems of slum areas through improving the provision of water supply, sanitation facilities, garbage management, drainage channel, and low income housing. This programme was considered appropriate and successful to improve slum areas, thus KIP programme was replicated in other urban areas in other provinces by central government supports as well as the international agencies in financial supports. This approach was reviewed by Sidabutar:

> "Although the basic need strategy has to some extent addressed the problems of the slum areas, it has some shortcomings in its planning and implementation stages. The strategy was prepared without considering city-wide perspectives of urban services development. For example, local drainage system must be connected to city drainage systems; otherwise, improvement in local flood drainage might create flooding for other areas outside the KIP areas" (p.19)."

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[10] "A comprehensive approach was designed to control the rapid urban population and to establish an urban form and function that could accommodate the increasing urban population mainly in large cities. The product of this approach was known as "Master plan" and it emphasized the physical form and zoning cities, not their management or dynamic evolution" (Sidabutar, 1992:p 18).

Then KIP programme was expanded in the context of urban area which is called "Urban project" approach. This approach basically combined and formulated the "Comprehensive urban planning" and "Basic need strategies" approaches. Under the framework of urban project, the government initiated pilot projects in Bandung (Java) and in Medan (Sumatra) to apply urban studies with new approach. Sidabutar explained that these studies were providing a comprehensive spatial perspective as a basis for the formulation of programmes. These studies were followed by feasibility studies for the provision of sectoral infrastructure in urban service.

Those pilot projects and NUDS study are reshaping the urban policies to new approach. In 1984, the government through the Directorate General of Human Settlement of the Ministry of Public Works, formulated a new approach to urban development which is called the "Integrated Urban Development Programme" (Ministry of Public Work 1984 quoted by Sidabutar 1992). Through several process of coordination and negotiation with other central government bodies: BAPPENAS (National Development Planning Agency), the Ministry of Home Affairs, the Ministry of Finance and other foreign funding agencies such as the World Bank and the Asian Development Bank, has launched the IUIDP and the policies for urban development. The urban development policies were released by the Coordination Team for Urban Development and was signed by the Chairperson of BAPPENAS in 1987.

The IUIDP was implemented in early 1986, just after the finishing NUDS study. While there are some variations of how the IUIDP works, here are the steps in the ideal process:

The first step: Everything begins with meetings at the provincial level. Provincial staffs review the output of the National Urban Development Strategy for the province, including infrastructure standards, staging and costing assumption, and adjustments are made as appropriate. Working relationships are established and cities within the province are prioritized for action.

The second step: Similar meetings are held with staff in the individual cities that have been selected. National strategy outputs are reviewed and adjusted to better reflect local judgements on comparative priorities, across and within sectors, and standards. Then a work plan is developed. This addresses the linking of training with on going project work in the locality and often requires consideration of methods of supplementing local government staff and equipment.

The third step: Project teams of local staff with technical assistance provided from the centre then review and update an existing local land use plan. If the local land use plan is not available, a new 'structure plan' will be developed. The new plan indicates broad magnitudes of expected growth of urban agglomeration and basic pattern of infrastructure and transportation network.

The fourth step: Infrastructure projects are next identified, scooped and costed. They are then staged and assembled to create a three-year capital budget for the city. Rolling budgets

are anticipated thereafter, with plans for years two and three being adjusted, and a plan for year four added, as work under the year one plan is being compelled. IUIDP also requires explicit consideration of capital maintenance requirements and arrangements for ongoing operations as a part of capital budgeting.

The five step: The IUIDP then requires the teams to prepare a complete financing plan covering all potential sources of founds. The plan must indicate and allocate expected local revenues, develop a borrowing strategy, and consider amounts that may be needed from the central budget and/or external donors. This step forces the city to think through a strategy for local revenue enhancement over the longer term. Individual city programmes so defined are then reviewed and adjusted at the province level and a combined provincial submission is prepared for review at the central level. One of the important tasks at the centre is packaging projects in a manner suitable for support by external donors (quoted from kingsley, 1989).

It seems that conceptually the IUIDP programme as a new urban development approach has been shifted from sectorally and centrally approach to integration and 'combination' (central and local as well as top-down and bottoming-up) approaches. A diagram comparison of the programme preparation and implementation before and under the IUIDP shows that changing or shifting paradigm (see in appendix 5).

3.1.3. The emerging issues

Since NUDS study was formulated, the IUIDP programme was initiated, and urban development policies were decided in the middle of 1980s, more then 150 PJM or multi-year investment programmes of local governments were approved or in preparation. The first round of the planning stage of the programme will be completed within the current Five Year Plan. Moreover, a very considerable volume of investment will be realized on the ground in construction projects during this period (Ross and Suselo, 1992).

Beside the IUIDP programme as an effort to develop urban area under urban development policies, the Minister of Population and Environment launch an urban development prize which is called 'Adipura prize'. Adipura , an annual prize, is given to honour the efforts of local government and citizen to develop their cities in environmentally sound and in the direction of sustainable development. Adipura is part of an indicator of successful of leadership of Bupati or Walikota (head of local government Tk II) and participation of the community in developing their settlement and urban area. Eventhough Adipura is not part of the IUIDP programme or vice versa, those programme can be considered as a multi-programme of urban development among ministries department in central government and local government.

Reflection of the policy implementation is important to review several emerging issues

during the on going implementation of the IUIDP programme. There are several issues in the IUIDP development as identified by Hoff and Steinberg (1992): urban management and training, local resources mobilization, public-private partnership, and community participation.

Urban management have been evolving recently by the introduction of the IUIDP concept. It is a concern, stronger than ever before, for management as a process of interventions involving negotiations and 'Musyawarah-Mufakat' (a local word of deliberation-consensus building) between territorial and functional organizations, between local government and central government, and the involvement of public participation. According to Hoff and Steinberg (1992), present efforts in urban management in Indonesia can be seen in three interrelated areas:

- Innovative projects and urban development policies in the framework of decentralization: action oriented planning with political and participatory support.
- Strengthening of institutional capacities and institutional change; reform of legal conditions and administrative procedures, reform of financial management and land management.
- Supportive manpower development through training, information and communication programme.

Hoff and Steinberg's observations are challenging to be explored further; whether those points are still hang up as a concept or already exist in the reality. Let starts with the third point on human development through training, information and communication programme.

Human resources development under the IUIDP programme is noticed as a progressive achievement. More than 250 selected government staffs (local, provincial, and central government) and few NGO and private sector have been trained in IHS Rotterdam[11], thousands urban actors (community, NGO, private, and public organizations) also have been trained in Indonesia, both in central and provincial training centres. It seems that they prepared to implement the IUIDP concept and to transform 'new urban management'. Beside the successful training programmes, we have to mention that strengthening of institutional capacity and institutional changes is still difficult to be transformed in the 'new urban management'. Therein bureaucratic system is very important to run 'new urban management'. Meanwhile the decentralization process, action oriented planning with local political and participatory support, still behind the target. In reality the IUIDP implementation in many cases is still dependent on foreign assistance (technical and financial) and central government supports (bureaucracy, financial and political aspects).

The next emerging issue in local resources mobilization. Local resources mobilization is related to local government financial management to collect revenue and to allocate budget more

[11] IHS, Institute for Housing and Urban Development Studies, a leading institute which has attention of that field in developing countries.

adequately. Tax reformation have been launched in 1983, but its implementation was delayed until 1988 because of several administrative problems (Simanjuntak, 1989). Recently, the tax revenue is considered a main sources of government revenue beside oil and non oil and gas export revenues.

Local government (Tk II) has own resources which derive from four main resources: taxes, charges or retribution, profits of public enterprises (such as PDAM), miscellaneous (including departmental) income, and land property tax (Devas, 1980). Beside own resources, the source of finance especially for public infrastructure and services come from: (1) central-local transfers (including grants for capital investment and routine expenditure, and central government revenues assigned wholly or in part to regional government, (2) regional government's own, locally generated revenue, including income from local taxes and user charges, and (3) loans to regional governments (Bastin and Hidayat, 1992). Related to this issue, Devas (1989) developed a diagram of financial flows for urban sector: public sector and community contributions (appendix 6) [12].

Presently local government revenues provide only about 5-15% of the funding needed for all local development activities; central grants and transfer to local governments make up for the reminder (Hoff and Steinberg, 1992). It shows that local government share in current and capital expenditure in local development activities is considered lower compare with other selected Third World Countries: Kenya, Tanzania, and Uganda[13]. Under the IUIDP framework, local government revenue will be generated to expected target to at least double local participation to 20-30% next five years.

RIAP, Revenue Improvement Action Plan, be developed to improve local government revenue. Related to infrastructure development, land and property tax is the most important local tax base. The price of land and property are increasing significantly with the development of infrastructure. So that it is reasonable to increase tax value in area where the IUIDP projects were implemented. Therewith that, improvement of local government capability to collect tax and improvement of its management (including administration) are very important. Beside land and property tax, other resources mobilization came from profits generated by public enterprises, involvement of private sector in public investment and running urban services, and involvement of community participation.

Public-private partnership is one of the emerging issue in urban development, especially after 'marathon' of deregulation under Structural Adjustment Programme since 1983. Private sector has been seen as potential actor to develop urban services. Suselo and Taylor (1992) give arguments or rationality of an increasing role for the private sector as follows:

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[12] Several landmark studies of Indonesia's system of local government and urban development finance have been elaborated by Institute of Local Government Studies, University of Birmingham, United Kingdom.

[13] Helmsing 1991 analyzed local government finance in Zimbabwe and compared Zimbabwe case with other Third World Countries.

- The government alone is not sufficient to provide urban services in high urban population increases with an annual urban growth of 4%. Therefore the mobilization of private sector in financing urban services is needed.
- Many urban areas are not currently being provided by the public sector. Hence, the private sector can in some instances fulfil unmet needs without taking responsibilities away from government.
- The private sector can offer consumers greater choice and provide services more flexible.
- The private sector promotes competition and encourage a more entrepreneurial approach to national development.
- It is presumed that private sector participation will lead to increased operational efficiency.

Beside explaining the five rationalities, they also give current examples of private sector participation in urban development in Indonesia. They start with the statement of the chairman of BAPPENAS devoted an important address of this approach ".... we are looking increasingly to the private sector to finance and operate physical infrastructure and to upgrade skills". This statement have been followed up by several deregulations to invite private sector involvement in public services such as water supply, toll road, real estate and low cost housing, even new town development.

Some public and private partnership actually have been applied in several urban areas to build infrastructure and to provide urban services; from a group of conglomerates which has concession to develop new town 'Bumi Serpong Damai' with thousand housings, to informal-small scale sector which is providing local material for building. According to Mitchael-Weaver and Manning, PPP is "primarily a set of institutional relationships between the government and various actors in the private sector and civil society". Furthermore they focused the term 'partnerships' and interpreted the term as 'several parties have combined forces to define and/or accomplish one objective. It requires a joint government-private sector operation, with both side involved in planning, building, operating the project or implementing the agreed policies" (quoted from Nordhold, 1993).

Since the government institution in the IUIDP has a wide range of government agencies, the relationship and partnership in the PPP concept is rather complicated. Overlapping responsibilities and different interests among different departments and among different levels often happen in negotiation process (Schiller in Nordhold, 1993). After reviewing Schiller's analysis and conclusions of the distinction of 8 group actors within PPP[14], Nordhold criticize him

[14] Schiller analyses for each of 8 groups of actors, the potential costs of participation within PPP. He then concludes that only if the expected benefits, for each actors, are higher than calculated costs will that actors participate in PPP (Nardhold, 1993).

of ignoring the DPRD (regional parliament) and does questioning the PPP programme. If the benefits among 'actors' are unequal or little to do with economic profits, will the actors participate in PPP. He also questioning the private companies established by Department of Public Work "who is public and who is private".

The role of community participation in urban development has been considered in a strategic sense. Fritschi et.al (1992) mentioned one of the ideas behind decentralization is that the real needs of the community can be better understood by local government. The assumption is that there is active consultation and dialogue between local government and its community. Therefore the next logical progression in decentralization calls for greater community participation in planning and programming of urban development.

Community participation has been stated in several law, regulations and policies; such as law no 4 of 1982 on the Environment article 6(1) "everybody has the right and obligation to participate in environmental management"; regulation no 9 of 1982 (Permendagri) aims at increasing the effectiveness of development by emphasising the importance of the "bottom-up" planning approach recognizing that people generally known best what is best for them. Though statements are an example of legal basis of community participation in which some successful experiences have been achieved, the general tendency is still to concentrate on obligations (top down approach, considering the community as an object) rather than on rights. In the other cases of development projects, community participation also concentrated often only on implementation and maintenance, rather than on planning and its preceding activities (Fritschi et.al, 1992). Looking through the Policies of Urban Development produced by the Management Team of Urban Management in 1987 and in the present IUIDP approach, community participation is not yet stated explicitly in the decentralization, the integration and the "bottom-up" strategies. As indicated by Fritschi et.al:

> "In the present IUIDP approach the "bottom-up" element is not yet defined as more involvement of the community at the lowest level. Instead it means more involvement of the local (Tk II) government and agencies". (p.154)

This statement reflects that a room for community participation still does not exist in urban development process. If there is no clear role of community participation in planning and decision making, then decentralization process have to be questioned "decentralization by whom and for whom?". Before we discuss decentralization process, we have to know how those policies at central level be implemented in a case of Yogyakarta".

3.2. The IUIDP Programme in Yogyakarta Urban Development Project.

3.2.1. An overview of the strategy of YUDP Project.

The concept of YUDP project under the Integrated Urban Infrastructure Development Programme, is basically emphasis more on decentralization: a delegation of responsibility to local

government to make planning, financing, implementation, operation and maintenance of urban infrastructures and services. The strategy of YUDP is directed to achieve three targets to anticipate growth, ready to face changing, and to conserve special assets.

(a) To anticipate growth: Spatial configuration of YUDP is aimed to hold and to anticipate population growth and urban activities related to economic development.

(b) Ready to face changing: Spatial configuration of YUDP is formulated to adapt the changing which exist during the development. The changing are related with urban functions, community aspirations, standard of life, and innovation of technology.

(c) To conserve special assets: Special assets related to history, traditional culture, architecture, and environmental and green zone, have to be conserved and be developed as their characters.

Those targets are interesting formulations. The first target is already considering a rapid urbanization and conurbation process in a spatial development framework. The second responds the dynamic trend of development and formulates more clearly and explicitly community aspirations and other interesting issues. The third is the strongest targets which is considering local and special assets in Yogyakarta. Then the next question should be exposed "how are those targets reflected in the urban development policies and strategies in Yogyakarta?".

Policies and strategies for urban development in Yogyakarta is based on RUTRK (Rencana Umum Tata Ruang Perkotaan) and is arranged for 1990 - 2005. Formulation of policies and strategies are as follows:

Policy 1: Spatial development: YUDP is divided into two spatial development; urban area and green zone. Special attention will be focused on environmental development.

Strategy 1: Spatial configuration of urban development gives different functions between Yogya, the seven sub-districts centres (Sleman and Bantul), and the five new economic development zones.

Policy 2: Population development: Population development will be concentrated on Yogya and the seven sub-districts.

Strategy 2: Population development should be adsorbed by kalurahan which is increasing its population. But relocation of over populated area in green belt zone have to be tackled.

Policy 3: Economic development: Economic development will be supported by economic development zone in city centre of Yogya and in the five strategic location in ring road.

Strategy 3: Economic zone in Yogyakarta and other five economic zones should be considered for main economic activities development such as: tourism, education centre, manufacture and other related economic sectors.

Policy 4: Infrastructure Development: Infrastructure development will follows spatial pattern plan in urban region which hold population growth and in economic development zone.

Strategy 4: Settlement in urban areas(NUDS) should make use of infrastructure programmes such as water supply, sanitation, garbage management, KIP and MIIP. Regarding a growing settlement centres, those programmes should be completed with road network and drainage system development. In the economic zone, the programmes necessary to be concentrated on road network, drainage system, sewerage system, garbage management and clean water supply.

Following through those formulations, we can easily recognized that spatial development, population development, economic development, and infrastructure development, are the main focuses of those policies and strategies. If we relate those policies formulation and the three targets, than we found that several aspects are not explicitly stated. It is perhaps those policies are based on RUTRP - a general urban area plan.

In order to explore the policies which is reflected in the IUIDP programme in Yogyakarta, we have to go in detail through formulations of the programmes which is called PJM (Program Jangka Menengah or Multi-Years Investment Programme).

5.2.2. The IUIDP Programme in Yogyakarta: A Multi Years Investment Programmes.

The integration of planning and programming of IUIDP is presented in a Multi-Year Investment Plan (Program Jangka Menengah or PJM) which covers 5 years period. Ideally local government start with the preparation of an IUIDP Development Assessment Plan (IDAP) as a long term spatial reference for the subsequent multi-year infrastructure investment plan. Since IUIDP programme is still a new programming and implementation approach, this programme in Yogyakarta formulation process remains to be supported by technical assistance (TA) consultants: EWI-Electrowatt Engineering Services LTD (Switzerland) in association with Hasfarm Dian Consultant (Indonesia).

This Multi-Year Investment Programme relates population trends, strategic urban decisions, infrastructure needs and prioritized inter-sectoral infrastructure development projects. The Multi-Year Investment Programme includes technical, environmental and financial feasibility studies and financial and economic justifications - based on the principle of affordibility - of the sub projects as well as of the overall programme. In addition the 'thick and heavy' Multi-Year Investment Programme estimates the resources requirements, draws up a municipal Revenue Improvement Action Plan (RIAP) and a Local Institutional Development Action Plan (LIDAP) for the implementation of the infrastructure development programme.

The relationship between urban development strategy (NUDS), revenue improvement action plan (RIAP), local institutional improvement action plan (LIDAP), and the Multi-Year

Investment Programme can be seen in appendix 7.

A. The Programme.

The IUIDP covers eight major urban infrastructures which are implemented under the Directorate General of Human Settlement in the Ministry of Public Works. The eight major urban infrastructures are:

- spatial urban development
- water supply
- sewerage, human waste (sanitation)
- solid waste management (garbage)
- drainage, flood control
- urban roads
- housing (Kampung Improvement Programme
- MIIP (Market Infrastructure Improvement Programme)

Looking through YUDP documents, they are professionally formulated and excellent documented. The objectives, targets, and programmes as well as budget planning and institutions which execute the programmes are clearly stated. Every programmes has a feasibility study as well as financial appraisal. The detail descriptions of those programmes (in a summary) are attached in appendix 8.

Those programmes mainly formulated by technical assistance consultants with some discussion with local government (the three Bappeda Tk II and other related dinas). Eventhough the strategy of YUDP project is such a stimulation and in-job training for local government staffs to formulate the programme, but the most of ideas and formulations are produced by consultants. The involvement of community participation seems still far behind, but we have to notice that the involvement of NGO (Yayasan Dian Desa) is already exist in formulating the real demand in Yogyakarta urban area.

There are other urban infrastructures which are not provided by the IUIDP programmes, such as telecommunication and electricity. Telecommunication is provided by PT Telcom - a state enterprises for telecommunication under the Ministry of Tourism and Telecommunication. Electricity is provided by PLN (Perusahaan Listrik Negara) - a state company for electricity under the Ministry of Mining and Energy. Those types of urban infrastructure are often repairing their old network and developing their new network separately from the integration programme of urban infrastructure under the IUIDP.

Those different schemes of urban infrastructure development often cause a problem which is popularly called "Gali lobang tutup lobang" or "Dig hole and fill hole", a ridicule term of disintegration projects in urban infrastructure development. This problem mainly because of lack

of coordination and different financial schemes. Before we discuss this issue further, we have to know the financial and institutional aspects of the IUIDP programme in Yogyakarta.

B. RIAP (Revenue Improvement Action Plan).

Revenue as a source of development funds is very important to recognize the capability of local government to implement the programmes. In the context of decentralization, local revenue reflects the capacity of local government to develop local resources. Local genuine revenue is collected from taxes, retribution, benefits from local-public enterprises, and revenue from local government services. In YUDP at least 10 type of taxes and 21 retribution. In 1990/91 tax revenue in YUDP is Rp 3,724 million and retribution is Rp 3,477 million and others are Rp 1,130 million, so the total is 8,331 million. This revenue is predicted will increase by 28% per year (with annual inflation less than 10%).

Revenue sharing (local and central) from land and building tax is considered as a source of local revenue. In 1990/91 land and tax building in YUDP is around Rp 3,926 million, 65% of this revenue is revenue sharing for local government of YUDP (Yogya, Sleman, and Bantul) or around Rp 2,574 million. The revenue from land and building tax is not optimal yet, because efficiency to collect this tax is still low or around 60% - 79% and the cadastral maps is out of date.

Routine expenditure of local government consist of staff salary, office tools and materials, maintenance and other expenditure related to daily operation of local government. The balance between genuine revenue and routine expenditure shows a deficit financing. This deficit have to be subsidized by central government. The genuine revenue in every TK II shows that in Yogya is 72%-84% of routine expenditure, in Sleman is 50%-71% and in Bantul is only 41%-56%.

Netto saving of local government is a remaining fund from routine revenue (including subsidy) minus routine expenditure.This remaining fund is important to know the capacity of local government to invest in planning and to know capacity to adsorb loans. Netto saving in Yogya is projected Rp 2,690 million in 1992/93 and Rp 7,230 million in 1996/97 with annual growth 28%. In Sleman and Bantul, the annual growth is projected 50% and 38%. Only part of netto saving in Sleman and Bantul will be invested in YUDP, because not all Kecamatan in both regencies are part of YUDP.

The netto saving can be used as financial assistant to get loans. According to the rule of loan, debt coverage ratio (DSR) is 1.5. It means that the netto saving at least 1.5 times of repayment and interest of loan or debt service. The capacity to adsorb loan of Yogya during five years is around Rp 23.300 million and around 35% of this loan or Rp 8.100 million for YUDP. The maximum loan of Sleman during five years is around Rp 12.600 million and 11% of this loan can be used for YUDP. Whereas Bantul is around Rp 11,800 million and only 6 million of this loan can be used for YUDP. The interest of the loan is 10.5% with time of repayment is 15 years plus 3 years extension.

The multi-years investment programme needs an investment around Rp 120,200 million for five years. All netto saving and loans are not enough to cover this programme. The deficit is around Rp 36,300 million. To implement YUDP this deficit should be covered by other sources from provincial and central governments (APBN, Inpres, and APBD I). APBN (national budget), Inpres (Presidential Instruction), and APBD I (Provincial budget) are grants from central and provincial government to local government Tk II: Municipalities and Regencies (see appendix 9).

Not all the budget (netto saving, loans, grants) will be invested in YUDP. It is because beside YUDP there are several other projects (non-YUDP) and because only part of Sleman 37% of its population and part of Bantul 23% of it population are covered by YUDP. For Yogya the proportion of the budget for YUDP is around 42%. In order to improve revenue of local governments to cover their budgets for urban development, The YUDP management team set up a programme which is called RIAP - Revenue Improvement Action Plan. This programme has objective to improve capacity of local governments (Yogya, Sleman, Bantul) to increase revenue from tax, retribution, and other sources. To achieve this objective, it is important to focus on several strategic aspects:

- To review existing rules on taxation and retribution.
- To appraise potential receiving and to fix realistic receiving targets.
- To appraise system and procedure to identify the source of taxes, to register the source of taxes, to appraise, to collect and to monitor the taxes.
- To formulate action plan to achieve the targets.

Further households unit direct or indirect has a major contribution local government revenue. Households contribute mainly in land and building tax and other local genuine revenues such as water charges, parking fee, garbage services fee, and neighbourhood development fund contributions. Based on this argument, household income should be considered in collecting revenue as well as in decision making in investment of urban infrastructure.

C. LIDAP (Local Institution Development Action Plan).

The existing institutions for urban development is insufficient to manage the multi year plan of YUDP project. In order to improve this institution, YUDP project proposed a local institutional development action plan (LIDAP) which have a main objective to strengthen and to guarantee both government and community institutions to operate and to maintain urban facilities and services.

Basically LIDAP is a 'rolling plan' which means that the improvement of institution is not one short time, but a process which is parallel with the improvement programme. LIDAP focuses on institution and organization which have roles and functions to prepare, to implement, and to monitor the PJM (multi-year plan). There are four categories of urban development institutions:

- Local government management: are Yogya municipality, Sleman and Bantul regencies. Those institutions have responsibility to make planning, programming and budgeting.
- Inter-local government management: are government institutions, permanent or temperer, which have responsibility to coordinate and to integrate the development programme of the three local governments in Yogyakarta urban region.
- Sectoral management: are local government institutions which have responsible on sectoral development for urban development (water supply, drainage, sanitation, etc).
- Community organization: are community organizations, formal or informal in Yogyakarta, which are covered by the development programme. Those organizations are expected to participate in urban development.

LIDAP explores the three key aspects of each institutions: functional distribution and structural organization, system and procedures, and human resources/staffing. Further LIDAP also stated clearly the role of community organization in urban development. Such statement is very important to give a room for community participation. Further community participation should not only stated in progmanne but also in urban development policies and strategies.

Public service in urban region is organized by several institutions. There are three concept of public service management: (1) deconcentration: a public service provided by central government, (2) decentralization which is a public service provided by local government, and (3) co-administration which is a public service provided by local government under central government extension. The integration of the three concept is organized by the head of local governments: Walikota (Mayor of Yogya municipality) and Bupati (the head of District of Sleman and Bantul). The head of local government is helped by BAPPEDA (Local Governnment Planing Agency), SEKWILDA (Local Governnment Secretariat), and Inspectorate. The functional line of sectoral projects including implementation, operation and maintenance , is implemented by 'dinas' or sectoral offices in local government (like departments in central government). In order to adsorb community aspirations and to legalize the programme, DPRD TK II (Local House of Representative) acts to represent the community and makes the rules to guide the development (see appendix 10 and appendix 11).

The main task of BAPPEDA is to help the Mayor or the Head of local government in planning and evaluation of development. The BAPPEDA is responsible to produce: (1) the basic pattern of regional development, (2) the five years development plan, (3) the one year development programme, and (4) the one year budget development plan. Whereas SEKWILDA has a main tasks to coordinate implementation of the development programme of the dinas and the Inspectorate has a main tasks to monitor and to evaluate the development programme.

In order to coordinate the development programme of the three local government under YUDP 'umbrella', a solid institution have to be founded. This is the challenge of YUDP which

have been faced since January 1989 when YUDP was started. YUDP project mainly run under Department of Public Work and Swiss Development Cooperation and its consulting team are only temporary institution to help the three local government to integrate their development programme of YUDP.

Under the decree of Governor of DIY no 19/TIM/ 1991, an organization structure IUIDP-YUDP was founded. The head of BAPPEDA TK I and the head of regional office of Department of Public Work are the head and the vice head of YUDP Steering Committee. This committee has a responsible to lead all the policies for YUDP province and to legalize the medium term projects, annual programmes, and guidelines for institutional and financial aspect in YUDP. A technical team was also founded for providing special technical guidance for IUIDP in general and YUDP in specific. In local government level II, a steering committee and technical committee is also founded in Yogya, Sleman, and Bantul. The main important of this structure is a joint secretariat which runs daily works and to assist the consulting team.

Such RIAP plan and job description in LIDAP is already clear and well organized. Then the following focus will analyze several critical issues on decentralization process and further discussion will be presented after discussing a case study in Yogyakarta.

3.3. Analysis of Government Policies

The introduction of the IUIDP in 1985 and the formulation of government policies on urban development in 1987, and subsequently focused on decentralization of urban infrastructure, have to be analyzed in the macro political economic context of Structural Adjustment Programme and economic recession of declining oil price in 1983. As indicated by Nordhold (1993) decentralization is one of the most important policy components of SAP. Two arguments are put forward to support decentralization: efficiency and democratization process.

As stated in introduction of the policies on urban development, the predictions of the urban population and industries demands will increase sharply especially in the second stage of long term development plant (1994-beyond 2000). Because of financial and manpower resources constraints in one hand, and because of the rising demands for urban infrastructure and services in another hand; the result of development carried out so far have not been seems sufficient to meet the needs (Coordination Team for Urban Development, 1987). Considering that bottleneck, through decentralization, the government try to achieve efficiently to use resources and equitably to serve the demands. Also through decentralization, the government promotes local institutional capabilities and mobilization of local resources.

Mawhood (1987) indicates that the government intend to do decentralization when the government feel politically secure and when the economic situation is under pressure. If we reflect two mawhood's points in Indonesian context, the decentralization especially on urban infrastructure provision seems to responds the recent political and economical situations.

Analysing the decentralization process in Indonesia, we have to refer to the implementation of Laws no 5/1974 about Local Government Autonomy including decentralization and deconcentration. It seems that after two decades, the central government still dominate the development process such as set up policies even in implementation of many projects. Hasan Basri Durin, Governor of West Sumatra, released an interesting statement "In early the implementation of Laws no 5/1974, autonomy can not be achieved properly because we still prioritize political stability. It seems to emphasis more centralization,.... Since political stability secure enough, there is no reason to afraid to implement autonomy" (Kompas 9 October 1990). As he is a top government leader, in the context of Indonesia, this statement is strong enough to evaluate and to give suggestion to promote decentralization. But we have to put that statement in the 'open valve' of the democratic process and in the economic situation which forced the government to promote decentralization.

During 'Bonanza' oil in early 1970 to early 1980s, the central government played dominant role in almost every urban development project, even KIP was initiated by central government cq Department of Public Work. Since economic recession in the middle of 1980s, the World Bank as well as Indonesian government launch SAP and decentralization become part of it. Declining the oil price in the middle of 1980s forced the government to delay capital intensive and ambitious projects, to release their control (eg on urban infrastructure provision) to local government, and to involve private sector in development particularly in public services.

Beside economic situation, the demand of democratization process is increasing sharply, especially since the middle of 1980s. Parallel with de-bureaucratization and deregulation, the government is opening political 'valve', thus democratization process become more open. Given that political economic situation, the urban development policies were formulated and the IUIDP is being implemented in several urban areas. If we review our discussion in chapter three and other studies, the policies and the IUIDP were still initiated by central government cq under Ministry of Public Work and was signed by BAPPENAS. Although they involved other related departments such as: Ministry of Finance and Ministry of Home Affairs, it seems that decentralization on urban infrastructure is not initiated by local governments. So reflecting the implementation of Laws no 5/1974 and the formulation process in the policies, it seems that autonomy and decentralization process is more initiated by central government with considering political economy rather than an efforts initiated by local government.

If we review the statement of the policies, we found word 'decentralization' was explicitly stated in policy 2 and 4. Policy 2 is regarding to planning and programming process, and identification of investment priorities by all levels of government for urban development. Policy 4 is regarding to responsibility of local government to provide urban infrastructure. Those policies which is related to decentralized urban infrastructure should be analyzed in particular reference. There are four references, which are stated in the introduction of the policies, in order to obtain

the necessary resources and apply them efficiently and equitably of the government policies applicable to urban infrastructure development.

The first reference is functional and financial roles, mechanism and responsibilities for infrastructure provision and maintenance. This reference is related to political economic aspect of decentralization of urban infrastructure. Before the implementation of the IUIDP, there are three (level) public work offices: Kandep (Departemen of PW in TK II), Cabang Dinas (Provincial PW branch in Tk II), and Dinas (local government Tk II own PW office). They provide infrastructure in local government Tk II in similar field (public work), but different level of responsibility and source of finance. There are several experiences that the coordination among them are very weak.

Top down approach and central-sectoral planning in urban infrastructure development, have already experienced in a along time especially during oil boom in early 1970s until early 1980s. This approach has been suffering to local government in the sense of different interests and priorities. Some projects are come from upper government level suddenly only to achieve the target without questioning relevancy with real demand and local government capability to do operation and maintenance. That system is already settled and make high dependency of local government to central government.

Financial aspect is very important in decentralization process. Regarding to financial roles, most of the local government still suffering from the deficit to cover routine expenditure. It is because the local government only collect non-potential source of revenues and get small share of revenues. High dependency in term of political decision making and financial capability, makes the decentralization vague.

The urban development policies and the IUIDP try to reform that situation through emphasis more on decentralization. It is reflected in their strategy: to decentralize urban development planning, to integrate physical programmes, and to integrate financial resources. A multi-years investment programmes, LIDAP, and RIAP are new form of infrastructure development. But we have to view that the reformation process needs time such as indicate by Davey 1989 (see Hoff and Steinberg, 1992) that with respect to the IUIDP as an innovative approach, it may be necessary to stress that it not become fully institutionalized in the near future. Experience, such as the implementation of the Laws no 5/1974, shown that there is often a ten to twenty years time lag between new ideas and their incorporation into public policy and, after that, into routine practice of local government. In addition political economic situation often influence to delay the implementation of the policies or laws.

The second is local resources mobilization. It should not only be viewed in narrow way such as valuable physical material or resources, but also the important thing is the meaning of local resources as aspiration and participation, expression of local needs and demands. The second meaning is related to decentralization process. Many studies and most authors, including who

contribute to the IHS study, assume that decentralization can be equated with the participation of groups of beneficiaries (Nordhold, 1993). Such assumption in the reality sometime is blurred, unless a serious efforts of interest groups create an initiative to empower their self. Further, he then emphasis on bargaining more on bargaining position of citizen to local government, and local government to central government, in order to break out the 'minder' barriers and unbalance position in negotiation process:

> ".... the heart of the manner, namely the measure of freedom enjoyed by citizen organizations to increase their own bargaining power, namely the measure of freedom enjoyed by citizen organizations to increase their own bargaining power. Without stating this particular aspect explicitly, the use of the term decentralization remains almost dangerously vague" p.7.

The third is efficiency resources usage. This is basically used for all Structural Adjustment Programmes and is in fact the standard economic cost-benefit argument - decentralization would increase local resources mobilization (the second reference) and decrease corruption on central government. Nordhold, 1993 identified that within the Word Bank, decentralization is promoted by at least two arguments:

(1) It would lead to reduce misallocation (corruption) at central level, since authorities would know the needs and capabilities at lower levels of administration. Hence, a more efficient and effective allocation of scare resources could be achieved.

(2) It would stimulate necessary local resources mobilization more effective, but in that case local institution capabilities should be improved including human resources development or staff training.

Recently an emerging issue on leaking development funds was caused by corruption and other intransparancy bureaucratic system. Sumitro Djoyohadikusumo[15], a senior economist, stated recently that approximately 30% of development funds were leaking. If Sumitro's indication is true, then the efficiency resources usage, with emphasis more on economic cost-benefit and weakness political control from legislative and people, will become meaningless.

In some experiences, the early stage of decentralization process consume more resources and finance. It is because the bureaucratic system should be adjusted, local government should be trained, meeting and coordination efforts need more resources, and other transitional matters. In the long run, decentralization is believed to deal with more efficiency and effectiveness.

The fourth is institutional capabilities. Since top down approach and centralistic decision making were experiencing in the last decades, some local governments and sectoral branch or Dinas in TK II were dependent on instruction and guiding from upper level. Kompas, a leading newspaper in Indonesia, interviewed government staffs (8 from Tk I, 16 from Tk II, and some

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[15] Djoyohadikusumo stated this issue in ISEI XII Congress in Surabaya, November 1993. ISEI is an Indonesian economist association (Ramly in Tempo 15 January 1994 and Tempo 22 January 1994).

intellectual from universities) and they concluded that this dependency make some local government feel pleasure with that situation. It means that the local governments do not need to work hard to get funds, to do planning, and to mobilize resources; everything is already planed and tailored by upper layer government or central government.

Such environment in some extent create a decadency and mentality of some 'oknum' officials such as ABS culture (Asal Bapak Senang) and neglecting community aspiration. Nordhold (1993) , by referring to Rigg's focus on the importance of formalism: the discrepancy between norms and reality, stated that:

> "In fact, the hidden agenda of officials, in any formal organization, is to try to safeguard their discretionary powers in order to survive. In Indonesian bureaucracies, with their strong Asal Bapak Senang mentality, this 'formalism' works all the more powerfully. One common method to save one's discretionary powers in the vague formulation of regulations which made them interpretable in several ways. Another method is to postpone , as long as possible, specific binding rules for the implementation once laws have been issued. Usually in Indonesia the Peraturan Pelaksanaan (the implementation rules) and the Petunjuk Pelaksanaan (the implementation guidance) will followed only after many years" p.9.

Other barriers in institutional capability are overlapping responsibility and lack of coordination, financial resources and staffs. The IUIDP through LIDAP attempts to deal with those bottlenecks and barriers in order to improve institutional capabilities. One of the strategy is giving opportunities to local government staffs to get training both in provincial training centres or in abroad.

We have to notice that during last seven years, several local government staffs as well as central government staffs have got a vary short courses and diploma on urban management in IHS. Such opportunity for local government Tk II, in the context of Indonesia, is very rare. It seems that the Ministry of Public Work cq the Management team of IUIDP, goes ahead and responds progressively to transform their staffs and their partners in local government in order to strengthen institutional capability.

Human resources development is milestone to reform the old system with top down and centralistic approach to the new system with innovative and decentralistic approach in urban infrastructure provision and urban management.

CHAPTER FOUR
A CASE STUDY OF YOGYAKARTA: PROFILE OF POPULATION DENSITY, HOUSEHOLD INCOME, AND URBAN INFRASTRUCTURE DISTRIBUTION

This chapter presents the profile of Yogyakarta urban area especially the pattern of population density and household income distribution. Those data are drown in thematic maps and are exposed in tables. The population data will be related to the household income distribution and also the existing urban infrastructure problems will be explained in this chapter.

4.1. History of Yogyakarta.

Historically, Yogyakarta was founded in 1755 under 'Gianti agreement'. The first leader is Sri Sultan Hamengkubuwono I who stayed in Kraton Yogyakarta and governed an area part of Java. Settlement area was developed surrounding the castle of the palace, an area between Winongo and Code rivers. Yogyakarta become a centre of government and a concentration of settlement area. Some remarkable development of Yogyakarta can be written as follows:

- In 1813 Kadipaten Pakualaman, a small palace with castle, was founded in eastern across Code rivers.
- In 1872 railway Yogyakarta-Semarang and Lempuyangan station was build by NIS Mij S/V. Then in 1887 Tugu station was opened to connect Yogyakarta-Jakarta to the west and Yogyakarta-Surabaya to the east.
- Then settlement areas were developed surround the main roads and railway stations. Chinese people stay surround Tugu station and business area in Kranggan, Degen, Gandekan, and Gondokusuman. Arabic people stay surround castle in Sayidan and Kauman. Dutch people was build Vredenburg castle and stay in Loji Kecil, Bintaran, Jetis, and Kota Baru (new town).

Spatial urban growth have been enlarged from 16.7 square kilometres in 1936 become 32.5 square kilometres in 1961. Population growth in Yogyakarta mainly is caused by high urbanization especially after Indonesian independent. A study on demography of Yogyakarta shows that population growth achieves 4.5% per year during 1950-1960; consist of 1.8% by natural population growth and 2.7% by migration (Dian Desa, 1991).

A huge migration have had happen in 1946 when Yogyakarta become capital of Indonesia during transition period of government. At that time approximately 50.000 people, mostly politician and government staffs and their families migrated from Jakarta to Yogyakarta. The table shows a sharp changing of increasing population between 1930-1960.

Table 3

Population in Yogyakarta municipality in some periods.

Year	Number of population
1930	136.649
1961	312.698
1971	342.267
1980	386.068
1987	426.352

Source: Dian Desa 1991:b2.

Yogyakarta is recognized as historical and tourism city, provincial capital of Special Region of Yogyakarta, student centre, and an urban centre to serve its hinterland. Those identities and functions lead rapid development and changing of urban area. Since 1970s Yogyakarta has been growing beyond its administrative boundary as a municipality. Yogyakarta urban area become an agglomeration of urban activities and its development spills over to neighbouring districts; Sleman in north and Bantul in south (see appendix 2). It can be summarized that the growing of Yogyakarta starts from centre to periphery in all direction especially linked with transportation network. Even, it is growing beyond its administrative boundary.

4.2. Urbanization and Urban Growth in Yogyakarta

As we discussed in the previous chapter, basically there are two factors causing urbanization. Push factor is related to a condition which force somebody or people to move out from their area to another area which attract them. Whereas pull factor is often connected with a situation which attracts somebody or people to come in to get better condition to improve their life. In term of urbanization, people from rural or hinterland area move to urban area. So the push factor is in rural or hinterland area and the pull factor is in urban area.

Early urbanization in Yogyakarta actually has been started when Yogyakarta become a centre of government under Sri Sultan Hamengkubuwono I. After the palace was founded, settlement areas were developed surround the castle of the palace. Migration is still few at that time. Only some people from rural area migrate to Yogyakarta to serve to their Sultan. The motivation of the migrants at that time are to devote and to dedicate to their Sultan. They are very proud to be appointed as 'Abdi Dalem Kraton' or servant in the palace, and to be elected as 'Punggowo Kraton' or staff officer in the palace.

The development of Yogyakarta in the 1800s is noticed by the enlargement of settlement area beyond Code river (Kadipaten Pakualaman in 1813) and the development of road and railway network in 1872 to connect the hinterland area and the other urban areas (Semarang, Batavia, Solo, Surabaya, etc). This development leads urbanization or migration of people from rural area and

other urban area to Yogyakarta. The development of ethnical settlement area (Chinese, Dutch, and Arabic) and market centres seem that Yogyakarta become an important and strategic urban centre in the interior of Java. Yogyakarta become a centre of trading for both agricultural products from hinterland and goods from other urban centres especially from costal urban areas (Batavia, Semarang, Surabaya).At this period, the motivation of migration was changing from socio-culture related with Kraton to socio-economic related to markets or trading activities and other urban services.

Urbanization in Yogyakarta after Indonesian independent is related to political aspect when the capital of Indonesia moved from Jakarta to Yogyakarta in 1946. A huge migration approximately 50,000 people, mostly politician and government staffs and their family migrated from Jakarta to Yogyakarta. Eventhough Yogyakarta become Indonesian capital only one year[16], some of them decided to stay in Yogyakarta. This migration is completely different from the previous urbanization in the term of push and pull factors. The push factor here is related to render the Indonesian government safe from the Dutch aggression. The pull factor is related to the reluctant of Sultan and the willingness or the people of Yogyakarta to defend the existence of Republic Indonesia from the Dutch aggression.

Urbanization in Yogyakarta is also related to militer aggression aspect, when the Dutch government try to attack Yogyakarta in 1948. Many refuge from suburban and rural area moved to take shelter and to got protection in urban area. They stay in an area in Notoprajan close to Kraton under protection of Pangeran Purbonegoro, a son of Sultan Hamengkubuwono VII. Later this area is called Serangan and become transit terminal of farmers and traders who move from rural to urban markets for economic activities (see chapter three, part 3.2.). Here the motive of migration, push and pull factors of urbanization is different from other cases before.

In 1960s and 1970s urbanization in Yogyakarta become more complex, especially when Yogyakarta become a student city. Many schools, university, and other education centre (non-formal education, training centre, etc) were founded in Yogyakarta. Those education facilities attract students from other provinces to come to study in Yogyakarta. At that time Yogyakarta is also popular as 'Miniature of Indonesia' [17]because many students and young people from different islands, ethnics, languages, come and interact in the student city.

In case of this migration, the push factor is that education facilities in rural areas and other provinces are still rare. In addition the quality of education in their area is relatively low and the students are challenged to get better quality of education. The pull factor is that many schools and campus in Yogyakarta relatively high quality and they offers vary fields of study from philosophy

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[16] It is because Yogyakarta was aggressed by the Dutch especially in 1948. Then in order to render the Republic Indonesia safe from the Dutch aggression, the RI leaders decided to move back to Jakarta.

[17] There are many student dormitory based on their province and many student association based on their region. Sometime they make a conference to give an input to develop their hometown or to formulate a strategy to develop their region.

to art and from economy to nuclear engineering. In addition Yogyakarta is recognized as cultural centre, historical city, and relatively cheap of the standard of living. Those conditions attract both students and their parents to chose Yogyakarta as a destination to study.

Since Yogyakarta become a growing urban area to serve the entirely region and to attract the overseas tourist, the diversification of urban function is also changing to become more complex. Yogyakarta urban area has several functions such as centre of provincial government, centre of education and culture, centre of economic activities (provincial level), also be recognized as historical city, tourist city, etc. Related to urbanization, the motivation of migrants is also changing. Basically the motivation of migrants in the recent time is economic motivation. Most of them migrate to get better job and to improve their life as we discussed in chapter two. The push and pull factors is more or less similar with other events of urbanization in developing countries. In case of circular and seasonal migrants, Yogyakarta has specific characters.

Circular migrant in Yogyakarta can be observed in early morning when thousands of people move from rural and sub urban areas to urban centre or in the evening when they back to their home in rural and sub urban areas. Most of the circular migrants use bicycle to transport them. Bicycle is a popular transportation means in Yogyakarta, even Yogyakarta has been labelled as 'Bicycle city' in 1970s. Recently modern transportation such as motorcycle, car, mini bus, is also used to transport the circular migration. Before 1980s, most of the circular migrants are rural people who are related to their country both physically and culturally. After 1980s when some people from urban centre purchased land in sub urban areas and build houses, circular migration pattern become changing. Recently traffic jams sometime happen in some 'gates' of the city. A crucial traffic point can be founded in main roads network or junctions in the entry point of the city. It shows that circular migrations tend to increase not only the number of migrants but also the kind of vehicle that they use. The implication of this finding is that the circular migrants should be considered as users not only rods and transportation infrastructure but also other urban infrastructures that they use during the day in urban centre.

Seasonal migrant has different characteristics with circular migrants. The seasonal migrants are seeking jobs during dry season. They work in informal sectors in construction. During dry season some agricultural (non technical irrigation) land become dry especially in limestone area 'Gunung Sewu' or thousand hills area in Kabupaten Gunung Kidul and in other hinterland area of Yogyakarta. Farmers can not plant in their agricultural land and they have difficulties to make an alternative jobs in rural areas. Because of this push condition, they have to move out from rural areas and seeking jobs in Yogyakarta urban areas. This is called supply side of labour. On the other side or demand side, during dry season many construction projects start to implement their plans to construct buildings. A huge demand of labour is needed to construct the building during dry season. Here supply and demand of labour meet in urban area during dry season.

4.3. Profile of Population Pattern.

Population pattern in urban growth is very important factor in urban planning especially its relation with urban spatial development and urban infrastructure provision. Population in urban agglomeration of Yogyakarta is characterized by residence, circular migrants[18], and temporary migrants such as students and vendors. Number of population in Yogya based on population census 1990 is only 412,059; but in Yogyakarta urban area is 861,294. During the day when circular migrants are working in Yogyakarta, number of people perhaps more than one million.

Table 4

Population in Yogyakarta Urban Area

	1980**	1984*	1988*	1990**
Yogya urban centre	387,312	407,227	421,780	412,059
Sleman urban fringe	185,884	204,215	225,084	287,394
Bantul urban fringe	124,746	133,090	141,097	162,941
Yogyakarta	697,942	744,532	787,961	861,294

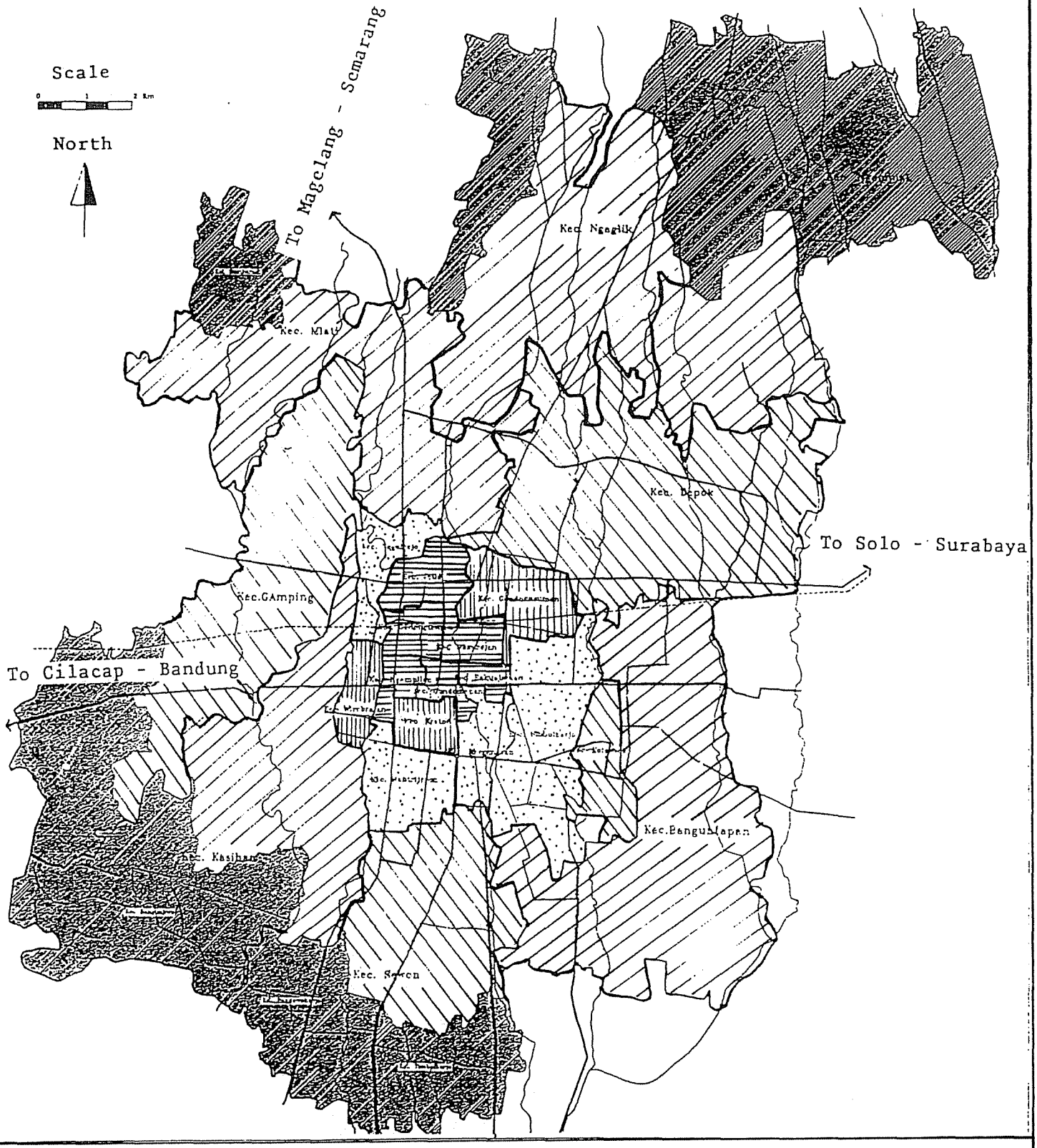
Source: * = YUDP Kalurahan survey and ** = Population census

A series of data on table 4 shows that population in Yogyakarta urban area tend to increase sharply, especially in urban fringes. If we look in-depth on table 4, in Yogya municipality or urban centre since 1988 the population is decreasing. In contrast, population number in urban fringes (Sleman and Bantul) increasing sharply.

From this table we can extract some interesting characteristics of population dynamics. Population in Sleman and Bantul urban fringes are increasing sharply. During 1988 to 1990 population in Sleman urban fringe increased sharply around 27% and in Bantul urban fringe increased by 15.5%. It indicates that population in Yogyakarta urban area in 1980s shifting from urban centre (Yogya) to Sleman urban fringes (5 sub-districts) and to Bantul urban fringe (3 sub-districts). So those urban fringes which formerly rural areas with agricultural activities, now become sub-urban even become urban areas as part of Yogyakarta urban agglomeration (see map 1).

[18] circular migrant is indicate people who work in urban area and back home in rural areas surround Yogyakarta.

Map 1



YOGYAKARTA URBAN AREA

POPULATION DENSITY AT KECAMATAN LEVEL

Legend :

- Kecamatan boundary
- Main road network
- River
- Green belt zone

Population density:
(Population/hectar)

> 325	: Very high	Red
250 - 324	: High	Orange
175 - 249	: Medium	Yellow
100 - 174	: low	Green
< 100	: Very low	Blue

The development of settlement in sub-urban or urban fringe of Sleman and Bantul can be shown by increasing investment by government (Perumnas - a national housing programme), private sectors (REI - association of real estate Indonesia), and private individuals who build new house in sub-urban. They develop housing and settlement areas in sub-urban area because of several reasons:

(1) Land price and in urban centre is expensive.

(2) Population density in urban centre is very high.

(3) It is difficult to get land in urban centre for new settlement.

(4) On the other hand sub-urban promising several attractiveness such as low price and availability of land to be developed as settlement areas.

The reasons 1,2,3 are refer to push factor and the reason 4 is refer to pull factor of shifting some medium-high income to settle in sub urban areas.

The tendency of shifting development from urban centre to sub-urban in Yogyakarta was started in 1970s when massive urbanization especially student come to Yogyakarta to study and to get better job. The implication of this tendency in the context of urban population pattern is that the population density declines with increasing distance from the centre and the density gradient declines with time. The tendency can be seen in a data series on urban population density of Yogyakarta based on Kalurahan in the year 1980, 1984, 1988, and 1990 (see appendix 13).

Beside the residents, the migrants who use urban services and facilities are very important to be considered as users of urban infrastructure. They have certain characteristics which should be considered in urban development planning and should be approached in certain way.

According to Real Demand Study by Dian Desa 1991, the characteristics of the migrant is very complex. In order to simplify the data, this study was categorizing the main groups or migrants:

(1) Student: 30% of population in Yogyakarta municipality is student. Most of them came from other districts surround Yogyakarta and other provinces, even from abroad.

(2) Vendors and seasonal migrants: they come to work in informal sectors as food vendors, low wages labour in construction, and other informal services. Some of them bring their family and stay in high density population settlement, and the other leave their family in rural area.

(3) Tourists and visitors: they are considered as users of services and facilities in urban area. Eventhough they are temporary or short tim to stay in Yogya, but the number of tourists and visitors are increasing sharply.

Those three main groups have different characters. Each of them has different demand of urban services and has different capability to pay the services. The implication of those differences, is that the government should provides urban infrastructure to those intens to use,

develops urban infrastructure in areas where are very high density population and low income households, and have to improves the standard of quantity of facilities and of the quality of services which are used by many people from different countries (tourists and visitors). Therefore the profile of the migrants is important to be explained in urban development.

Yogyakarta is recognized as 'kota pelajar' or student city. This identity is related to the history of education in Yogyakarta. Before the Dutch colonial government introduced school, 'Sekolah Tamanan' and 'Sekolah Madya-penganti' were founded in 1848 by the Sultan Hamengkubuwono and his staffs. Those school have an objective to educate the Kraton family and the Kraton staff family by several subjects: language, art, history, public 'management', law, religion (Islam), technic including self defence and agriculture. In order to respond this progress, the Dutch government also founded a school which was called 'Sekolah Gubernemen' and also was located in Kraton in 1867. Other schools, 'Sekolah Partikelir', were founded by Kraton intellectuals to serve the public.

In 1900, there are several school in Yogyakarta: Tamanan, Madya-panganti, 2 Gubernemen schools (Sri Manganti and Pagelaran), and 8 Partikelir schools. The following years, several young activists created school for people as their basic strategy to struggle for Independent. Budi Utomo was founded in Batavia 20 Mei 1908 has several school in Yogya. Muhammadiyah, a religion base organization for social activities, was founded in 18 November 1912 in Yogyakarta. Tamansiswa was founded also in Yogyakarta in 3 July 1922 by Ki Hajar Dewantara[19]. Those movements on education simultaneously created 'kesadaran nasional' or a national consciousness among the young scholars and activists who were struggle for independent. So, Yogyakarta is historically recognized as a student city (Dian Desa, 1991).

After the independent, 17 August 1945, some intellectuals founded higher education. The first private university, Universitas Islam Indonesia (UII), was founded by young intellectuals and activists in 1948; then followed by government university Universitas Gadjah Mada (UGM) in 1949. Recently, Yogyakarta has 56 universities, institutes and academies. Most of them (52 education institutions) were founded by private organizations and only 4 universities and institutes (UGM, IAIN, IKIP, and ISI) were founded by government.

The number of student in Yogyakarta increasing by the time: 132,623 (in 88/89), 139,169 (in 89/90), and 145,832 (in 90/91). Most of them come from outside of D.I. Yogyakarta province. The average data from the period of 1985-89 shows only 37.88% from D.I. Yogyakarta, 36.67% from central Java, 9.41% from East Java, 3.15% from D.K.I. Jakarta, 3.20% from West Java, 9.54% from other islands and 0.16% from abroad (Dian Desa, 1991).

The students who came from outside of Yogyakarta stay in a rent room in 'Pondokan' dormitory or in a house with 'Induk semang' family. Related to population registration, many

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[19] Ki Hajar Dewantara has become the father of Indonesian education. He promoted a motto "Education for all" and 3 July become a National Education Day.

students are not registered as citizen of Yogyakarta. In other word, they stay and use urban services and facilities in Yogyakarta, but they are never accounted in local government planning as the users.

Other group of migrants are vendors and seasonal migrants. Most of them came from rural areas of D.I. Yogyakarta province and the rest of them came from outside DIY province such as 'pedagang Tasik' from Tasikmalaya, West Java. They migrate to urban area to get jobs in informal sectors such as: vendors, low wages labour in construction, labour in small scale industry and in other urban services.

The seasonal migrant is rather different with other type of migrant. They are looking for job in urban area during dry season, a season which is called 'Paceklik'. This is because during 'paceklik' or dry season they can not plant in their agricultural land (non-technical irrigation land) and they have difficulties to get alternative jobs in rural area. In other side, during dry season, the demand of labour in urban area is very high, especially in construction activities such as office and house buildings, roads, drainage system, bridge, etc. Those push and pull factors strongly attract the people to go to urban area to get informal and seasonal jobs as an alternative income for their family in rural areas.

According to Dian Desa's survey 1991, there are at least four areas where the migrants stay. They stay in areas where are very high density population and low income household with limited infrastructures. Some of them bring their family to migrate in urban area and they stay temporary in the migrant 'pocket' area, perhaps they decide to become resident of this area. The other migrants stay for temporary without bring their family. They rent a small room in the migrant 'pocket area' and sometime they visit their family in rural areas in certain period of time, perhaps twice a month. The four migrant 'pocket' area shortly be described as follow:

(1) Serangan: this area administratively in kalurahan Notoprajan, kecamatan Ngampilan. Historically Serangan is a refuge area when in 1948 the Dutch government aggressed Yogyakarta (Indonesia)[20]. Many rural people moved to urban areas to take shelter and safety, and young people and RI soldiers moved to rural areas to struggle with Gerilya (hit and run) strategy[21] against the Dutch militer (Nasution, 1993). "Serangan' means aggression, perhaps the name of Serangan is related to the event of the Dutch aggression in the past time. Recently this area become transit terminal of farmers and traders who sell their agricultural products from rural areas to urban markets. Serangan is a strategic location for them to transit. It is close to markets and urban centre: Gampingan,

[20] The first aggression was happen in 1947 and the Dutch militer possessed 2/3 of Java and some regions of Sumatra (Soetanto 1993). The second aggression was happen in 1948 after the Dutch government torned and spoiled 'Linggarjati' and 'Renville' cease-fire agreements (Nasution 1993).

[21] The people and soldier of the Republic of Indonesia (RI) used several strategy and tactic: Gerilya (hit and run), Bumi hangus (Earth fire), and Pertahanan rakyat semesta (total defence), in order to defence and to struggle against the modern Dutch militer with a strong airforce and centralistic strategy.

Beringharjo, Ngabeyan, Kraton and business zone of Malioboro.

(2) Terban: this area administratively in Kecamatan Gondokusuman. This area close to commercial are and campus: Kranggan and Terban markets, Jalan Solo and Jalan Simanjuntak business zone, and Gadjah Mada University campus. Terban becomes popular among the migrants who works as food vendors, shopkeepers, and other services. This area is also popular among students who like to stay near their school and campus.

(3) Ledok Code: this area is recognized as settlement in the valley of Code river. Ledok Code settlement has very high population density and low income household. This area characterized by irregular houses pattern with low quality materials and often suffering from flooding during high rainy season. The advantage of this area is in urban centre and close to Beringharjo market and Malioboro business centre. This area become popular among people who work in informal sectors such as 'pedagang kakilima' or movable shops, shopkeepers, urban services and seasonal migrants.

(4) THR area: this area administratively in kecamatan Gondomanan. THR formerly is a bus terminal and recently become 'Taman Hiburan Rakyat' or recreation and amusement area in the city centre. Surrounding the THR is a settlement areas where are high population density and low income household.

Beside the student city, Yogyakarta is also recognized as a tourist destination. In 1989 the number of tourist achieves 664,416 which can be distinguished as 72.77% domestic tourist and 27.23% overseas tourist. They stay in Yogyakarta for certain days which can be calculated statistically as an average of 1.53 days for domestic tourist and 2.04 days for overseas tourist (Kanwil VIII Depparpostel DIY quoted by Dian Desa 1991).

Tourist and visitors have certain characteristics which is different with other two type of migrant and even different from the citizen. They certain type of urban facilities and services. They direct and indirect use urban infrastructure during they visit in Yogyakarta. Since the number is quite huge and they need certain type of facilities and services, they have to be accounted as users of urban infrastructure. In order to develop Yogyakarta urban area, this issue is important to be considered in urban infrastructure planning.

4.4. Household Income Distribution.

Household income in urban area is very important to know how much the capability of household to pay services and taxes related to urban infrastructure provisions. The data of household income basically be extracted from a Real Demand Study conducted by Dian Desa in 1991. The study is an household survey with more than 4,862 respondents (3,602 household respondents and 1290 student respondents). Those household respondents are representative of total household in Yogyakarta urban area. The distribution of household income at kecamatan or

sub-district level as follows:

Table 5

Household income distribution at kecamatan level

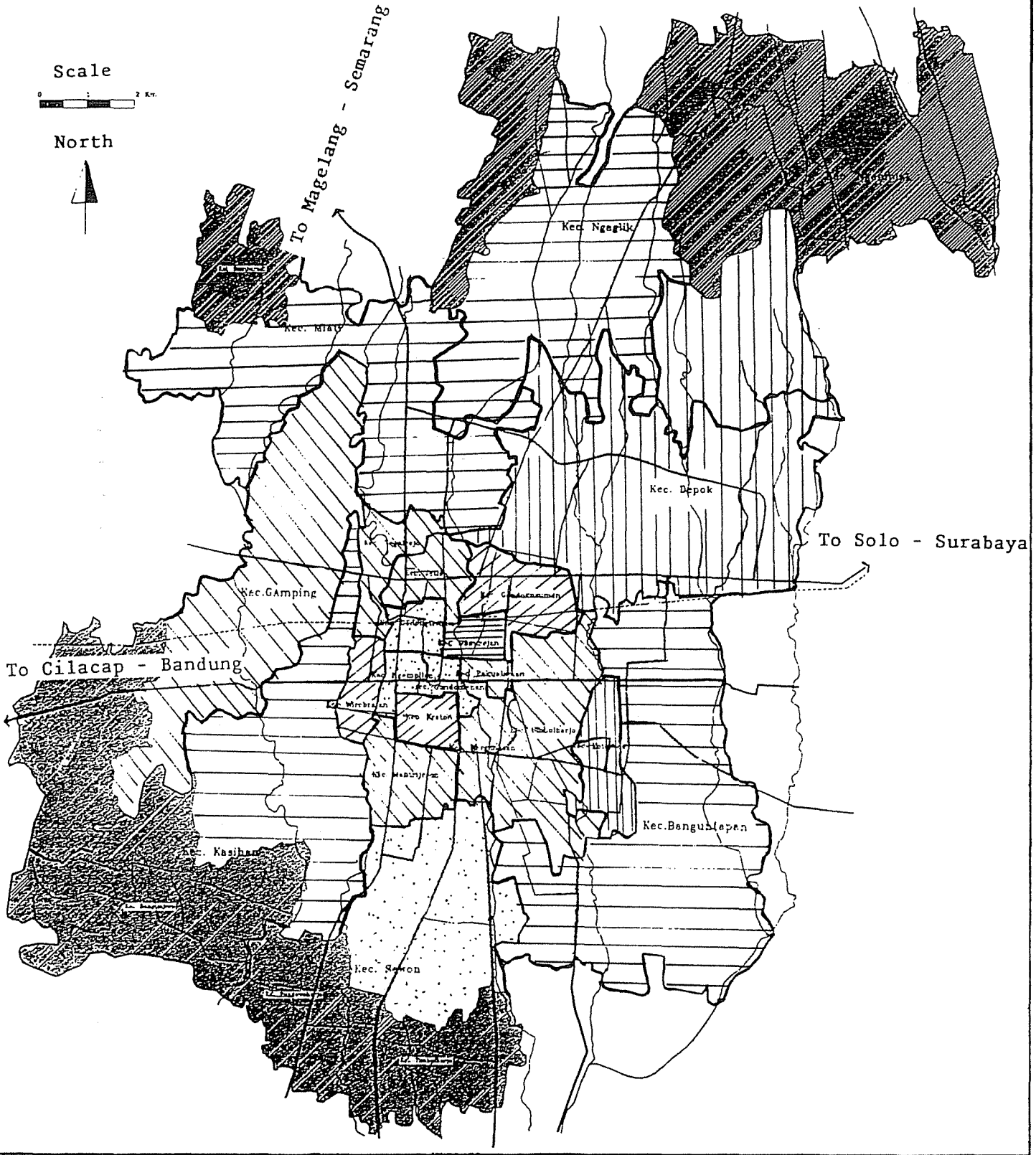
Code	Kecamatan or sub-district	Net Population density	Average Household Income (Rp 1,000,-)
Y/Mj/1	Mantrijeron	208	258
Y/WB/2	Wirobrajan	255	281
Y/Kr/3	Kraton	290	289
Y/Mg/4	Mergangsan	189	265
Y/Uh/5	Umbulharjo	210	275
Y/Kg/6	Kotagede	114	221
Y/Pa/7	Pakualaman	358	250
Y/Gm/8	Gondomanan	362	248
Y/Ng/9	Ngampilan	332	235
Y/Gt/10	Gedongtengen	415	231
Y/Dn/11	Danurejan	362	194
Y/Gk/12	Gondokusuman	290	288
Y/Jt/13	Jetis	391	252
Y/Tr/14	Tegalrejo	177	256
S/Gm/15	Gamping	134	251
S/Ml/16	Mlati	71	177
S/Dp/17	Depok	111	218
S/Np/18	Ngemplak	45	206
S/Ng/19	Ngaglik	64	195
B/Bt/20	Banguntapan	92	189
B/Sw/21	Sewon	105	239
B/Ks/22	Kasihan	90	186

Notes: Code Y/Gk/12 means Yogyakarta/Gondokusuman/number 12
S/Dp/17 means Sleman/Depok/number 17
B/Ks/22 means Bantul/Kasihan/number 22
Netto population density is total population/settlement area square (hectare).

Source: Calculated from Real Demand Study by Dian Desa, 1991.

The population density data and the average household income data based on kecamatan level be represented in map 2. Than the pattern of the map be analyzed by 'map pattern analysis method'. In order to assist the map analysis based on kecamatan level, a data representation and its map based on kalurahan level be produced (see appendix 12). Since this study based on kecamatan level, all data based on kalurahan level be exposed in appendices.

Map 2



YOGYAKARTA URBAN AREA

HOUSEHOLD INCOME DISTRIBUTION AT KECAMATAN LEVEL

Legend :

- Kecamatan boundary
- Main road network
- River
- Green belt zone

Household income category :
(x Rp 1,000/month)

> 275	: Very high	Blue
250 - 274	: High	Green
225 - 249	: Medium	Yellow
200 - 224	: Low	Orange
< 200	: Very low	Red

The Real Demand Study presents an analysis on the household income distribution at kalurahan level. They found that the household income distribution in Yogyakarta is rather different with other metropolitan areas or urban agglomeration. The characteristics of household income in Yogyakarta is mixing between the rich and the poor. It means in the high density population and irregular settlement areas can be found some high income households mix together with medium and low income households as neighbourhood.

Table 6 shows the percentage distribution of household income in Yogyakarta. The very low income household or less than Rp 100,000 per month is 17.4 % and the high income household or more then Rp 400,000 per month is 11.1%. The remaining or 72.5% is considered as medium income household. This figure is important to get a close profile of household income in order to complete the figure in table 5. Table 6 is presented as follows:

Table 6

The percentage distribution of household income in Yogyakarta

Household income (Rp/month)	Percentage (%)	Cumulative %
> 50,000	2.2	2.2
50,000 - 100,000	15.2	17.4
100,000 - 150,000	19.1	36.5
150,000 - 200,000	17.0	53.5
200,000 - 250,000	13.2	66.7
250,000 - 300,000	10.7	77.4
300,000 - 400,000	11.5	88.9
400,000 - 500,000	5.2	94.1
500,000 - 1,000,000	5.2	99.3
> 1,000,000	0.7	100.0

Source: Real Demand Study by Dian Desa 1991

4.5. Existing Urban Infrastructure

The existing urban infrastructure here is related to the IUIDP prgramme in Yogyakarta Urban Development Project. There are eight types of urban infrastructure which are presented here. Each of them will be explored their problems and be related to the government programmes (appendix 8).

4.5.1. Water supply

Approximately 85% population of YUDP dependent on non-piped water such as shallow dig well, piped dig well with pump, surface water or river and seepage. Only 15% population of YUDP use piped clean water. Piped clean water in Yogya covered 27% and non-piped water covered 49%, in Sleman piped clean water covered 8% and non-piped water covered 52%, in

Bantul piped clean water covered 3% and non-piped water covered 50% of population (EWI and Hasfarm Dian, 1992).

The piped water system is operated by six public water supply enterprises: (1) PDAM Tirta Marta for the Kodya Yogya, (2) BPAM Kota Gede for Kota Gede, (3) BPAM Sleman for Kabupaten Bantul, (4) BPAM Bantul for Kabupaten Sleman, (5) UGM for Campus of Gadjah Mada University, and (6) PD Arga Jasa covering Colombo or a small part of Sleman. PDAM Tirta Marta is the biggest public water supply enterprise which has 20,000 connections and a total production of almost 12 million meter cubic in 1991. Most of the piped water supply systems use deep groundwater. This water is quite good quality for raw material of clean water, only excessive iron and carbon dioxide (aggressiveness) pose a problem. Apart from this, some springs and shallow wells are being operated. The quality of the water from springs is generally good, but the shallow groundwater there are increasing problems with pollution caused by human activities.

The pattern of water consumption for household purposes in Yogya have been studied by Erlina in 1991. The study considers the status of social economy of the head household which is divided into several categories as follow: officers or military officers consume 251 litre/capita/day, traders or entrepreneurs 233 l/c/d, craftsmen 179 l/c/d, farmers 175 l/c/d, labours 151 l/c/d, others 200 l/c/d. The average consumption of water per capita per day in Yogya is 198 litres. Furthermore this study also identified the pattern of water consumption for each uses: cooking and drinking 8%, washing 21%, cleaning kitchen tools 10%, bath and WC 47%, wudlu - taking water for praying 8%, sanitation 4%, and others 2% (Erlina, 1991).

The main problems of clean water supply can be explained as follows:

- Piped water supply in Yogyakarta is considered very low only 15% of population. The average piped water in urban areas is 40% of population and targeted 60% can be served in the following years.
- Bacteria parameters shown that the quality of shallow groundwater tend to be degraded by human activities. All kecamatan in Yogyakarta can be found high level of concentration of faecal coliform bacteria. This bacteria can cause diarrhoea and can transmits other pathogenic organism to spread some diseases such as cholera, typhus, hepatitis A, poliometris, etc.
- Chemical parameters shown that in all Kecamatan have a problem of agressivity of Carbon Dioxide (CO2). This problem can stimulate corrosion process in iron pipe. Nitrate (NO3) and Nitrite (NO2) in all Kecamatan is considered high. In some Kecamatan (16 of 22 Kecamatan) can be found NH4 or Ammonium. It indicate that groundwater pollution by human and industrial wastes is already exist.
- A major technical problem for most of the water supply systems is a high unaccounted for water on average 35-40%. A major social problem is the perception of piped water by the people, customers as well as non-customers: most of them regard the quality and the

services as low. Although a number of problems have been overcome, this reputations still remains, and consequently, only a relative small number of people is presently interested in a house connection.

Related to the programme, the government has a target to increase the access to safe drinking water especially in area where considered very high population density. The priority is based on population density is realistic, but without considering household income distribution it become vague. In the budget planning to improve water supply, 65% will come from APBN (national development budget). It seems that financial assistance from central government still dominate the programme.

Table 7

Clean Water And Other Source Of Water

Kecamatan	Piped Water		Shallow Well		River & Others	
	unit	% pop'l	unit	% pop'l	unit	% pop'l
Mantrijeron	860	17	3737	81		2
Wirobrajan	458	12	1386	35		53
Kraton	1158	34	1952	58		8
Mergangsan	632	15	3436	76		9
Umbulharjo	171	3	5610	72		25
Kotagede	1106	32	2278	78		-10
Pakualaman	725	45	800	48		7
Gondomanan	828	35	1221	52		13
Ngampilan	1074	35	999	33		32
Gedongtengen	1603	53	492	15		32
Danurejan	1294	45	751	25		30
Gondokusuman	1867	22	2970	35		43
Jetis	2906	65	714	16		19
Tegalrejo	1010	20	1581	32		48
Gamping	214	3	5242	59		38
Mlati	1646	17	4675	49		34
Depok	618	3	7243	38		59
Ngemplak	545	10	4768	88		2
Ngaglik	1004	12	4738	54		34
Banguntapan	238	2	5760	50		48
Sewon	432	6	5538	50		44
Kasihan	293	3	5505	50		47

Source: YUDP-PJM 1991 (PDAM, BPAM, PPSAB),
Real Demand Study by Dian Desa 1991

4.5.2. Drainage System

Landscape of Yogyakarta urban area has slope between 1% - 5% on north - south direction and 0% on east - west direction. Compared with Surakarta[21], technically the Yogyakarta landscape slope is better for drainage system than that in Surakarta (see Baiquni, 1988). Yogyakarta urban region has 5 rivers as main drainage system: Bedog, Winongo, Code, Gadjah Wong, and Blontang. Those rivers flow from north to south which have function as natural drainage system. The depth of those rivers is between 6 - 15 meters with 'V' shape of valley.This characteristic make Yogyakarta never suffering from dangerous flooding.

Some years ago the local government, non-governmental organization and individuals campaigned 'Put the water into the earth'. It is an efforts to encourage people to make a percolation hole as drainage system in their land. It is a system to drain rain water which is collected by house roof and channelled into percolation hole. In Yogyakarta existing percolation hole approximately 2400 in Yogya municipality, 25 in Sleman and 5 in Bantul. This percolation hole is very important to reduce flooding and to recharge the ground water.

The main problems of drainage system can be listed in detail as follows:

- However macro drainage system is never flooded, but some part of micro drainage system are often flooded locally.
- The existing drainage system is often still partially operated. Sleman, Yogya, and Bantul has separated management on drainage system.
- Some drainage system is used as mixing function for sewerage, human and domestic wastes, and drainage system.
- New settlement and new road was build without properly drainage system.
- Improperly planning and technical design of drainage channel to anticipate heavy rain during peak wet season.
- The temporary flooding can disturbs traffics especially in main roads, can stimulates disease vectors, and causes pollution.
- Complexity institution to handle different function of drainage system in some part of urban areas make several overlapping and incompatible system.

A report on drainage study, which its field survey have been done in June 1989, discovered that there is 38 flooding location in Kodya Yogya during heavy rain and storm. Most of the flooding locations are in main roads network. The most problems related to flooding are small drainage channels, sedimentation, small duiker and shallow, even no drainage channel in some locations. In Kabupaten Sleman at least there are 19 flooding location during heavy rain and storm. The problems are similar with

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[21] Surakarta is a medium with has some similarity with Yogyakarta in term of socioeconomic and urban development. It is only 60 km to the east from Yogyakarta.

that in Yogya. Whereas in Kabupaten Bantul the data is not available.

The programme seems try to tackle those problems through considering environmental aspect and developing an integrated drainage system in Sleman, Yogya, and Bantul. The programme especially will prioritizes in area where flooding are often exist and in area where heavy populated. In medium term, the government will make a master plan of drainage system. The master plan will become a reference of the three local governments in order to develop drainage system in their areas.

Table 8

Drainage system in kecamatan level in Yogyakarta

Location Kecamatan	Open Channel (m)	Closed Channel (m)	Total	Area Square	Ratio Tot/Area
Mantrijeron	24280	5340	29620	267.97	110.53
Wirobrajan	7190	1215	8405	180.05	46.68
Kraton	15309	8813	24122	137.27	175.73
Mergangsan	14450	5450	19900	235.65	84.45
Umbulharjo	15595	365	15960	805.3	19.82
Kotagede	24730	0	24730	300.34	82.34
Pakualaman	32000	5800	37800	60.9	620.69
Gondomanan	240	3870	4110	110.5	37.19
Ngampilan	4290	1450	5740	86	66.74
Gedongtengen	3140	4170	7310	99.11	73.76
Danurejan	27640	2950	30590	110.6	276.58
Gondokusuman	19735	3590	23325	413.17	56.45
Jetis	7440	10590	18030	159.43	113.09
Tegalrejo	4975	1850	6825	290.97	23.46
Gamping	n.a	n.a	n.a	n.a	n.a
Melati	n.a	n.a	n.a	n.a	n.a
Depok	n.a	n.a	n.a	n.a	n.a
Ngemplak	n.a	n.a	n.a	n.a	n.a
Ngaglik	n.a	n.a	n.a	n.a	n.a
Banguntapan	n.a	n.a	n.a	n.a	n.a
Sewon	n.a	n.a	n.a	n.a	n.a
Kasihan	n.a	n.a	n.a	n.a	n.a

Source: YUDP studies 1991

4.5.3. Sewerage And Sanitation

In 1991, approximately 60% of population in Yogyakarta use sanitation facilities consist of 88% in Yogya, 48% in Sleman, and 27% in Bantul. Most of those facilities are on-site sanitation which serve

57% of Yogyakarta population, 3% off-site sanitation and 40% are rivers and natural sanitation.

Off-site sanitation or sewerage system only covered 3% of Yogyakarta population. This system cover 684 ha in Yogya municipality divided at two area: (1) area between Winongo and Code rivers (2) area on eastern Code river in kalurahan Tegalpanggung, Lempuyangan, Bausasran, and Numbakanyar. The system was build in 1936-1938 during the Dutch colonialism and the technical characteristics of the system is: piped channel with diameter 20 - 40 cm, gravitation system or slope 5% in north-south direction, 8 outlet to Code and Winongo. This system has 4800 unit of domestic use and 1200 unit of non domestic use with 30,720 people are served.

On-site sanitation is used by 57% of YUDP population. According to Real Demand Study on-site sanitation is divided by household facility and public facility. Most of respondents (2836 respondents) or 78.73% use private-household sanitation, 20.65% (744 respondents) use public sanitation facilities (Dian Desa, 1991). The distance of on-site sanitation and well in Yogya is less than minimum standard (10 meters). 41.66% (2314 respondents) have on-site sanitation which close to their well as a source of clean water. This condition mostly emerge in high populated kalurahan.

The main problems of sewerage and sanitation system can be detailed as follows:

- Some households still use drainage channel, irrigation channel and rivers to dispose human wastes.
- The distance between on-site sanitation and well in most of high populated areas are less than technical standard required or less than 10 m. This situation leads pollution on ground water as a source of clean water. In some studies (Sudarmaji, 1991) found that most of wells in Yogya are polluted by faecal coli bacteria.
- Type of soil in Yogyakarta urban area is sandy loam. Sandy loam has high permeability. It means that this soil has very high capacity to adsorb and capability to infiltrate water. According to Dacrea (1986) average percolation in Yogya is 4.5 min/cm and average capacity of infiltration is 66 litre/m2/day. Related to sanitation problems, sewerage and human wastes which are not treated will easily contaminate ground water.

The programme tries to achieve an improvement of sanitation especially in very high populated area. The government has seen that the improvement of sanitation and sewerage will improve the settlement environment and community health. Off-site sanitation or piped sewerage system will be connected with sewerage treatment plant. Since sewerage system exists in old town in urban centre, then it become difficult to enlarge the household connection to the system. It is because an investment in this area is costly and the construction becomes difficult. One of the interesting scheme of this programme is introducing a pilot project which is operated together with credit and revolving fund at community level. This scheme is based on the argument that sanitation is a household needs.

Table 9

Sewerage and Sanitation in Yogyakarta

Location Kecamatan	Riool to household	Rioolserve community	Rioolserv community	Household sanitation	Public sanitation&MCK	Household sanitation	Community sanitation coverage
	(unit)	(persons)	(%)	(unit)	(unit)	(person)	(%)
Mantrijeron	296	1517	28	5383	4	32976	100
Wirobrajan	0	0	0	2868	1	18374	68
Kraton	546	2797	27	4689	14	22463	100
Mergangsan	47	1213	15	5448	4	32317	100
Umbulharjo	0	0	0	5575	3	35738	60
Kotagede	0	0	0	3075	0	19680	82
Pakualaman	741	3796	31	2277	8	11986	100
Gondomanan	577	2955	25	3023	9	17431	100
Ngampilan	918	4704	49	1345	10	8800	43
Gedongtengen	951	4873	28	2708	68	18637	83
Danurejan	267	1365	16	2712	32	17971	78
Gondokusuman	351	1799	12	6076	10	39078	69
Jetis	1064	5448	27	2969	12	19232	63
Tegalrejo	50	254	47	3488	7	22458	69
Gamping	0	0	0	3053	4	19616	32
Melati	0	0	0	4326	113	29856	45
Depok	0	0	0	10805	56	70227	53
Ngemplak	0	0	0	2845	9	18381	48
Ngaglik	0	0	0	5135	31	33459	58
Banguntapan	0	0	0	4000	0	25600	35
Sewon	0	0	0	2600	0	16640	23
Kasihan	0	0	0	2400	0	15360	22

Source: YUDP (Bappeda) 1991

4.5.4. Garbage collection and dump site

Garbage production in Yogyakarta in 1991 is approximately 2,955 meter cubic per day. Average garbage production per capita is approximately 3 litres per day. Only 30% of garbage in Yogyakarta can be collected and be processed by government and the other 70% by community.

Most of the garbage came from domestic garbage which consists of organic materials. According to UGM study in 1986: 73% of garbage from households, 14% from hotels, 5% from markets, 2% shopping centres, and the others are 6%. This study also identified that 48% of the garbage is organic leaves, 28% is plastics, 14% is papers, 6% is vegetables and fruits, and others are 4%.

Garbage collection and processing system by government only serve Yogya 67% and Sleman 5% of population. Most of garbage collection in Sleman and Bantul, is conducted by community through several system: (1) individual system - household garbage which is disposed in garden or in other places, (2) collective system - household garbage which is collected together by RW and disposed in certain place.

Some people dispose their garbage into irrigation and drainage channels, rivers, and illegal garbage disposal sites close to their settlement. In some extent they burn the garbage 'hill' in those sites. This illegal system can cause environmental health problems and pollution in groundwater, surface water, and air.

According to Dian Desa (1991) shows that 51% of population in Yogyakarta dispose their garbage in their garden, 18% of population dispose their garbage in temporary disposal site (TPS), 21% of population use collective system, and 5% of population dispose their garbage in channels or rivers.

Final disposal sites (TPA) in Yogyakarta are TPA Tambakboyo and TPA Jatimulyo/Kricak. Others TPA can be found in ex-TPA which was closed some years ago and small TPA in river banks. Those TPA is considered as illegal TPA or in other word not be managed by government. All TPAs make environmental pollution such as causing putrid odor, groundwater and surface water pollution, and air pollution when most of the garbage be burned.

TPA Tambakboyo in Kecamatan Condongcatur lies on river bank of Gadjah Wong and close to settlement. TPA Jatimulyo/Kricak in kecamatan Tegalrejo also lies on river bank of Winongo. Those TPAs is on the up-stream of Yogya. It implies that the pollution on water both groundwater and surface water flowing down to urban populated areas of Yogya. Further implication can cause environmental health problems, because most of population use groundwater and surface water as source of water for daily purposes.

The main problems of garbage collection and dump site can be described as follows:

- In some part of the city especially in settlement where close to river, people dispose the garbage to river and valley.
- Some drainage problems or flooding are related to garbage which clogged up drainage channels.
- Two open dump sites are close to settlement areas and also site in upper-stream of Yogyakarta. Those sites disturb to settlement areas (putrid odor) and ground water which is the main source of water for most of population in down-stream.

The government programme have a plan to relocate those TPAs from upper river to lewer river of Yogyakarta. Two alternative sites was studied in area close to Gunung Sempu (Sleman) and area in foot plain of Batur Agung range (Bantul). Feasibility study and negotiation process are still going. Here we have to suggest that the decision should considers not only based on site feasibility but also considers some apects related to transportation cost, environmental and social cost, and sustainability of the site in the future.

Table 10

Average Garbage Volume and Weight Per Day in Yogya Municipality in 1986

Source of Garbage	Volume (m3)	Percentage (%)	Weight (ton)	Percentage (%)
Household	1966	73.50	143	65.90
Hotel	380	14.21	12	5.53
Market	144	5.38	30	13.82
Service	40	1.50	9	4.15
Shop	34	1.27	1	0.46
Office	34	1.27	1	0.46
Restaurant	29	1.08	13	5.99
Hospital	16	0.60	3	1.38
Industry	15	0.56	3	1.38
School	11	0.41	1	0.46
Recreation	6	0.22	1	0.46
Total	2675	100	217	100

Source: PPLH UGM and Bappeda DIY 1987

4.5.5. Roads And Transportation

Road and transportation is one component in IUIDP under Department of Public Work. During Repelita - Five year plan IV and V, some road section have been improved. Beside ring road, most of the road improvements were an 'ad-hoc' programme to solve temporary traffic problems.

Existing road network in YUDP is not sufficient in term of quality (construction, facility, surface road, traffic sign, etc) and in term of capacity (dimension, traffic management, etc). Total distance of road network in YUDP is 775,3 km with an average coverage 21 m'/hectare. The road coverage in Yogya is the highest 68 m'/ha, Sleman 17 m'/ha, and Bantul 15 m'/ha. The condition of road network is 65% in good condition, 25% in fair condition, and 10% in very bad condition.

A transportation study by Gadjah Mada University 1990 identified some road section which have very heavy traffic. Those section are mainly in the main road network in urban centre. The type of transportation means in YUDP is dominated by bicycle 47.3% (165,882) and motorcycle 41.2% (144,754). This is because Yogyakarta is a student city, more than 50 institutes/academy/ university taken place. The other type of transportation are: car is 2.5% (8,786), minibus is 2.4% (8,541), truck is 2.2% (7,665), bus is 0.6% (2207), and others are 0.4% (traditional vehicle).

Public transportation in YUDP is served by bus which are managed by several institutions (government and cooperation). 245 buses are operated in Yogya, 68 in Sleman, and 25 in Bantul. According to PJM 1991, Number and frequency of public transport in YUDP is sufficient to serve public

users and to serve the YUDP area, but the quality is not sufficient. Some of the buses are in bad condition and contribute very high to pollution. In addition facility to support public transport such as bus halt, terminal, and route information are not sufficient.

The main problems of roads and transportation are:

- Traffic jams in YUDP mostly are caused by heavy traffics, low discipline of users, low quality of traffic management and low quantity of traffic signs.
- Traffic jams which are caused by junction and traffic light. Too many junctions and traffic lights in part of the network.
- Traffic jams are also caused by rush hour traffic - time where most of users are going to work, to study, and to travel (tourist). The rush hour traffic is around 06.30 to 08.30 in the morning, then 13.00 to 15.00 in the afternoon, and 17.00 to 18.00 in the evening.
- In some sections of road network are in bad condition.
- In some sections of road network are too small to hold the traffics or bottle neck problem.
- Construction activities of other networks such as telephone cable, piped water supply, drainage system, often cause traffic jams.
- There is no an integrated road development planning in Yogya, Sleman, and Bantul.

The main target of the programme is to finish Yogyakarta ring road in urban fringes. This ring road has function to reduce heavy traffic in Yogyakarta and to provide accessibility to develop new centres for education, settlement, and business. A road network master plan will be developed in order to integrate road networks in the three local government.

4.5.6. Kampung (Settlement) Improvement Programme

KIP is an integrated development programme at neighbourhood level focused on infrastructure provision programme such as water supply/public tap, sanitation, drainage, garbage, small roads, etc. Basically KIP is under local government responsibility. Since local government does not have capability in term of technical and financial aspects, the central government 'help' to develop this programme through KIP perintis or KIP pioneering programme.

Low income settlement area in YUDP is 1,208 hectares. Kampung improvement programme which have been done since 1979/1980 is only 130 hectares or 11% of total low income settlement area in YUDP. The KIP is prioritized on low income and high population density. According the criteria, all Kampung Improvement Programme was implemented in Yogya in several kampung: Terban, Gondokusuman, Tegalpanggung, Purwokinanti, Beji, Prawirotaman, Suryatmajan, Sorosutan, Serengan, Mangkuyudan and Jogokaryan.

Most of the KIP in Yogya was focused on infrastructure programme especially on drainage and path/small roads. This is because of financial constrains and practical threats such as land evacuation for the programme of KIP. In the other words the KIP is very dependent on central government budget, while

the central government budget is very limited for KIP. This is because basically KIP is development of (low-cost) urban infrastructure. Its operation and maintenance is in principle within the authority and responsibility of local government. The central government provides budget Rp 2,800,000,- per hectare for physical development and Rp 1,500,000,- per hectare for design and administration.

In YUDP more than 1,000 hectares which is categorized as 'Kampung' is not covered yet by Kampung Improvement Programme. Some of the Kampungs lay on river valley close to urban centre. Code river valley is the most famous of Kampung which is very high population density because of close to urban centre. Just 50 meters from this Kampung, there are several stars hotels, super markets, restaurants, and other entertainment centre.

The main problems of Kampung Improvement more or less related with population density, household income, and government capacity to assist this programme. The pin points of the problems are as follows:

- Most of Kampung have problems related with over population and lack of infrastructures: water supply, sanitation, sewerage, garbage and drainage facilities.
- Most of Kampung especially which lay on river valley were not planed.
- Most of households in Kampung have low income level. Most of them work in informal sectors or labours in low level status.
- The budget for KIP is too small
- Some technical standard which was formulated in national level in some extent is not appropriate to be implemented in Yogyakarta.
- Some standard procedures is not suitable to support bottoming up development or in other words the government officers (public work, lowest G.O., and other related institutions) tend to dominate the process.
- In some cases people participation and contribution is less than what the government expected.
- Only 11% of total area of Kampung in YUDP have been improved. It seems that multiplier effects of this programme does not exist in neighbouring Kampung.

Basically the government programme is very clear, but the constraint which are explained above is not only the problem of the KIP programme but also the problem of highly dependent on central government and lack of initiatives. In some cases, the programme are to achieve the target without considering the process.

4.5.7. Market Infrastructure

Market is one of the main important places in urban area. In Yogyakarta there are 41 markets which can be classified in four categories as formal specific market, informal specific market, formal general market, and informal general market. Basically market infrastructure improvement programme (MIIP) is similar with KIP. This programme is aimed to reduce environmental pollution from market

activities to surrounding settlement area. This is because most of those markets are close to settlement areas. The main problems of market infrastructure are summarized as follows:

- Most of markets in YUDP is not sufficient to hold the growth of market activities.
- Most of markets is growing up in natural way or unplanned. It caused several problems related with traffic jams, overcrowded and crammed, and unhygienic condition and environmental pollution.
- Infrastructures of the market such as water supply, drainage, WC and sanitation, garbage system, are in very bad condition and insufficient to serve the activities.
- Some markets especially in urban centre have not enough land to develop the market space.

The distribution of markets in Yogyakarta urban area is 33 markets in Yogya, 7 markets in Sleman, and only 1 market in Bantul. Up to 1991 only 8 markets (51,5 ha) in Yogya have been improved by the MIIP scheme under Department of Public Work (national budget). Most of MIIP which have been implemented focusing on roads (54%) and drainage (41%) improvement. Other market infrastructures which close related to environmental and hygienic are paid less attention. Actually infrastructures such as water supply, WC and sanitation, garbage collection and TPS are very important to be improved by MIIP. MIIP from national budget has certain criteria to select market to be improved:

- Market which close to the settlement area and the market activities which produce garbage and sewerage pollute the surrounding settlement area.
- Market is categorized as formal both specific and general markets. Formal market means that (1) the land is owned by local government, (2) the market is managed by 'Dinas Pasar' or public market enterprise owned by local government, (3) market infrastructure is permanent.
- Market infrastructure and settlement infrastructure is not sufficient to hold the activities.

Beside the MIIP programme financed by central government, some MIIP programme are financed by local government budget. Here we have seen that the government have done a lot to improve market infrastructure, but it seems lack of private sector involvement. Since market is an important place for enterprises including producers and traders, there are many opportunities for private sector involvement in MIIP programme.

4.5.8. Environmental Aspects

Environmental problems in YUDP are caused by population pressure or increasing population density and lack of urban infrastructures. Theoretically, environmental condition in area where categorized as high population density and lack of infrastructure is considered very bad condition. Environmental aspect is considered in every improvement programme on urban infrastructures. Priority of improvement have to be given in area where has high population density and lack of infrastructures.

The main problems of environmental aspects in urban development in Yogyakarta can be described as follows:

- Water supply both piped and non-piped water was polluted by domestic activities (sewerage, human waste, and garbage), agricultural activities (pesticide and chemical fertilizer), and industrial activities.
- Drainage system in YUDP is not sufficient. It causes flooding and pounding in several location and furthermore it makes environmental problems.
- Soil porosity in YUDP is very high. The implications of insufficient sewerage system and improper on-site sanitation are groundwater pollution, shallow well pollution by pathogene contamination.
- There is no sewerage treatment in YUDP, all sewerage system flows directly into Winongo and Code rivers.
- Two open dump sites (TPA) Tambakbayan and Jatimulyo are in upper rivers of Gadjah Wong and Winongo. The implication of those TPA is pollution in groundwater and surface water or rivers which flow down into Yogya. The other problem related to garbage are: (1) some of drainage channels are clogged up garbage, (2) temporary damp site (TPS) and informal damp site are disturb neighbouring settlement.
- Environmental problem related with road and transportation in YUDP is that air and sound pollution, overcrowded and traffic jam, and accidents.
- Some markets in YUDP are lack of infrastructure. The implication is that the market garbage and sewerage may cause pollution into neighbouring settlement.

The environmental improvement programme basically was already related in each of infrastructures development programmes. In medium term the government programmed a study of environmental aspect for urban development in Yogyakarta. The government also planed to do environmental impact assessment for infrastructure development projects. Further the programme also consists of dissemination of environmental information through several broadcasting services and attempts to do a pilot project for industrial waste treatment. It seems that the local government has a high commitment to tackle environmental problems in urban development.

Environmental development in urban area is also a commitment of central government especially the Ministry of Environment. Adipura prize is an indication of a successful programme in urban development based on environmentally sound and sustainable development criteria. So, if Yogyakarta in the near future gains Adipura prize; it can be said that the IUIDP programme in Yogyakarta, in some extent at least in environmental development, can be considered as a successful programme.

CHAPTER FIVE
ANALYSIS OF THE PATTERN AND RELATIONSHIP BETWEEN POPULATION DENSITY, HOUSEHOLD INCOME, AND EXISTING INFRASTRUCTURE

This chapter presents the analysis of the pattern of population density, household income, and existing infrastructure. The simple scoring method, map pattern analysis, and comparative methods are used to elaborate the data which is already exposed in chapter four.

5.1. The Pattern of Population Density and It Relations with Household Income.

5.1.1. The migrant pockets

The migrant pockets have been explained in chapter three. Here we want to analyze them in more detail which can be narrowed down into two major aspects: location pattern and characteristics of the problems.

If we plot the four migrant pockets in the map, we will recognize that the location of them are in urban centre. If we look in-depth and relate to other phenomenon in the map, we will recognize that the pattern of the migrant pockets are close to business centre and markets. Those findings approve that the low income migrants prefer to stay in the migrant pockets settlement area which close to their work place in urban centre.

They prefer to stay in the migrant pockets which is associated with slum area rather than stay in low-cost housing (Perumnas) in sub urban area in Condongcatur and Minomartani, Sleman. In the middle of 1980s, Pemda (Local Government) of Yogyakarta has a plan to resettle people who stay in Ledok Code to low-cost housing in sub urban area. According to the plan , Ledok Code as a part of Code river valley will be developed as green zone of the city. The plan was fail to resettle the people to new settlement in sub urban area. One of the reason is because most of the people refuse to stay far away from their work place.

Most of the residents in Ledok Code (and other migrant pockets) are working in informal sectors such as food vendors, shopkeepers, reparatory services (electronics and vehicles machines, kitchen tools), 'tukang tambal ban' or tires reparatory service, and other urban informal services. Their work places close to their settlement. They work often until late night and they take a break for rest a while in their small houses just behind their work places or just walk for few minutes. During the break one of the household member replace him/her to take care their informal shops. Location of the work place and characteristics of the work time, force them to stay in the slum area in urban centre.

The migrant pockets which is characterized by slum area mostly very high population density and low income households. Physical characteristics of houses in those areas are irregular, small, and insufficient open space. Most of the houses were build by low cost and low quality of materials. The environmental condition of those area are considered not good. It is because those

areas are overpopulated, overcrowded, over crammed, and insufficient of infrastructure. Most of those areas are lack of clean piped water supply, lack of sanitation, and insufficient of open space.

Eventhough the condition of the settlement and the houses are inconvenient and unpleasant, the migrants choose this area to stay because of relatively cheap and close to their work place. They are not pay any transportation cost to go to work. Low income households have no many alternative of choices to decide what they want. Related to Berry's or Fujita's concepts on location choice of households, the main determinant of location choice of the migrants and low income households to settle in slum area in Yogyakarta, is the capability to pay or to rent a house to survive and related to the accessibility to work close from their settlement. The other Berry's points on the type of residents related to family size and the life style preferences as well as the Fujita's factors on space and environmental amenities, are not so relevant to determine the location choice of low income household in Yogyakarta.

5.1.2. Population density and household income distribution

Generally, population density in Yogyakarta is concentrated in urban centre. There are six kecamatans which have population density more than 325 persons per hectare: Pakualaman, Gondomanan, Ngampilan, Gedongtengen, Danurejan, and Jetis. From the thematic map on population density, we can see that the six kecamatans are in urban centre.

In Yogyakarta, population density decreasing with distance from the city centre. The map shows that in sub urban or urban fringes, the population density is considered low and very low. This population density pattern approves the previous findings that people prefer to stay close to the urban centre which is the centre of economic activities and the centre of work places. From the map pattern analysis, we can relate the finding with the Axiom 1. The decline of population densities with distance from the city centre seems also happen in Yogyakarta.

An interesting phenomena is happen in population dynamics. Population growth in urban centre was increasing in 1970s then continually decreasing in 1980s. In the 1970s the population growth increased from 1.12 % in 1971 to 1.70 % in 1980; and in the 1980s it was decreasing from 1.70 % in 1980 to 0.34 % in 1990. Table 11 shows that tendency:

Table 11

Population growth in urban centre of Yogyakarta

Year	1961	1971	1980	1990
Number of Population	306,296	342,267	398,192	412,659
Population Growth		1.12	1.70	0.34

Source: Population sensus

This data can be interpreted that urbanization was happen in 1970s especially students from other regions (see chapter 3). Then what happen in 1980s?. Population growth in Yogyakarta urban centre is very low in 1980s approximately only 0.34 % per year, but a growing settlement centre, has been developing in urban fringes. Population growth in some kecamatan in urban fringes increasing sharply, especially in kecamatan Depok (Sleman) reaches 4.5 % per year.

There are several reasons of moving to new settlement in sub urban areas:

- Most of household who moved to new settlement centre basically have a medium-high-very high income. They prefer to chose new houses in urban fringes because of better environment and better infrastructure.
- There are many alternatives to chose to stay in a house in real estates which is mostly for high and very high income or to stay in a house in Perumnas complex which is mostly provided for medium and low income people.
- Improving roads and public transports are important aspect to attract people to stay in sub urban areas.
- Availability and accessibility of public facilities such as telecommunication shops, education centre, and markets, which are close to their new settlement, make new settlement areas more attractive.
- Land price in sub urban is relatively low compare with that in urban centre, the cost of housing per unit in real estate or in Perumnas complex is cheaper than that in urban centre. In addition the credit payment system is helpful to many households to get a new house. This financial aspect of housing related tightly to household income.

From that reasons, we found some interesting phenomena of population dynamics which is going on in the development process in Yogyakarta urban area as follows:

- New household or new couples who are educated people and have high mobility tend to stay in new settlement in sub urban areas. This finding is supported by a tendency of data that average age of population in kecamatans in sub urban is lower than that in kecamatans in urban centre.
- In many cases, some households in urban centre sold their land and house in sub urban which are high price, then bought new land and build a house (or bought a house in real estate or Perumnas complex) in lower price with better condition. Then the rich people, who bought the land in urban centre, restore or build high class housing. This process is called "Gentrification", a process of modernization or restoration of a house or an area to make suitable for high class occupiers.
- Conversion process from old housing or settlement to become a new commercial or business area is happen in urban centre especially in strategic areas.
- Data from population sensus shows that kecamatans with population density more than 150

person per hectare are decreasing their population growth, on the other hand kecamatans with population density less than 150 person per hectare tend to increase their population growth. This means that tendency of moving population from kecamatans with very high population density in urban centre to kecamatans with very low population density in urban fringes is approved by statistical data from population census in 1980 and in 1990.

Decreasing population growth in urban centre is accompanied with increasing population growth in urban fringes. This trend approved that since 1980s, conurbation process has been occurring as a respond to urbanization process since 1970s. Recently urbanization process is still going on as well as conurbation process. Those processes create an urban agglomeration in Yogyakarta. This tendency can be related to the Axiom 2 that the density gradient declines with time. Since this paper does not explore population and its relation with those axioms, we have to go further to our topic on household income and urban infrastructure distribution.

In order to make this analysis clearer, table 12 presents clustering kecamatans based on the relationship between population density and household income.

Table 12
Clustering of the relationship pattern
between population density and household income

Household income > Population density V	Very high	High	Medium	Low	Very low
Very high		Pakualaman Jetis	Gedongtengen Ngampilan Gondomanan		Danurejan
High	Kraton Wirobrajan Gondokusuman				
Medium		Mantrijeron Mergangsan Tegalrejo Umbulharjo			
Low		Gamping	Sewon	Depok Kotagede	
Very high					Mlati Ngaglik Banguntapan Kasihan

The pattern of household income distribution in kecamatan level in Yogyakarta shows that the very low household income can be found in urban centre (Kecamatan Danurejan) and four kecamatans in urban fringes (Kecamatan Mlati, Ngaglik, Banguntapan, and Kasihan). This finding is very interesting to be analyzed further.

In urban centre or in Yogyakarta municipality, the lowest household income is Kecamatan Danurejan. Most of kalurahans in Danurejan are considered very low of household income (see appendix 2). Part of Ledok Code, a migrant pocket in along Code river valley, is in Kecamatan Danurejan. It is why this kecamatan is considered very low household income.

If we analyze in-depth, we will found a quite strange pattern of household income distribution in Kecamatan Gondokusuman. According to the thematic map on household income, Gondokusuman is considered very high household income; but within Gondokusuman, Kalurahan Terban (one of the migrant pockets) has very low household income (see appendix 2). In other study, they found that even within the lowest settlement class[23] can be found the rich and the poor stay side by side as neighbourhood (Dian Desa 1991, D-3). It can be concluded that the distribution of household income in Yogyakarta is mixing in a given settlement area, nevertheless we can distinguish the pattern of average household income at kecamatan level. Yet we have to be carefully to look in-depth the characteristics of low household income, which we already discussed in previous sub chapters about the migrant pockets, in order to approach the real problems.

In sub urban area or urban fringes the pattern is rather different. The four kecamatans in sub urban, which is considered low income household, are basically still in transition area from rural with mono-economic activities (agriculture) to urban with multi-economic activities. In some part of sub urban areas still can be found agricultural land and some household still dependent their income on agricultural activities. Eventhough sub urban areas are considered as low income household, the recent tendency shows that some rich people build their new houses and some private enterprises developed new settlement or real estates in sub urban areas. This phenomena shows a gradual changing from rural settlements to new settlements or real estates which is completely different social life environment.

5.2. The Pattern of Household Income and It Relations with Existing Infrastructure.

In order to make clearer explanation on the pattern of household income and urban infrastructure, this analysis distinguishes Yogyakarta urban area into two analysis areas: the urban centre (Yogyakarta municipality) and the urban fringes (Sleman and Bantul). This distinction is based on arguments as follows:

- Administratively those areas has different type of government: urban centre is a municipality and the urban fringes are part of the districts periphery.
- Some findings which are explained before, show that basically urban centre has different characteristics compare with urban fringes in term of population dynamics, household income distribution, and physical development.

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[23] The lowest settlement class is a settlement where has a high population density with irregular houses (Dian Desa 1991, D-3)

- It is interesting to develop an analytical framework as much as possible to make clearer to understand the reality.

In this analysis, Kecamatan level is used as unit of analysis of the relationship between household income and some urban infrastructure. Other infrastructure and programs in IUIDP, can be analyzed in certain context or case. Some urban infrastructures within IUIDP framework can be analyzed by simple scoring and map pattern analysis methods. Regarding the data availability, there are four urban infrastructure which can be scored and presented their spatial distribution in a thematic map. The four urban infrastructures are: piped water, drainage system, sanitation facilities, and garbage collection. The range of score is from very high (5) to very low (1).

The scoring data is based on the range of each infrastructure data. Scoring of piped water is based on percentage of population which is served by piped water as a source of clean water: > 40% (very high), > 30-40 (high), > 20-30 (medium), > 10-20 (low), 10 and less than 10 (very low). Scoring of drainage system is based on the ratio of channel (m) per area (ha): > 100 (very high, > 75-100 (high), >50-75 (medium), > 25-5- (low), 25 and less than 25 (very low). Scoring of sanitation facilities is based on percentage of population which are used on-site sanitation and/or served by sewerage system: 100 (very high), > 80-99 (high), > 60-80 (medium), > 40-60 (low), 40 and less than 40 (very low). Scoring of garbage collection is based on percentage of household which dispose their garbage through TPS (temporary dump site) or through garbage collecting system run by government or community services: > 40 (very high), > 30-40 (high), > 20-30 (medium), > 10-20 (low), 10 or less than 10 (very low). In order to know aggregate score of infrastructure, the score of four types of infrastructure will be summed up (see table 13).

The aggregate score of urban infrastructure at Kecamatan level, then be categorized in certain range and be transformed into a thematic map. The map pattern analysis will be employed in order to recognize their spatial pattern (see map 3). As we have done before in map 1 and 2, here we should do similar procedures: aggregating or in this case scoring, pattern recognition and comparison, and interpretation.

Table 13

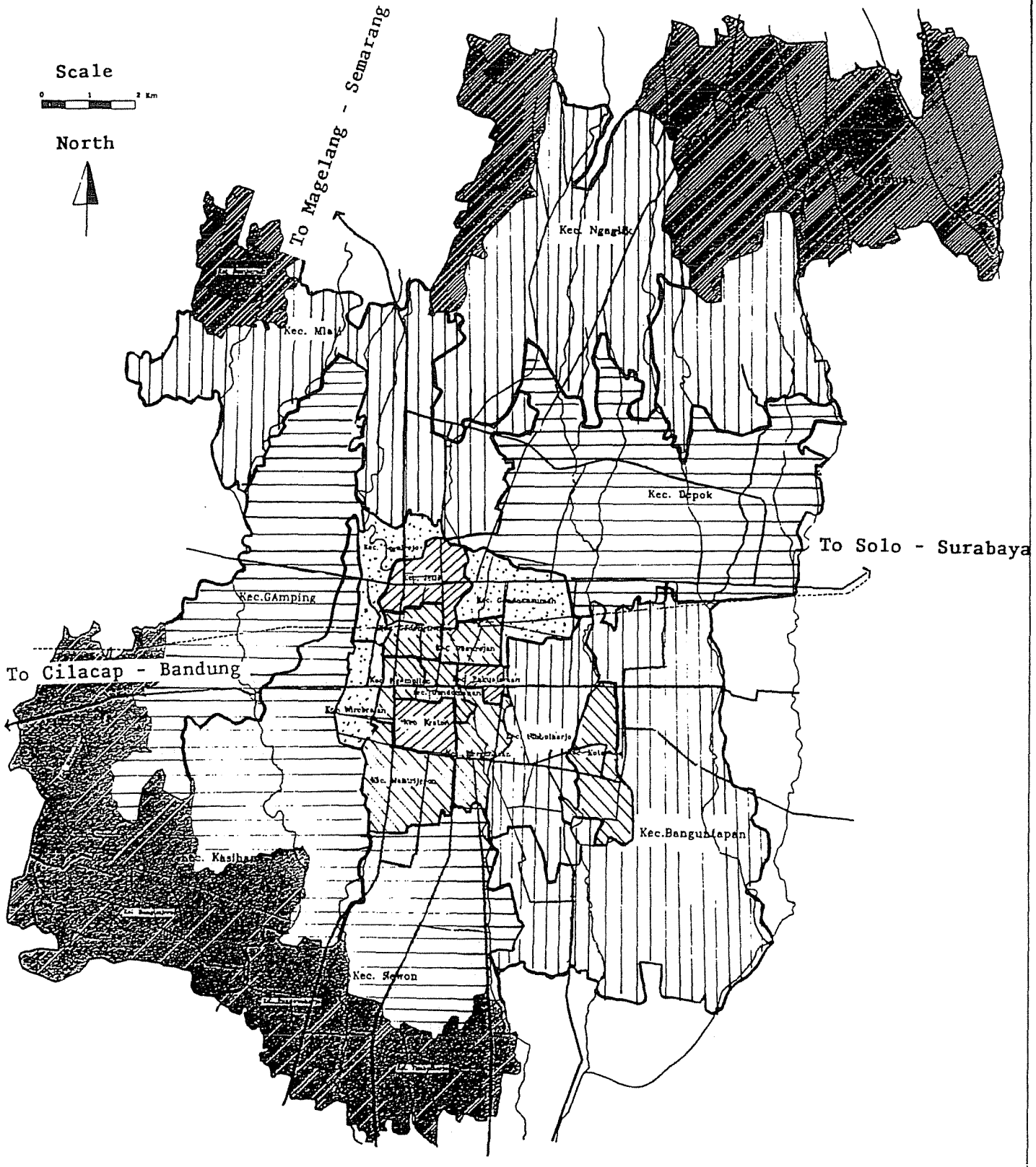
Scoring Household Income and Urban Infrastructure
at Kecamatan Level

Kecamatan	Pop'l Density	Household Income	W	D	S	G	Total Score
Mantrijeron	208	258	2	5	5	3	15
Wirobrajan	255	281	2	3	3	2	10
Kraton	290	289	4	5	5	4	18
Mergangsan	189	265	2	4	5	4	15
Umbulharjo	210	275	1	1	2	3	8
Kotagede	114	221	3	4	4	3	14
Pakualaman	358	250	5	5	5	2	17
Gondomanan	362	248	4	2	5	5	16
Ngampilan	332	235	4	3	2	4	13
Gedongtengen	415	231	5	2	4	5	16
Danurejan	362	194	5	5	3	3	16
Gondokusuman	290	288	3	3	3	3	2
Jetis	391	251	5	5	3	4	7
Tegalrejo	177	256	3	3	3	3	2
Gamping	134	251	1	1	1	1	4
Mlati	71	177	2	1	1	2	6
Depok	111	218	1	1	1	1	4
Ngemplak	45	206	2	1	1	1	5
Ngaglik	64	195	2	1	1	1	5
Banguntapan	92	189	1	1	1	2	5
Sewon	105	239	1	1	1	1	4
Kasihan	90	186	1	1	1	1	4

Source: Table 7,8,9 and Appendix 4

Note: W = piped water
D = drainage system
S = sanitation
G = garbage collection

Map3



YOGYAKARTA URBAN AREA

URBAN INFRASTRUCTURE DISTRIBUTION AT KECAMATAN LEVEL

Legend :

- Kecamatan boundary
- Main road network
- River
- Green belt zone

Urban infrastructure category :

> 16	: Very high	Blue
> 12 - 16	: High	Green
> 8 - 12	: Medium	Yellow
> 4 - 8	: Low	Orange
< 4	: Very low	Red

5.2.1. The urban centre

The distribution of infrastructure at Kecamatan level in urban centre is vary from very high (blue) to low (orange). Very high quality distribution can be found in three Kecamatans: Kraton, Pakualaman, and Jetis. Kraton and Pakualaman have been developed since the early of Yogyakarta (see History of Yogyakarta, chapter 3) and recently have been developed as tourism and cultural centre.

The pattern of infrastructure distribution can be related to population density. A comparison between map 1 and 3 shows that all very high density population areas: Danurejan, Gedongtengen, Ngampilan, Gondomanan, are covered by high quality distribution of infrastructure, even Pakualaman and Jetis are covered by very high quality distribution of infrastructure. Those kecamatan are very high population density but are covered by high and very high quality distribution of infrastructure; this situation is rather strange. It is exist because those kecamatan are in core of urban centre or in area of old town which is had been developed at the past time. In addition we have to remember that the unit analysis of this research is at kecamatan level; it means if we analyze in deep at kalurahan level or kampung level, we found that very high population density stay in areas where are considered low and very low quality distribution of infrastructure (see analysis on the migrant pockets).

Mantrijeron and Mergangsan which are considered medium population density and Kotagede which is low population density, are covered by high quality distribution of infrastructure. In case of Kotagede, low population density area which is covered by high quality distribution of infrastructure, is also rather strange. It can be explained that Kotagede is an old town outside of the old Yogyakarta city. So, the infrastructure had been developed at the past time.

Medium and low quality distribution of infrastructure are covered Kecamatans which are close to urban fringes. Wirobrajan and Tegalrejo in the west and Gondokusuman in the east part of the core of urban centre, has medium quality distribution. Thereby Umbulharjo is considered low quality distribution of infrastructure because this area still has paddy field and large yards and gardens. Regarding household income, the distribution of urban infrastructure can be related as follow:

- Very low income in Kecamatan Danurejan and low income in Kotagede, are covered by high quality distribution of infrastructure.
- Medium income in Kecamatan Gedongtengen, Ngampilan, and Gondomanan, three areas in the core of urban centre, are covered by high infrastructure.
- High income areas has vary relationships: Jetis and Pakualaman are covered by very high quality distribution of infrastructure, Mantrijeron and Mergangsan are covered by high infrastructure, while Tegalrejo and Umbulharjo (close to urban fringe) are covered by medium and low quality distribution of infrastructure. In the case of Tegalrejo and

Umbulharjo are rather strange; it is because eventhough those areas administratively in urban centre, but some part of their area "green area" such as gardens, zoo, and paddy field.

- Very high income areas in Wirobrajan and Gondokusuman are covered by medium, only Kraton has significant relationship that very high income has very high quality distribution of infrastructure.

Clustering of the relationship pattern between household income and urban infrastructure can be seen in table 14 as follows:

Table 14

Clustering of the relationship pattern

between household income and urban infrastructure

Infrastructure > Household income v	Very high	High	Medium	Low	Very low
Very high	Kraton		Wirobrajan Gondokusuman		
High	Jetis Pakualaman	Mantrijeron Mergangsan	Tegalrejo	Umbulharjo	Gamping
Medium		Gondomanan Ngampilan Gedongtengen			Sewon
Low		Kotagede			Depok
Very low		Danurejan		Mlati Ngaglik Banguntapan	Kasihan

Those relationships are very interesting phenomena. Those findings should be interpreted that in urban centre of Yogyakarta, the relationships between household income and distribution of urban infrastructure at Kecamatan level are mixing. This situation has been indicated at previous discussion and has been founded by Dian Desa's survey for Real Demand Study in 1991.

If we look in-depth the relationships between household income and infrastructure distribution at Kecamatan level, various relationships will be found in more detail. In Mujamuju (Y/UH/13) household income is considered very high, but the quality distribution of infrastructure is very low. Another example is that all Kalurahan where the migrant pockets are taken place: Prawirodirjan (Y/GM/25), Notoprajan (Y/NG/28), Tegalpanggung (Y/DN/32), and Terban (Y/GK/37) are considered very low and low income (except Notoprajan), but they are covered by high quality distribution of urban infrastructure (see appendix 15).

5.2.2. The urban fringes or sub-urban areas.

The distribution of urban infrastructure at Kecamatan level in the urban fringes, Sleman and Bantul, are considered low and very low which is represented in map 3. The spatial pattern of infrastructure distribution shows the distinction pattern between urban centre and urban fringes. Low quality distribution can be found in Kecamatan Ngaglik and Mlati in the north (Sleman) and Banguntapan in the south-east (Bantul). While Depok in north-east and Gamping in west (Sleman) and two Kecamatan in Bantul: Kasihan and Sewon in the south-west part of urban fringes, are covered by very low quality distribution of infrastructure.

If we compare this pattern with detail situation, we can interpret the fact findings as follows:

- Most of urban infrastructure are concentrated in urban centre. This pattern is significantly related to the population density (see the pattern of map 1 and 3).
- Eventhough the recent trend shows that some rich people build their house in sub-urban areas, but surrounding the settlement is considered poor infrastructure.
- Some real estates were build by public and private sectors in sub-urban areas. They provide infrastructure as a part of 'selling point' of advertisement. Eventhough some real estates are provided by sophisticated infrastructures only within the real estate complex, but surrounding the real estates are still considered poor infrastructure.
- Sub-urban areas or urban fringes basically still rural with agricultural activities. Since two decades ago those areas have been transforming from rural to urban area. In reality, there are still many paddy field, dry agricultural land, and yards or gardens can be found in urban fringes. Even, the latest housing design (continental or postmo) emerged surround paddy field in urban fringes.
- The development of new settlement are scattered following the main road network in sub-urban areas.

Regarding household income, the distribution of infrastructure can be related as follows:

- High income in Gamping (Sleman) and medium income in Sewon (Bantul) are covered by very low quality distribution of infrastructure.
- Low household income in Depok (Sleman) has very low quality distribution of infrastructure.
- Very low household income in Ngaglik and Mlati (Sleman) and Banguntapan (Bantul) are covered by low quality distribution of infrastructure.
- Only Kecamatan Kasihan (Bantul) which has very low household income is significantly related to very low quality distribution of infrastructure.

Those phenomena should be interpreted that in urban fringes of Yogyakarta, the

relationships between household income and urban infrastructure distribution are mixing. It is also can be concluded that the distribution of urban infrastructure in Yogyakarta is unbalance; most of urban infrastructure and urban services such as business centres are concentrated in urban centre.

CHAPTER SIX
FURTHER DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

6.1. Further Discussion: The implementation of the IUIDP in Yogyakarta

The concept of the IUIDP has been implementing since 1989 in Yogyakarta under YUDP - Yogyakarta Urban Development Project. This project basically a cooperation work among the three local government Tk II: Yogyakarta municipality, Sleman and Bantul districts. Since the IUIDP is a new concept of urban infrastructure development, the central government cq Directorate General of Human Settlement of PW initiate to introduce the concept and its implementation to local government. This project is funded by SDC - Swiss Development and Cooperation. Under certain agreement, they appointed two main consultants one from overseas namely Electrowatt Engineering Services LTD (Switzerland) and the other one from Indonesia, Hasfarm Dian Konsultan.

One of the strategy in the implementation of the IUIDP programme in Yogyakarta is a 'learning by doing'. It is an effort to do planning with new concept in a learning process atmosphere among the three local government cq BAPPEDA Tk II together with the consultants and the central government. So, the IUIDP concept can be transferred from central to local through learning by doing process and so, the central government can reflecting the experiences. In fact that the strategy is not smooth to be implemented. Some bottlenecks and barriers, which was discussed before, are exist during implementation of the IUIDP concept.

Reflecting from this situation, the implementation of the IUIDP is still highly dependence on central government and foreign funding. One of the example is that the agreement of YUDP funding or SDC grant was negotiated and decided in central level under the argument that this business is a bilateral cooperation. So, in this process the three local governments seems to have few access to negotiate directly with foreign funding or in other word this business should be under control by central government. Subsequently, the appointment of consultants was also decided in central level. If the negotiation and decision making in this stage still in the central level, perhaps they consider that the local governments are not capable yet to run the IUIDP concept and perhaps there is no qualified consultants in Yogyakarta. Perhaps Gasper's observation, that the national policy-makers appear at present unwilling to transfer substantial powers to local decision makers, also exists in Indonesian case. So, the decentralization concept still far behind being implemented.

Most of the YUDP documents are formulated by the consultants. Of course they are always discussing with the three BAPPEDA Tk II and other dinas in Yogyakarta. Here we can say that the three local governments are highly demanding on consultant products. Many experiences show that there are always a gap between consultant ideas and bureaucrats attitudes to formulate the problems and to respond them. Under IUIDP-YUDP project, the gap has been reducing in many

efforts through learning by doing and job training. It seems that eventhough at the early project the central government and the consultant have been dominating the planning process, but by the time they do effort to reduce their role in the process and give more responsibility to three local government to deal with. Beside the relationship between central-local government in the implementation of the IUIDP and planning process, an involvement of local community organization also has been done.

One of the interesting point in the implementation of the IUIDP-YUDP is the involvement of a Non-Government Organization - Yayasan Dian Desa in formulating the Real Demand Study. It should be understood that the involvement of Dian Desa is reflecting the argument of decentralization, namely participation of local community and local organizations in development process. The involvement of Dian Desa in YUDP also can be analyzed by the fact that Dian Desa has close cooperation with SDC, even before the IUIDP-YUDP is being implemented. They have cooperative projects in community development together with other NGOs in several areas in Indonesia. It means that Dian Desa has an access directly to SDC, even more than the three BAPPEDA Tk II. Perhaps concerning SDC to support YUDP is because, one of their reason, of experiencing by Dian Desa's cooperation projects. In addition, Dian Desa has a good performance among the local and central government in the sense that Dian Desa is a cooperative organization, not an opposition organization. In the government point of view, this political tone is very important in development project. Here we have to questioning whether the involvement of NGO is only in early stage on formulating RDS or they have opportunities to influence in the following steps especially in planning and decision making in YUDP?. It seems that the involvement of NGOs and other community organizations in planning and decision making is still remaining unclear.

Regarding foreign grant SDC in financing Yogyakarta urban development project, the question should be raised "how is the continuity of the project after SDC grant; is the local government capable to finance the YUDP and to make planning for the IUIDP programmes?". As we discuss before step by step transfer of responsibility will be given to local government. It will become smooth if the local government makes initiatives to appreciate the new responsibility and to do innovative work in order to implement the new concept of urban development. Also it is important to emphasis on coordination among the three local government and their dinas, to establish a communication or forum among local government and their society groups or institution such as private enterprises, NGOs/CBOs, universities/research centres; in order to mobilize potential resources including finance and to develop them. Those efforts will answer that question and will fulfil local demand or community needs based on their own resources.

Coordination became one of emerging issues, especially when the three local governments have different interest in "where are the location of investments taken place and how are the development funds and the revenues flow". Particularly in urban fringes where development

activities are growing, the different interests are happen. A real example is about taxation: taxes in urban fringes which are collected by local government of Sleman and Bantul, whether will be reinvested in urban fringes or can be invested in other areas of Sleman and Bantul. Another example is releasing licences in urban fringes: whether it should be under control of Mayor of Yogya municipality or it is under Bupati of Sleman and Bupati of Bantul. The development of urban fringes became a crucial issue in allocation or investment and taxation.

Communication is also important vehicle to spread the IUIDP concept and to channel community aspirations in urban development. I impressed by Hartomo, the Mayor of Surakarta municipality, when he went to meet with community groups at kalurahan level, students in high schools and universities, even in pesantrens or muslim schools. He created 'Sarasehan', a less formal meeting to discuss government's plan and to gather community aspirations. He was doing hard work to spread the ideas of development to the audience as well as to get aspiration from community. Eventhough he was criticised by some people of his domination in the dialogue and his top down approach, but the results are amazing. Many people were inspired by the dialogue and motivated by the government's programmes. Then, the 'snow ball' of motivated people as well as his staffs become faster and bigger in achieving the progress in settlement and urban development. Through promoting a motto "Solo Berseri" (Solo means Surakarta, Ber is bersih or clean, Se is sehat or healthy, and Ri is asri or harmony), people as well as government do some efforts to implement their ideas and planning. Since the middle of 1980s, Surakarta has received "Adipura prize" for several years. In case of Yogyakarta, I did not see such efforts in order to spread the new concept of urban development as well as to gather community aspirations, in order to formulate the documents of the IUIDP-YUDP project.

After we discussing the planning process of the IUIDP programme, let move to the issues which are related to development trends. Here we will focused on some specific issues such as: spatial development, infrastructure problems, and household income related to financing the programmes.

In some cases of development tends indicate that spatial development is beyond the control of YUDP project. One of the real examples is that when the YUDP project has planed green zones, the local government of Sleman was releasing a licence to a private university (UII) to develop a campus in green zone area. The UII campus has been build and suddenly land price surrounding the campus (within the green zone) were increasing sharply. Many experiences show that a huge campus will leads a multiplier economic activities in surrounding areas. New dormitories, student houses, shops and services, have been growing by local community and investors. Then the green zone became meaningless if many buildings were developed rapidly in these areas.

So, which one it was wrong: the concept or the development trends?. It seems that such question often emerges in a crucial issue or a problem and it is difficult to get the answer

properly. Here we can reflect two things: First is that the IUIDP concept and the licence to develop and to build in a land are not integrated yet. Second is that there are many different interests in urban development in which the planners should commit with. The planners as well as decision makers should have capability to transform these potential conflicts to become a dynamics of development.

In many cases, communication and coordination as well as negotiation process play role in the results of decision making. Recently, it seems that private sector became more important in development process. Given the fact that under SAP, privatization is promoted to generate economic growth and private sector became more and more powerful. Local government has to respond this changing situation to empower their selves and give a chance to community to express their aspiration in a freedom and in an open political environment. So, a situation which we hope in near future is approaching a balance position among urban actors in development process.

The urban infrastructure development in YUDP project is limited on the public work, other infrastructures such as electricity and telecommunication are still under other government institutions. There are many evident that the development of urban infrastructure in general is still lack of coordination. One popular example is a problem of "dig hole and fill hole", a ridicule term of disintegration of infrastructure projects, in maintenance or reparation and in development of piped water, drainage system, telecommunication cable, electricity and roads. One dinas just already finish their project, other dinas start their project in the same place. There can be identified some bottleneck in implementation and integration:

- There are different institutions or dinas which have responsibility to provide infrastructure. Each of them have vertical instructions (top down) with their upper level, but lack of coordination with other institution at similar level.
- Each institutions or dinas has capacity to implement the programmes, especially related to financial resources.
- Lack of standard in term of financial, technical, administration and management. For example one dinas have to invest this year, other dinas still waiting for decision from upper authority and waiting for financial liquidity.
- There are different priority among the dinas or institutions to invest their budget of development.

I have to mention that the YUDP project has been doing to deal with that problems and to solve them. It can be seen in their strategy to involve those dinas and integrate them in planning process. The project has already started to promote better coordination, to integrate the programmes, and to implement them while improving urban (infrastructure) management. YUDP project has done a lot of jobs to transform the planning system and the management of urban infrastructure and services provision, but the situation and the challenge is still huge. It seems that

the government alone is not enough to tackle the problems. A partnerships among urban actors or stakeholder such as private sector, NGO and community based organization, university and research centres have to be set up in order to make better understanding of the problems and the strategy to solve them.

Household income is not stated explicitly in the policies and strategies of urban development in Yogyakarta. Household income is important to be considered in new approach because of a reflection of capability of people to pay services and charges. Policy 3 is more emphasis on economic activities in general "Economic development will be supported by economic zone in city centre of Yogyakarta and the five strategic location in ring road (urban fringes)". Subsequently formulation of strategy 3 shows that the policy concentrated on main economic activities such as indicated as follows "Economic zone in Yogyakarta and other five economic zone should be considered for main economic activities development such as: tourism, education centre, manufacture and other related economic sectors". According to our analysis on the pattern of household income and its relation with urban infrastructure, it strongly suggests that the infrastructure problems should be followed up based on household income.

Policy 4 issued infrastructure development which mainly concentrated on the spatial pattern plan: "Infrastructure development will follows spatial pattern plan in urban region which hold population growth and in economic development zone". Here the policy is not based on the household income pattern. Household is one of the main source of taxation and charges. Land and property tax mainly came from household level and most of the user of piped water, garbage services, electricity, telephone etc basically are households. If the government want to increase their revenues and to mobilize local resources which are basically contributed by household, then the government have to develop a framework of policy based on household level.

6.2. Conclusions

This research is basically to explore the core question "does spatial distribution of household income relate to urban infrastructure problem and how are government policies tackle this problem?". Further this question was put in the context of decentralization process in urban infrastructure provision and in a case study of Yogyakarta.

The main findings of this research are based on the analysis of the pattern of relationship between population density, household income, and infrastructure distribution. The main findings and their conclusions are as follows:

- Most of population in Yogyakarta are concentrated in urban centre. It has been shown by analysis of the map pattern and by explanation of the migrant pockets. Most of the migrant pockets are close to business zone in urban centre. Those patterns can be concluded that people prefer to stay close to urban centre because of their work place in urban centre or in business zone. In addition urban centre is attractive to people because

of many facilities, services, recreation and amusement areas are taken place.

- Statistical data approved that population growth in urban centre was increasing during 1970s then continually decreasing in 1980s. Significantly, population growth in urban fringes have been increasing sharply since 1980s. It indicates that urbanization process in Yogyakarta then followed by conurbation process. Several reasons of moving people to sub urban are related to better environment, improving road network and transportation, development of new settlements or real estates and public facilities such as telecommunication shops, markets and shops, and education centres in sub urban or urban fringes of Yogyakarta.
- The pattern of spatial distribution of household income at kecamatan level in Yogyakarta shown that very low household income can be found at kecamatan level in urban centre and urban fringes. Very low household income in urban centre are related to the migrant pockets settlement which most of the people are working in urban economic sector both formal or informal but they receive small amount of salary or income. While very low household income in urban fringes have different characteristics, most of them are working at a small agricultural land in sub urban or working as low wages labour in urban area.
- Some evident show within kecamatan level in urban centre, we can found the migrant pocket area or 'kampung' which relatively poor in term of household income and infrastructure exist side by side with high class settlement area. Regarding to the trend of settlement development in sub urban, eventhough sub urban areas are considered as low income but the recent tendency shows that some rich people build their new houses and some high income household are moving to new settlement areas or real estates. It can be concluded that household income distribution at kecamatan level in Yogyakarta is considered mixing. It means that in many cases, rich households are neighbouring with poor households.
- The result of map pattern analysis shows that infrastructure distribution in Yogyakarta basically are concentrated in urban centre, especially in old and important settlement areas. Infrastructure in most of kecamatan in urban centre are considered better than in urban fringes, even one kecamatan with very low income has bee covered by high quality distribution of infrastructure. While all kecamatan in urban fringes are covered by low and very low quality distribution of infrastructure. If we look in dept at kalurahan level, then we will found that some kalurahan or kampung in urban centre are insufficient of urban infrastructure; while some kalurahan or real estates in sub urban are covered by very high quality of infrastructure. Here we have to consider the characteristics of the problems in order to launch the IUIDP programmes. It can be concluded that the relationships between household income and urban infrastructure distribution at kecamatan level are mixing.

Those findings and their conclusions should be related to the government policies on urban development specifically on the decentralized urban infrastructure and the implementation of the IUIDP programme.

- The government policies on urban development, subsequently the decentralized urban infrastructure or the IUIDP, have been launched on the situation of the implementation of Structural Adjustment Programme. The decision on decentralization is mainly done by central government when they feel politically secure and when the economic situation forced them to do so. It seems that decentralization process is not an efforts and initiatives of local government but a political economic decision of central government. If we refer back to the concept of decentralization, we can say that decentralization is not achieved yet but the direction to decentralization was already decided. Then the process depends on the involved parties and actors, especially local government and local community groups including private sector to make a better situations and improvements.
- The implementation of the government policies which are illustrated, so far, faces the problem of reality that the local government has limited control of resources, limited local capabilities, and highly dependent on assistance from higher government level or consultants.
- Our discussion, reflection, and critical analysis on the implementation of the IUIDP concept and a new approach in urban development, particularly in Yogyakarta urban development project, indicated that the IUIDP planning process remaining (in practice) a centrally driven process with regard to technical capacity and access to finance.
- Household income reflects a capability of household to pay services and infrastructure provision. Household income is not considered yet as a main important aspect in Yogyakarta urban development policies and strategies.

6.3. Recommendations

In order to deal with bottleneck problems and shortcoming resources in urban development, this research formulates a recommendations which are basically to empower local government, to emancipate community especially poor and powerless people, and to transform a better system in urban management. The recommendations are as follows:

First, the government should focuses their programme in area where very high population density with low income household. It means that KIP scheme, a partnership between local government and community, should be promoted to combat poverty and the infrastructure problems in kampung settlement in urban centre. While in urban fringes, partnership between local government and private sector is promoted to develop new planed settlement and new economic (business) zone centres.

Second, in order to conserve green zone, the government should approach the community and other related institution to shape a similar perception or commitment of conserving their area. The green zone in the north Yogyakarta is very important to protect ground water pollution, flooding, and other environmental destructions. In case of the development of UII campus in the north green zone, it is recommended to create a "Green Campus". It means that civitas academica should create a programme to conserve their campus as well as it surrounding settlement areas.

Third, regarding local resources mobilization, household income and local participation which are reflecting a capability of local people to respond the government programmes, should be considered as a main determinant in developing urban infrastructure. Therefore it should be formulated explicitly in urban development policy and strategy. A part from local resources mobilization, local participation should be understood in a broad perspective; not only in term of physical materials or financial, but also in term of aspiration and initiative as an expression of democracy. The government have to respect to communities' own programmes at neighbourhood level and communities' voice in planning and decision making process of development.

Fourth, in order to empower local government as well as to promote local participation in urban development process, an "Urban Forum" is suggested as a forum for communication and consultation among urban actors. This forum is not a government institution, but a society organization which consists of people who commits in urban development such as government staffs (Bappeda), member of parliament (politician), professionals and member of associations (eg HIPMI, REI, INKINDO, etc), activists from NGO/CBO, as well as intellectuals based on campus. This forum is proposed to be initiated by intellectuals based on campus. The Department of Urban Management, Faculty of Post Graduate - UGM, which is believed as an intermediate institution between government and community, may take this opportunity to initiate the "Urban Forum".

Fifth, training and education is believed as a strategy to transform the system as well as the person into a new perspective. Since the IUIDP is a new approach, training and education is considered very important to disseminate the approach as well as to shape the concept. Training programme within the IUIDP should give more opportunity to local government Tk II who are expected to tackle the implementation of IUIDP as well as to community and private sector who are the main actors in urban development. In education, a long term of consciousness and a broad way of learning, YUDP should design an education programme which can be implemented as a simulation or a game at schools, universities, and community groups. Further the local government should supports students' or communities' initiatives to create seminars, discussions and sarasehan.

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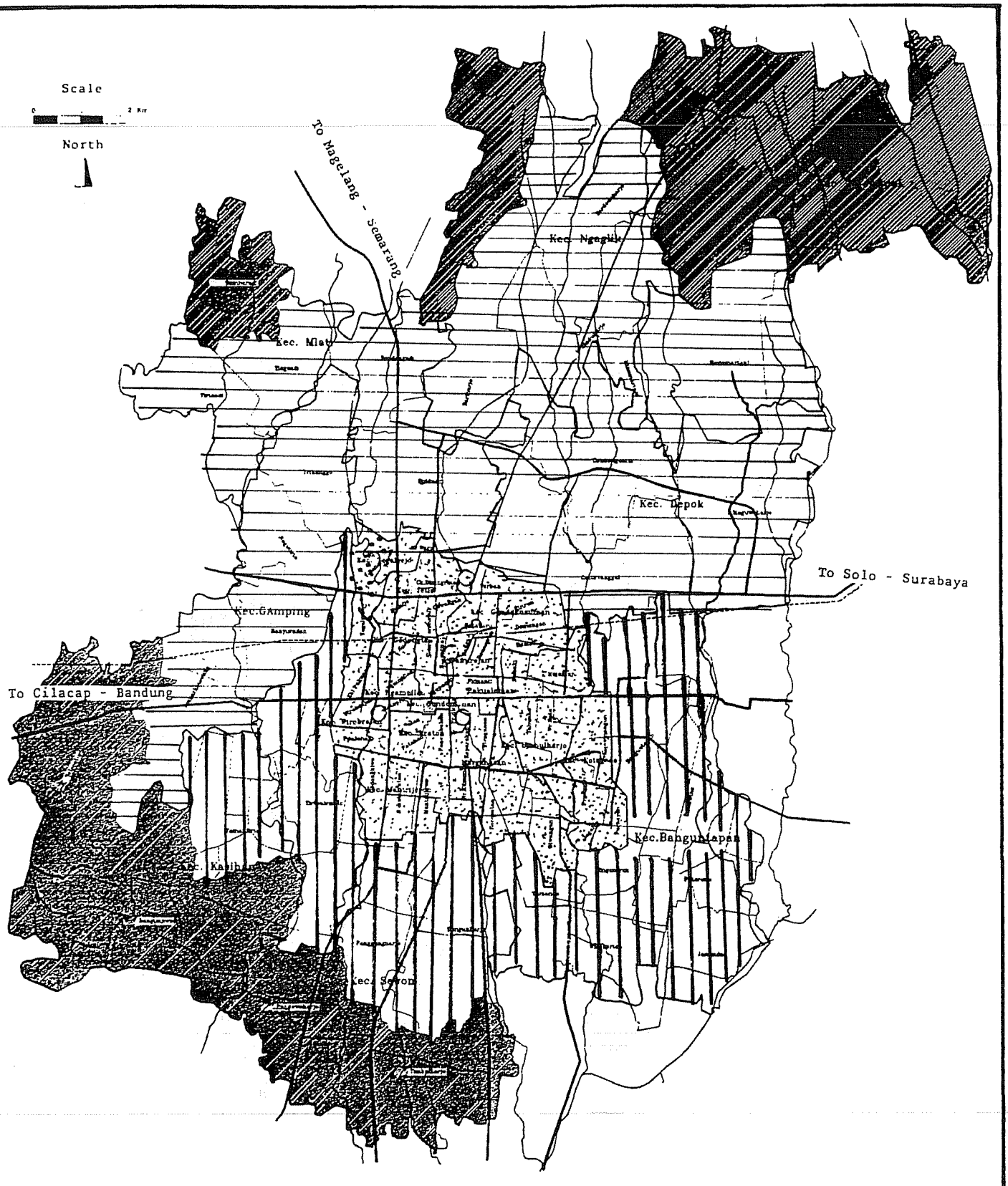
MAIN CITIES IN INDONESIA
Banda Aceh
Medan
Pakanbaru
Padang
Palembang
Bengkulu
Bandar Lampung
Jakarta
Semarang
Bogor
Bandung
Yogyakarta
Surakarta
Surabaya
Malang
Denpasar
Mataram
Pontianak
Palangkaraya
Banjarmasin
Samarinda
Ujung Pandang
Manado
Palu
Kendari
Dilli
Kupang
Ambon
Jayapura
NORTH
Western Indonesian Time
Central Indonesian Time
+ 1 hour
Eastern Indonesian Time
+ 2 hours
± 5000 kms
JAVA, BALI &LOMBOK
DKI Jakarta
Bogor
Bandung
Semarang
Surakarta
Surabaya
Malang
Yogyakarta
Denpasar
Mataram
PROVINCES :
1. D.I ACEH
2. NORTH SUMATERA
3. WEST SUMATERA
4. RIAU
5. JAMBI
6. SOUTH SUMATERA
7. BENGKULU
8. LAMPUNG
9. DKI JAKARTA
10. WEST JAVA
11. CENTRAL JAVA
12. D.I YOGYAKARTA
13. EAST JAVA
14. BALI
15. WEST NUSA TENGGARA
16. EAST NUSA TENGGARA
17. IRIAN JAYA
18. MALUKU
19. NORTH SULAWESI
20. CENTRAL SULAWESI
21. SULAWESI TENGGARA
22. SOUTH SULAWESI
23. EAST KALIMANTAN
24. SOUTH KALIMANTAN
25. CENTRAL KALIMANTAN
26. WEST KALIMANTAN
27. TIMOR TIMUR
Metropolitan area
Large cities
Other provincial capital cities
Note : Bogor, Malang, Surakarta are not provincial capitals

Appendix 2



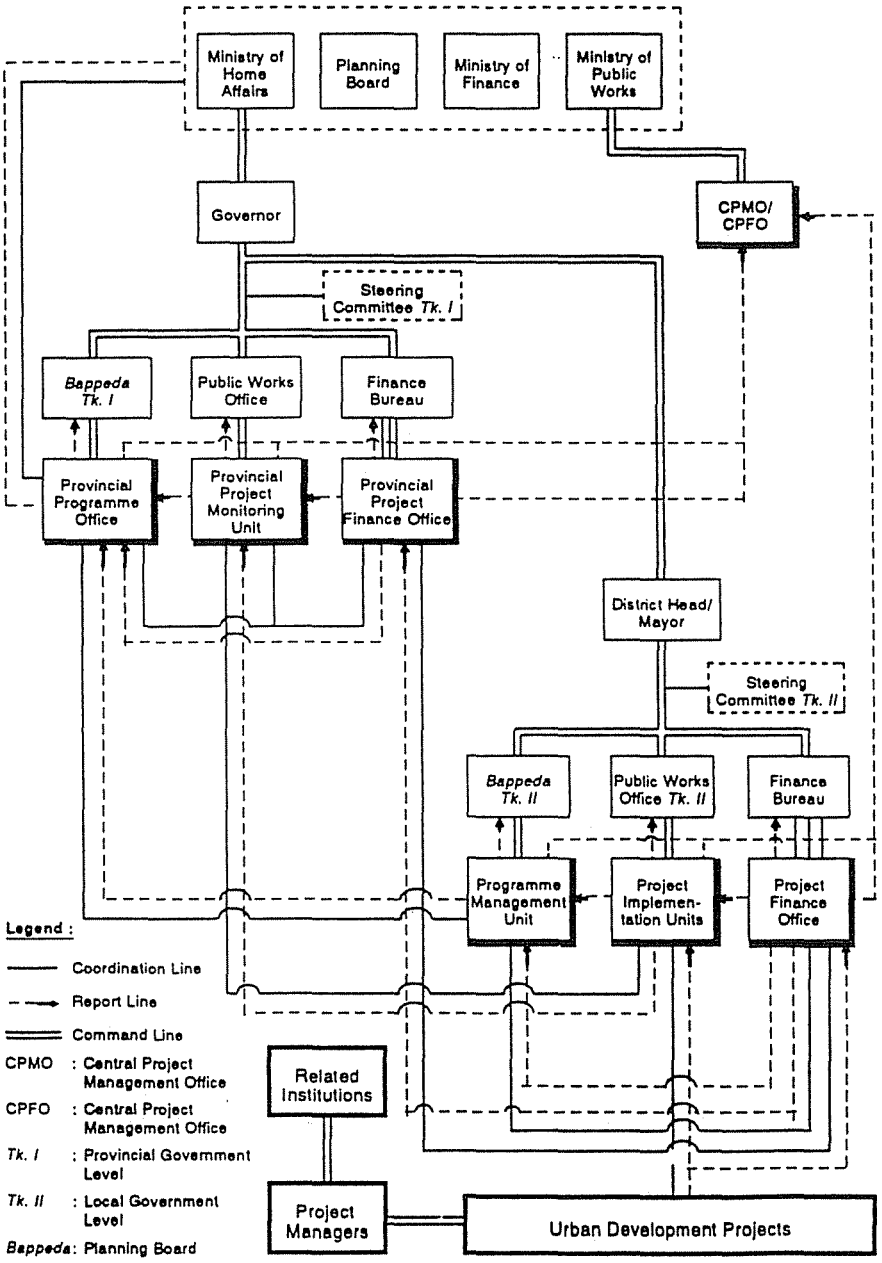
YOGYAKARTA URBAN AREA

Legend :

- Kalurahan boundary
- Kecamatan boundary
- Main road network
- River
- Green belt zone
- Yogyakarta Municipality
- Sleman urban fringe
- Bantul urban fringe
- Business zone
- Slum or migrant pocket

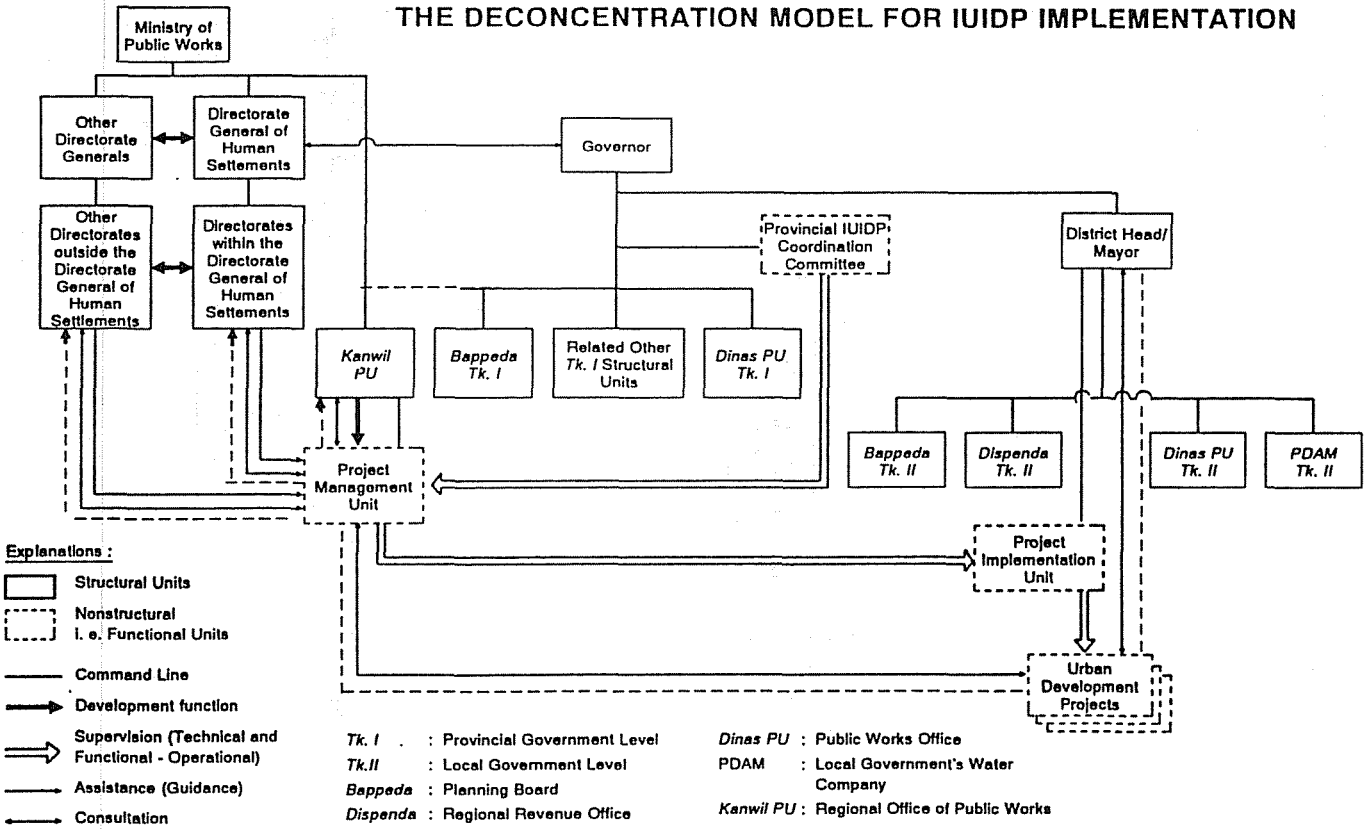
Appendix 3

THE DECENTRALIZATION MODEL FOR IUIDP IMPLEMENTATION



Source: Soekardi, 1992

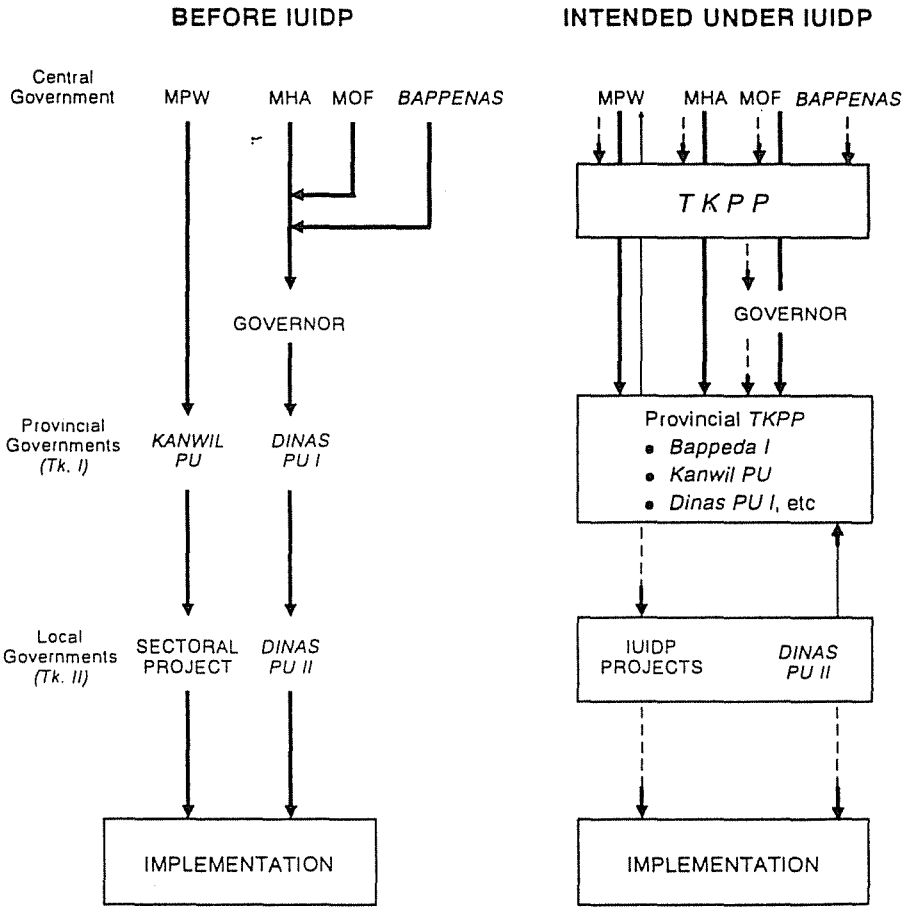
THE DECONCENTRATION MODEL FOR IUIDP IMPLEMENTATION



Source: Soekardi. 1992.

Appendix 5

PROGRAMME PREPARATION AND IMPLEMENTATION : BEFORE AND UNDER IUIDP



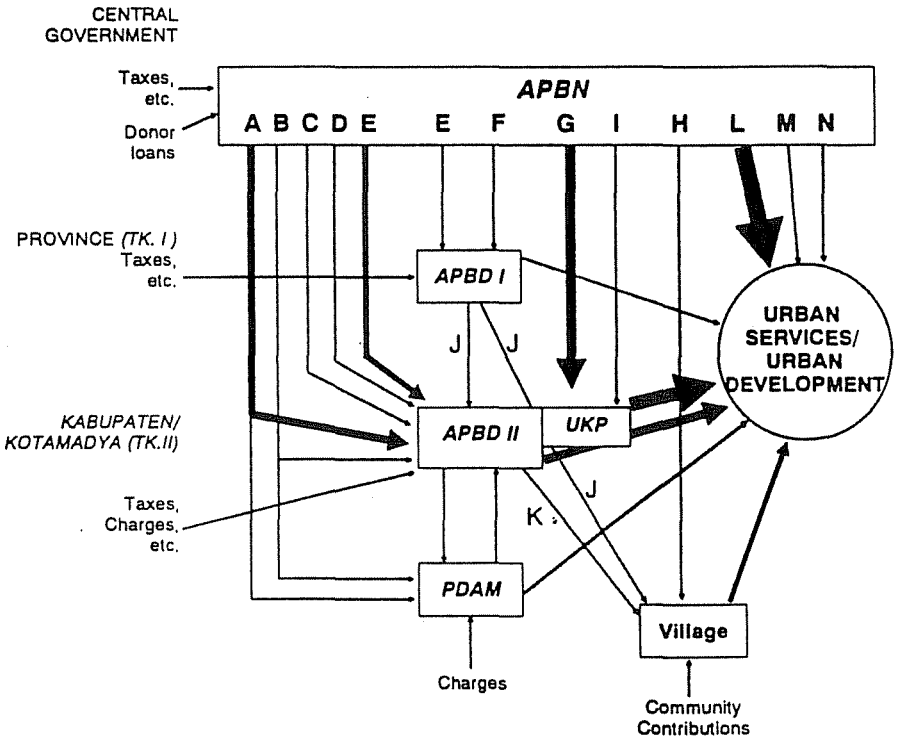
Legend :

- Instruction Line
- Guiding Lines
- Bottom-up Proposal

MPW	:	Ministry of Public Works
MHA	:	Ministry of Home Affairs
MOF	:	Ministry of Finance
BAPPENAS	:	National Planning Board
TKPP	:	Coordination Team For Urban Development
Bappeda	:	Local Planning Board
Kanwil PU	:	Deconcentrated Office of The Ministry of Public Works
Dinas PU	:	Public Works Office

Source: Soekardi. 1992

Financial Flows for the Urban Sector : Public Sector and Community Contributions



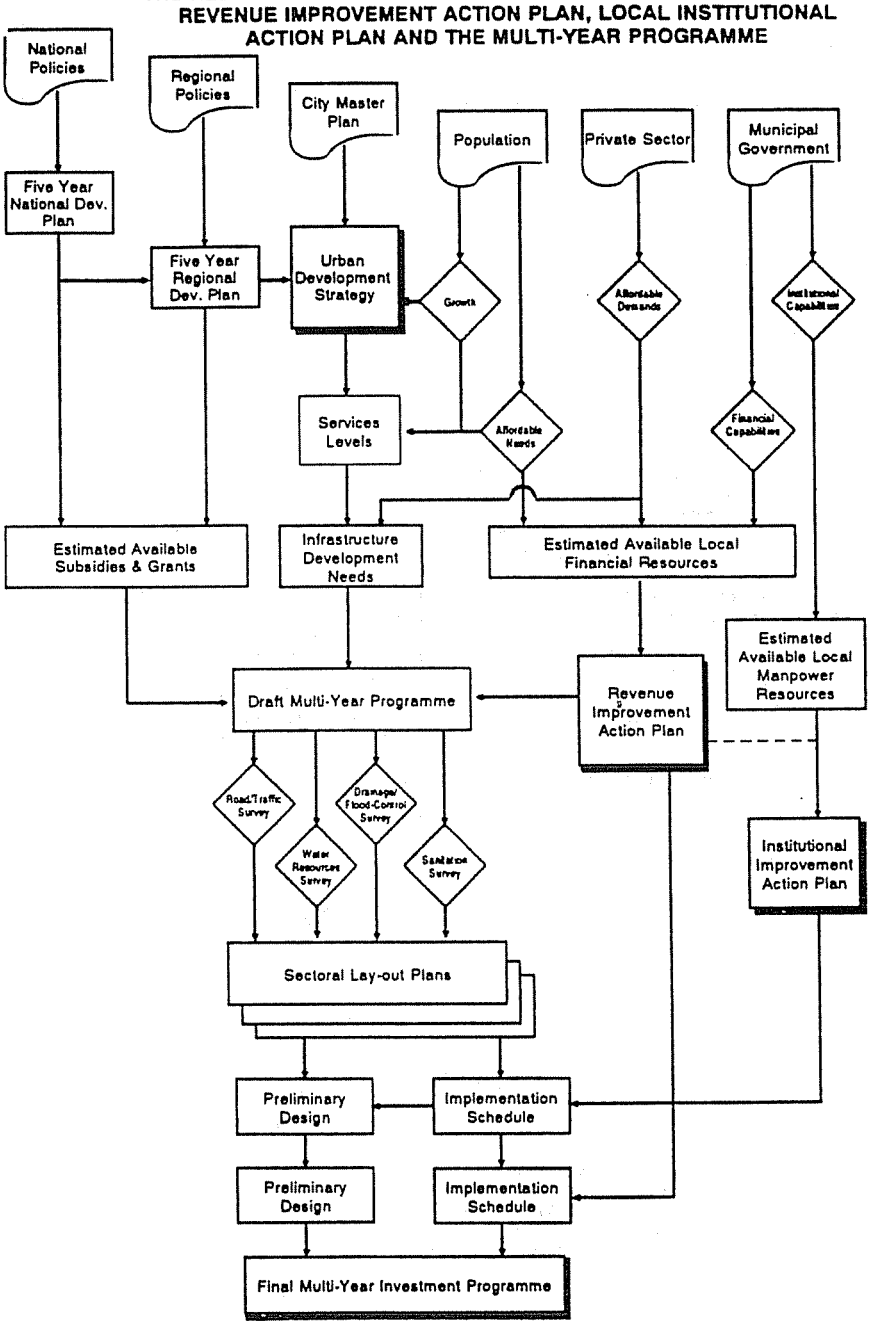
KEY + ABBREVIATIONS :

A = Donor Loans on-let
B = Government Equity *(PMP)*
C = Government Loans *(RDI)*
D = *Inpres* Pasar Loans
E = Staff Grant *(SDO)*
F = *Inpres Dati I*
G = *Inpres Dati II*
H = *Inpres Desa*
I = Sectoral Inpres *(SD, Kesehatan, Jalan, Penghijauan)*
J = Province grants to lower levels
K = *Dati II* grants to villages
L = *Dep PU. DIP*
M = *Dep Perhubungan DIP*
N = *Depdagri DIP*
PJM = Multi-Years Investment Plan
PDAM = Regional Water Supply Enterprise
UKP = Development Works Unit *Tk II*
APBN = National Budget
APBD I = Regional Expenditure budget at Provincial Level
APBD II = Regional Budget at *Kabupaten* (district) and Town/*Kotamadya* Level

note : Thickness of lines indicates approximate degree of importance of funding source for urban sector
(based on : Devas, N., Financing Local Government in Indonesia, Athens/Ohio 1989, p.251.)

Appendix 7

THE RELATIONSHIP BETWEEN THE URBAN DEVELOPMENT STRATEGY, REVENUE IMPROVEMENT ACTION PLAN, LOCAL INSTITUTIONAL ACTION PLAN AND THE MULTI-YEAR PROGRAMME



Source: YUDP project. 1991

Appendix 8
Multi-year Investment Program for IUIDP in YUDP

I. Water supply

A. Long-Term Development Policy

A.1. Objective

The main objective of the policy is to increase the access to safe drinking water by increasing the coverage of piped water supply drastically and by improving the quality of the non-piped facilities in the remaining areas.

The long-term target of the development of water supply system is to serve more than 56% people in YUDP. This target will be prioritized to this rules:

- 100% target coverage in area which is very high population density (> 300 persons/ha).
- 80% target coverage in area which is medium-high population density (100-300 persons/ha).
- 40-50% target coverage in area which is medium-low population density (50-100 persons/ha).

A.2. Program

- maximal of the use of existing piped-water transmission and its production through: (1) increasing number of costumer in their house connection and public taps (2) saving the water by reducing the water consumption per capita (3) improving capability of PDAM/PBAM - public water enterprises.
- Finishing the inner circle of transmission distribution.
- Enlargement of transmission distribution.
- Finishing the outer circle of transmission distribution which is parallel with ring-road.
- Integration of piped water transmission of some public water enterprises: PDAM, BPAM, IKK and institutions.
- Development of water production from deep groundwater, springs, and shallow groundwater.

B. Medium-Term Development Program

B.1. Target

- Master plan of water supply which consist of outline plan of primary system, calculations of transmission distribution, study of extension and promotion, alternative study of public taps, study and action plan or development of public water enterprise.
- increasing the coverage of piped water supply in YUDP from 15% of population in 1991 to 28% of population in 1996/97.
- improving the services for customer through improving the quality of the water, improving the maintenance of the installation facilities, etc.

B.2. Program

- Rehabilitation and optimalization of existing piped-water transmission in Yogya and Sleman.
- Enlargement of the transmission in Yogya and Sleman.
- Development of new piped water transmission in Yogya and Sleman.
- Development of PDAM and BPAM not only technical and environmental aspects but also non-technical aspects such as: financial management, costumer services, and public relations.
- Development of institution: this program is based on master plan of PDAM and some studies such as 125 sectoral water supply project (IKK), 20 BNA cities project, studies by the Directorate of Water Supply Department of Public Work (PPSAB/BPAM). The renewal master plan of water supply will coordinate water supply activities and propose institutional development. One of the alternatives is that all piped water enterprises in YUDP under one 'umbrella' enterprise (Perusahaan Daerah). This alternative make some possibilities to integrate the services, cross subsidy, scale efficiency, to get loans to support renovation and mid-term programs of water supply.

B.3. Budget for mid-term program

The total cost is Rp 19,985,000,000,- which be divided by Yogya Rp 8,634,000,000,-, Sleman 7,300,000,000,-, and Bantul Rp 4,051,000,000,-. Cost of operation and maintenance is Rp 10,798,000,000,-. O&M is not part of mid-term program of water supply development. The budget without O&M will be covered by RDA/loan 7%, APBN 65%,PDAM 22% which is totally 95%. The other perhaps will be financed by BLN/grant 5%.

II. Drainage

A. Long Term Development Policy (2005)

A.1. Objective

Long term development policy has objective to drain rainfall further to alleviate flooding and temporary flooding (pounding). This program has aim to develop integrated drainage system in YUDP (Sleman, Yogya, Bantul) in:

- operation and maintenance
- reducing flooding and pounding
- improving environmental condition related with drainage

A.2. Environmental aspect related with drainage

- developing percolation well to recharge ground water
- developing water body such as small lake

A.3. Drainage system

Drainage system in YUDP has to follow the standard function of channel:

- collector channel (tersier channel): collecting surface water from household and settlement area, this channel is planned and operated by community or neighbourhood (rukun warga).
- branch channel (sekunder channel): collecting water from collector channel and flowing to main system. This system is founded by APBD Dati II.
- main channel (primer channel): collecting water from branch channel and flowing to main drainage system. This system is planned and maintained by APBD Tk I and APBN through public work department.
- main drainage channel has a function of collecting and flowing the water to rivers
- collector channel or pounding
- percolation well

B. Mid-Term Program (1992/93 - 1996/97)

B.1. Drainage Master Plan

This study is very important as a framework for long term development. This study consist of an urban region Sleman, Yogya, Bantul which is supported by ledger drainage or drainage information system.

B.2. Physical Development

- maintenance existing channel
- rehabilitation existing drainage facilities
- development new drainage system

B.3. Priority of Program
- 38 flooding location in Yogyakarta and 15 in Sleman
- drainage system in predicted area
- vital area
- heavy populated area

B.4. Investment

Total project cost on drainage improvement program (1992/93 - 1996/97) is Yogya Rp 7,011 million, Sleman Rp 7,744 million, Bantul Rp 1873 million, so total YUDP Rp 16,628 million. This budget could be collected from: RDA/loan 11%, APBN 41%, Inpres II 8%, APBD I 14%, APBD II 9% and foreign grant 17%.

III. Sewerage and sanitation

A. Long-Term Development Policy (2005)

A.1. Target

Long-term target on sanitation and sewerage system is that 77% of YUDP population can be served by on-site sanitation and 14% by off-site sanitation. Explanation on detail as follow:
- 95% off-site sanitation can cover on high populated areas (>300 persons/ha) and only 5% on-site sanitation.
- 30% off-site sanitation can cover on medium-high populated areas (100-300 persons/ha) and 65% on-site sanitation.
- More than 80% sanitation (non riool) can cover on medium-low populated areas (50-100 persons/ha).

A.2. Programs

To achieve those targets, several programs was formulated by YUDP (July 1991):
- Maximizing the use of sewerage system through improving number of household sanitation connections.
- Enlargement of sewerage system to cover sanitation on high populated areas.
- Technical improvement and coverage development of on-site sanitation.
- Improvement of maintenance service or cleaning septic tank service.
- Constructing faecal and sedimentation treatment in collected sanitation and in off-site sewerage system.
- Extension program and credit scheme to promote on-site sanitation in low income household and sub-urban areas.

B. Medium-Term Program 1992/93-1996/97

B.1. Targets

Sanitation improvement program is targeted in medium-term to serve 65% of population of YUDP. Detail targets of sanitation improvement per sub-region are: Yogya from 88% to 95%, Sleman from 48% to 52%, and Bantul from 27% to 33%. Sewerage improvement program is only targeted in Yogya from 7% (or 3% of YUDP) to 14% (or 6% of YUDP) population.

- In very high populated ares (> 500 persons/ha) and surface slope is 2%, enlargement of sewerage system (off-site sanitation) is the best way. Another alternative is constructing small bore sewerage.
- In medium and low populated areas, development on-site sanitation is possible with some technical treatment to reduce ground water pollution.
- MCK (bathroom, washing, WC - public facilities) is suggested to develop in low income settlement and high density population settlement.

B.2. Programs

Off-site sanitation:
- Optimalization of riool network or sewerage system through increasing coverage two times (4500 units) by subsidy and revolving fund.
- Construction of sewerage water treatment in a terminal of sewerage system to reduce pollution.
- Enlargement of non-riool coverage, especially enlargement of on-site and off-site system together with treatments.
- improvement of maintenance service.
- extension and marketing to develop sanitation system. This program is aimed to improve understanding of sanitation and to enlarge household sanitation connections.
- Feasibility study of technological and managerial to develop sewerage system.

On-site sanitation:
- Improvement of on-site sanitation (technological choices) and development covered area (member of household will built on-site sanitation). High populated areas will be prioritized to improve more than less populated areas. Low covered on-site sanitation will be targeted to develop more than high covered areas.
- Master plan of sanitation especially focusing on technical specification and detail design per specific areas with considering environmental aspects (topography, population, ground water, etc).
- Sanitation planning which consider social acceptability, environmental healthy, and financial feasibility.
- A pilot project is operating together with credit and revolving fund.

Government budget will be allocated to this program during 1992/92 - 1996/97 approximately Rp 939,061,000,- for Yogya, Rp 258,379,000,- for Sleman, 217,789,000,- for Bantul. Some assumption have to be considered:
- Construction cost of one on-site sanitation Rp 3000,000,-
- Financed by household 40% Rp 120,000,-
- Subsidize by government 10% Rp 30,000,-
- Period of repayment is 2 years
- Interest is 10% per year
- Repayment per month is Rp 6,920,-
- Period of extension is 1 year
- credit is 5%
- Financial manager 4% of OC Rp 12,000,-

(Source: YUDP calculation, July 1991).

IV. Garbage Management

A. Long-Term Development Policy

A.1. Long-Term Target

The target of garbage management (collection and processing) is to serve more than 84% of YUDP population. The target in detail as follow:

- 100% of population will be covered by garbage management in certain targeted areas: high population density areas (>300 persons/ha), business and market centres, and tourism areas.
- 90% of population will be coverage by garbage management in medium-high population density areas.
- More than 80% of population will be coverage by garbage management in low population density areas.

The type of services of garbage collection can be divided as follow:

- Transfer Depot with container 5 m cubic will be located in high population density areas and strategic areas.
- Street container 5 meter cubic will be located in medium-high population density areas.
- Temporary disposal site will be developed in low population density areas.

B. Medium-Term Program

B.1. Target

Medium-program targeted that in 1996 47% of YUDP population can be covered by garbage management. The detail target can be divided as follow: 80% of population in Yogya, 20% in Sleman and 24% in Bantul, will be covered by garbage management. This program also priorities and allocates the services (collecting and disposing) based on:

- 100% of services will cover in medium-high population density (>200 persons/ha) and in strategic areas (business centre, tourism areas).
- 80% of services will cover in medium population density (100-200 persons/ha).
- 30% of services will cover in low population density (50-100 persons/ha).
- in area where very low population density the services will not be conducted.

B.2. Program

- Formulating master plan of garbage management and related studies on: management and recycling of harmful garbage, and community development, TPA alternative for future.
- Development of institution. To search an alternative to improve the institution from section to dinas, even to search possibilities to develop as local-public enterprise (PD/Perum). It is also important to develop cooperation with private enterprise to manage the garbage in certain areas. Business centre Malioboro and Jalan Solo have been managing in relation with private enterprises. In addition development of neighbourhood institution to collect garbage from households level is very important to be integrated with other system.
- Improvement of TPA or final disposal site (open dumping).
- Improvement and additional new vehicles and tools for collecting and transporting the garbage.
- Standardization and optimalization of services.
- Pilot project of garbage management. This project is to develop the institution, the system of services, and the management. This pilot project consists of selection of TPA, environmental impact assessment, detail design of TPA and alternative of collecting-transporting-disposing system.

Note:

Criteria for new TPA as follow:

- far from settlement area
- not pollute surface water
- the groundwater is quite deep
- availability of material for covering garbage
- the distant is less than 15 kilometres from city centre.

Some alternative TPAs is being studied. One of the alternative is Sitimulyo village, kecamatan Piyungan, Bantul. The distance is 12 km from Yogya.

B.3. Financial aspect

The total cost of the medium-term projects is 5,402,000,000,-. The distribution of the cost is Yogyakarta Rp 4,509,000,000,-, Sleman Rp 509,000,000,-, and Bantul Rp 384,000,000,-. This cost will be covered by a budget from several sources: RDA/loan 35%, APBN 30%, Inpres II 7%, APBD I 3%, APBD II 19%, grant 6%.

V. Road and transportation

A. Long Term Development Policy.

A.1. Objective and Target

The long term objective of the policy is to improve road network with sufficient traffic management system. Transportation network is targeted to support the development of RUTRP - an urban spatial general plan. The long term target is to improve and to develop the asphalt road from 430 km in 1991 to 839 km and the cement road from 40 km to 55 km.

One of the main target is to finish ring road construction. This ring road has function (1) to reduce heavy traffics in Yogya (2) to provide accessibility to develop new centres for education, settlement, and business.

A.2. Program

- Improve the existing road in term of quality of construction, traffic management.
- Enlarge the road dimension and extent the natural/soil road by concrete material (asphalt and cement).
- improve the traffic sign, traffic light, and traffic management.
- Develop new network especially related to the development of RUTRP.
- Classify the road based on law RI no 13, 1990 and rules no 26, 1985 which has aims to delineate the function, to improve better condition and safety of the users, and to reduce traffic jams. According to the law there are three type of road: arteria, collector, and local roads.
- Development of ring road and terminals for: truck and storage for loading terminal, intercity bus terminal, and intercity terminal (see appendix - map).

B. Medium Term Program.

B.1. Objective and Target

Medium term road development program has objective to solve existing immediate problems in line with long term program. The target of medium term program is to improve and to develop the asphalt road from 430 km in 1991 to 527 km and the traffic management.

B.2. Program

- Formulate master plan for road network and transportation. The master plan is important to

integrate road network in Yogya, Sleman, and Bantul. In addition it is important to support the development of RUTRP.
- Continue the development of ring road.
- Rehabilitation of road and road facilities such as sign, light, trotoar, zebra cross, bridge, etc.
- Development of terminals, parking space and new road network.
- Improvement of traffic management and persuasion approach to improve discipline of the users.

B.3. Financial

Total cost of the road development program in medium term is Rp 27,829,000,000,-. This budget will be covered by APBN 3%, IPJK 30%, Inpres I 25%, Inpres II 38%, and APBD II 4%.

VI. Kampung (settlement) improvement program

A. Long Term Development Policy

A.1. Target

The target in the year 2005 all Kampung in urban region (900 ha in Yogya, 200 ha in Sleman, and 175 ha in Bantul) have to be provided by basic infrastructures. This basic infrastructure is aimed to support environmental health condition for the people.

Regarding to reduce population density in Kampung areas in urban centres, low cost housing program have to be prioritized in sub urban areas.

Real Demand Study 1991, suggested to make priority to select location to implement KIP with criteria as follow:
- Concentrate on high population density with irregular buildings and targeted Kampung which close to strategic areas (business centre and tourism centre).
- Focused on average low income Kampung and poor settlement areas.
- Adapting the strategy and approach of KIP related with specific condition of every Kampung.

A.2. Program
- Stimulate people participation to develop their Kampung.
- KIP pioneer is so called 'to do to' approach to develop basic infrastructure in a community which developed social life with a real demand have to be provided immediately. The KIP Pioneer provide basic infrastructure mostly roads and environmental health facilities. This project is done by contractor not by local labour and community.
- KIP Plus pilot project is so called 'to do for' approach to develop infrastructure in a community which has medium social life condition. In this project local government and the community conduct a real demand survey, participatory planning. During implementation, suggestion and aspiration from community have to be considered.
- CIP (Community Involvement Project) is so called 'to do with' approach to develop infrastructure in low income and low social life condition. In this project non-government organization together with the community conduct a real demand survey. After the survey was done, the community set up working groups to do planning and its implementation.

B. Medium Term Program

B.1. Target

In medium term 49% (595 hectares) of Kampung in YUDP to be covered by KIP. Detail target per Dati II as follow: Yogya 35% (298 hectares), Sleman 83% (165 hectares), Bantul 88% (132 hectares).

B.2. Program
- KIP Pioneer will be implemented 255 hectares in YUDP which divided by 58 ha in Yogya, 115 ha in Sleman, 82 ha in Bantul.
- KIP Plus will be implemented 50 ha in YUDP which divided by 30 ha Yogya, 10 ha in Sleman, 10 ha in Bantul.
- CIP will be implemented 160 ha in YUDP which divided by 80 ha in Yogya, 40 ha in Sleman, 40 ha in Bantul.

VII. Market infrastructure improvement program

A. Long Term Development Policy

Long Term Target 2005 of MIIP in YUDP is 50% of market can be improved through this program. The number of markets in YUDP will be increased from 41 in 1991 to 50 in 2005. Those markets are spreads in Yogya 37, Sleman 10, and Bantul 3. MIIP will improve 50% or 24 markets, that are in: Yogya 15 markets, Sleman 7 markets, and Bantul 2 markets.

B. Medium Term Program

The target of medium term program is to improve 16 markets or 87,5 hectares in YUDP. Most of those market are 11 markets in Yogya, 4 markets in Sleman, 1 market in Bantul.

The criteria of MIIP at medium term program are:
- Market where has at least two basic infrastructure problems related with environmental aspect.
- Market where close to high population settlement (> 300 persons/hectare).
- Market where within low income settlement area.
- Marker where its pollution disturbs surrounding settlement.
- Market which has formal status and managed by Dinas Pasar.

MIIP in medium term has several program as follow:
- Conducting a study which consists of evaluation of environmental problems especially sanitation of the market.
- Preparation of pilot project of MIIP, analysis of real demand, and detail design of the improvement.
- Inventarization of existing infrastructure of markets in YUDP.
- Detail engineering design of MIIP.

The total cost of MIIP medium term program is Rp 1,461,000,000,- (constant price March 1991). 64% of total cost will be implemented in 11 markets in Yogya, 25% will be implemented in 4 markets in Sleman, and 11% will be implemented in 1 market in Bantul. The total cost will be covered by contribution from APBD II or local government budget.

The location of MIIP medium term program in Yogya are: Pasar Gading (Mantrijeron), pasar Karangwaru (Tegalrejo), pasar Gedong Kuning (Kotagede), pasar Patuk (Ngampilan). MIIP in Sleman are: pasar Gentan (Depok), pasar Sambilegi (Depok), pasar Colombo (Depok). MIIP in Bantul is pasar Niten (Sewon).

VIII. Environmental program

A. Long Term Development Policy

The objective of the policy in Yogyakarta is to create a healthy and clean settlement. To achieve this objective, it needs a strategy to reduce environmental pollution. Policy on environmental aspect is not stand alone, but it will be developed within the infrastructure development.

Several policy on environmental aspect related to the infrastructure development as follow:

- Non-piped clean water in high population density and lack of sewerage system, should be replaced by coverage improvement of piped water supply.
- Pollution on water resources should be avoided through limitation of industrial and human activities including the use of fertilizer and pesticide in area where considered as 'protected groundwater area'.
- Improvement of capacity of drainage channels and promotion of the development of percolating well to recharge groundwater in Yogyakarta.
- Enlargement of sewerage system and intensification of the use of the system in high population density. In addition sewerage water treatment should be build to reduce pollution.
- Improvement of technical aspect of on-site sanitation. It is important to reduce groundwater pollution especially in area where is still lack of piped water.
- improvement of garbage management: on-site garbage disposal system should consider environmental impacts, off-site garbage disposal system should be processed by land coverage/land fill system, recycling system, dangerous waste should be processed in appropriate way.
- Reducing air pollution caused by transportation system through: improvement of traffic management and enforcement of vehicle pollution test.

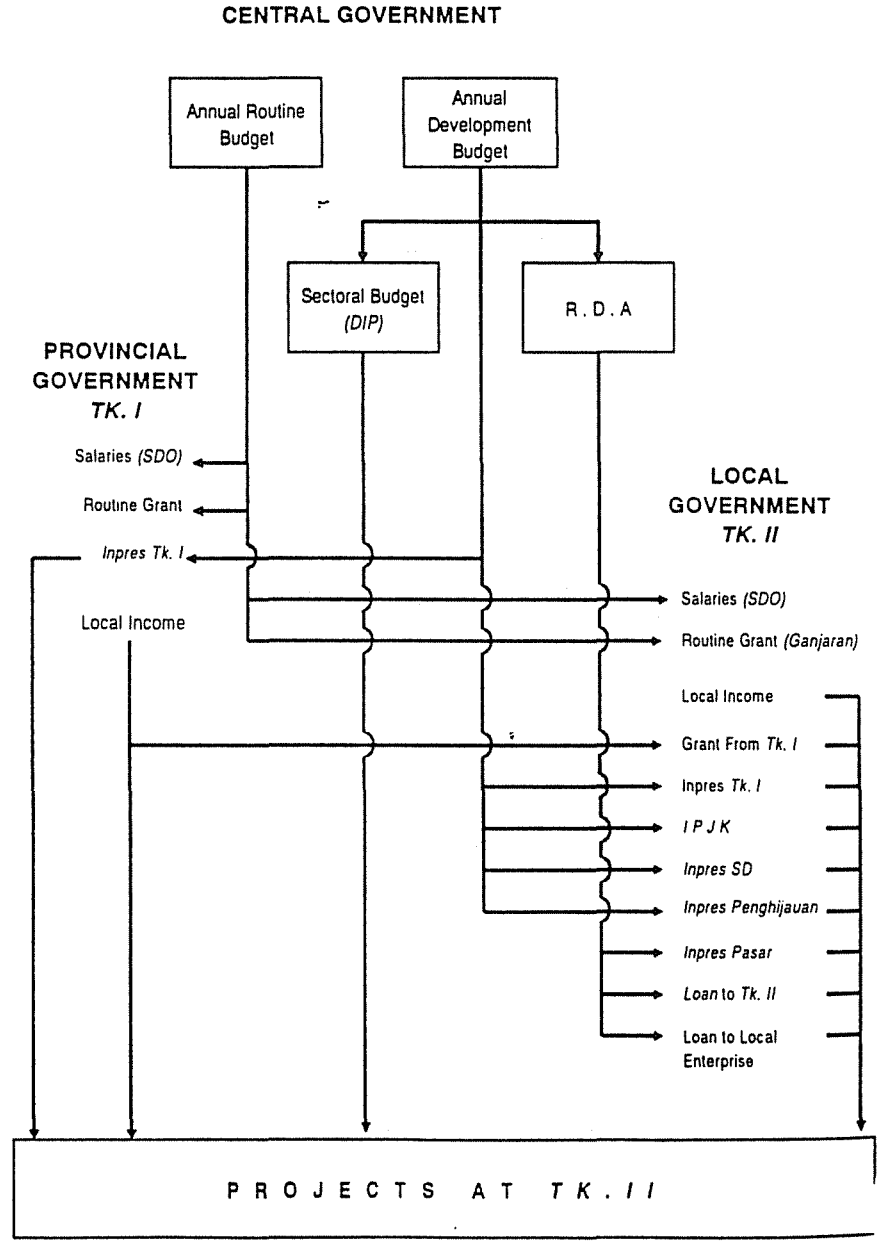
B. Medium Term Program.

- Study of environmental for urban development planning in Yogyakarta.
- Environmental impact assessment for infrastructure development projects.
- Dissemination of environmental information through several broadcasting (TV, radio, newspaper), seminar and discussion in campus and schools.
- Pilot project of industrial waste treatment.

Total cost of medium term program is Rp 696,000,000,- which be distributed in Yogya Rp 648,000,000,-, in Sleman Rp 24,000,000,-, and in Bantul 24,000,000,-. All this budget will be covered by overseas grant.

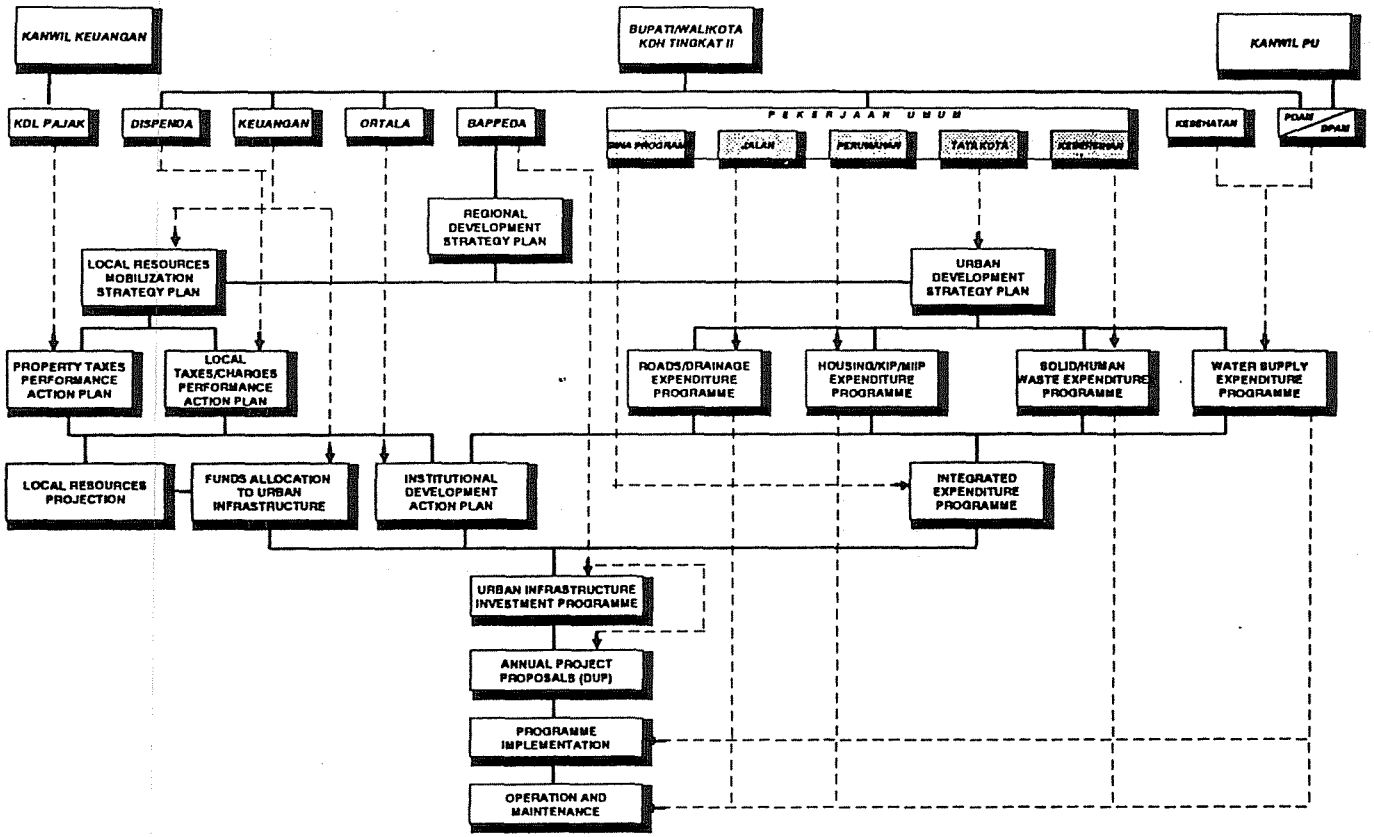
Appendix 9

INTERGOVERNMENTAL FUNDS FLOW IN INDONESIA



Source: Hoff and Steiberg. 1992.

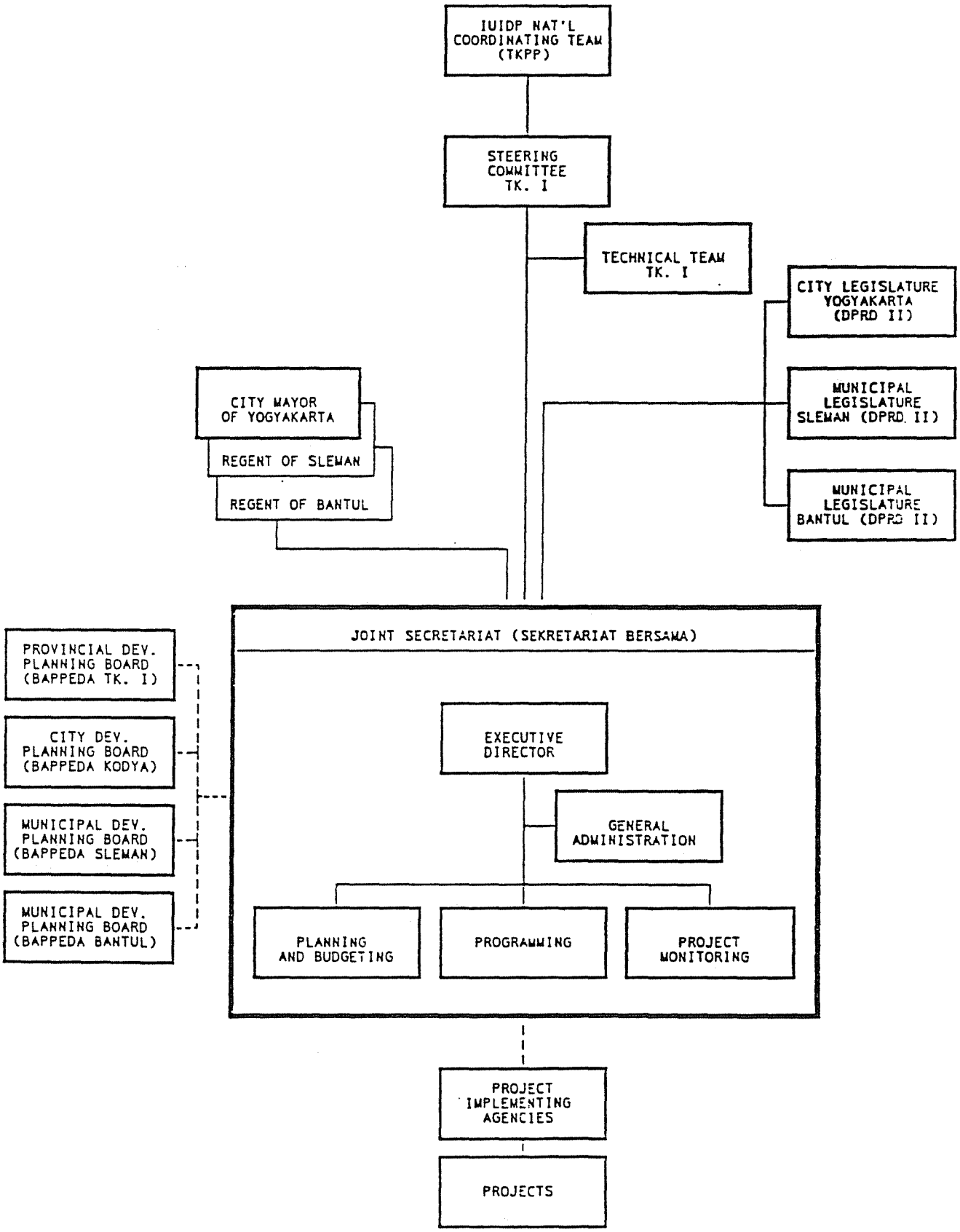
ASSIGNMENT OF IUIDP FUNCTIONS



Source: Hoff and Steinberg. 1992

Appendix 11

ORGANIZATION STRUCTURE AND INSTITUTIONAL LINKAGES OF THE JOINT SECRETARIAT



Source: YUDP project. 1991

Appendix 12

Population Density and Household Income at Kalurahan

Code	Kalurahan	Population Density	Income Category (%) I	II	III	IV	V	Avr Income (Rp 1,000)
Y/MJ/1	Gedongkiwo	330	3.80	42.30	34.60	15.40	3.80	242
Y/MJ/2	Suryodiningratan	172	14.60	31.30	35.40	12.60	6.30	240
Y/MJ/3	Mantrijeron	122	5.30	29.30	32.00	24.00	9.30	292
Y/WB/4	Patangpuluhan	287	7.10	25.00	35.70	21.40	10.70	296
Y/WB/5	Wirobrajan	236	11.00	32.90	20.60	28.80	6.80	273
Y/WB/6	Pakuncen	240	18.50	24.10	25.90	20.40	11.10	275
Y/KR/7	Patehan	265	2.90	28.60	28.50	34.30	5.70	296
Y/KR/8	Kadipaten	346	8.40	30.50	36.10	22.20	2.80	250
Y/KR/9	Panembahan	227	9.10	27.30	19.70	28.80	15.10	323
Y/MG/10	Brontokusuman	141	10.30	37.90	17.20	17.20	17.20	303
Y/MG/11	Keparakan	205	11.30	45.50	27.30	11.40	4.50	222
Y/MG/12	Wirogunan	220	11.50	30.80	19.20	34.60	3.80	267
Y/UH/13	Mujamuju	195	5.00	25.00	15.00	20.00	35.00	420
Y/UH/14	Tahunan	199	8.00	36.00	20.00	28.00	8.00	280
Y/UH/15	Semaki	365	11.10	33.30	37.00	14.80	3.70	235
Y/UH/16	Warungboto	192	8.80	41.20	17.60	29.40	2.90	250
Y/UH/17	Pandeyan	158	2.90	37.20	20.00	28.60	11.40	307
Y/UH/18	Giwangan	211	5.30	73.70	15.80	5.30	0.00	174
Y/UH/19	Sorosutan	145	20.00	35.00	12.50	22.50	10.00	259
Y/KG/20	Prenggan	108	2.80	52.70	22.30	13.90	8.30	254
Y/KG/21	Purbayan	100	35.70	32.20	17.90	10.70	3.60	181
Y/KG/22	Rejowinangun	133	6.80	47.70	25.00	18.20	2.30	228
Y/PA/23	Gunungketur	420	7.40	37.00	18.50	25.90	11.10	292
Y/PA/24	Purwokinanti	296	19.10	42.90	23.80	9.50	4.80	207
Y/GM/25	Prawirodirjan	386	53.40	29.30	8.60	6.90	1.70	133
Y/GM/26	Ngupasan	337	8.30	8.40	20.80	50.00	12.50	363
Y/NG/27	Ngampilan	334	15.10	38.40	20.20	20.20	6.10	242
Y/NG/28	Notoprajan	329	13.60	42.80	22.70	16.40	4.50	227
Y/GT/29	Sosromenduran	438	23.60	35.30	25.00	10.30	5.90	213
Y/GT/30	Pringgokusuman	392	21.90	36.90	16.40	12.30	12.30	249
Y/DN/31	Bausasran	282	33.30	25.00	20.80	20.90	0.00	190
Y/DN/32	Tegalpanggung	366	28.30	33.40	21.60	13.30	3.40	197
Y/DN/33	Suryatmajan	441	26.90	38.50	19.20	11.50	3.80	194
Y/GK/34	Banciro	201	6.40	25.80	24.20	24.20	19.30	344
Y/GK/35	Klitren	383	0.00	13.70	47.80	36.40	2.30	303
Y/GK/36	Kotabaru	265	10.50	26.30	5.30	31.60	26.30	382
Y/GK/37	Terban	342	43.90	36.60	12.20	7.30	0.00	137
Y/GK/38	Demangan	259	15.00	27.50	20.00	30.00	7.50	275
Y/JT/39	Bumijo	381	8.30	26.70	23.40	28.40	13.30	316
Y/JT/40	Gowongan	396	28.00	30.00	12.00	24.00	6.00	230
Y/JT/41	Cokrodiningratan	396	25.90	38.90	14.90	14.90	5.60	210
Y/TR/42	Tegalrejo	191	17.10	40.00	31.50	8.60	2.90	203
Y/TR/43	Bener	108	14.30	28.50	33.30	9.60	14.30	279
Y/TR/44	Kricak	193	23.00	40.40	26.90	3.80	5.80	198
Y/TR/45	Karangwaru	214	16.30	39.60	25.60	13.90	4.70	222
S/GM/46	Ambarketawang	46	6.90	38.30	32.90	16.50	5.50	250
S/GM/47	Banyuraden	176	11.10	37.00	18.50	22.20	11.10	279
S/GM/48	Nogotirto	246	13.20	26.40	28.30	26.40	5.70	265
S/GM/49	Trihanggo	66	20.80	35.90	24.50	17.00	1.90	208
S/ML/50	Sinduadi	113	22.40	36.40	20.00	16.40	4.70	217
S/ML/51	Sendangadi	78	22.50	42.50	25.00	10.00	0.00	178
S/ML/52	Tlogoadi	40	47.10	17.60	23.50	8.80	2.90	166
S/ML/53	Tirtoadi	32	35.00	45.00	12.50	7.50	0.00	146
S/DP/54	Maguwoharjo	42	35.60	35.50	22.40	5.20	1.30	158
S/DP/55	Caturtunggal	230	4.00	30.50	29.80	27.80	7.80	292
S/DP/56	Condongcatur	61	25.90	39.20	18.20	11.30	5.40	203
S/NP/57	Wedomartani	45	20.00	40.00	27.50	7.50	5.00	206
S/NG/58	Sariharjo	46	15.80	47.40	21.00	15.80	0.00	195
S/NG/59	Minomartani	110	16.70	48.20	25.90	5.60	3.70	196
S/NG/60	Sinduharjo	52	20.00	31.50	37.10	8.60	2.90	206
S/NG/61	Sardonoharjo	45	28.80	27.10	32.20	11.90	0.00	183
B/BT/62	Tamanan	86	16.30	37.20	34.90	11.60	0.00	198
B/BT/63	Jagalan	138	16.10	45.10	22.60	16.10	0.00	197
B/BT/64	Singosaren	58	33.30	41.60	25.00	0.00	0.00	142
B/BT/65	Wirokerten	83	38.20	50.00	2.90	5.80	2.90	146
B/BT/66	Jambidan	71	22.70	40.90	27.30	9.10	0.00	177
B/BT/67	Potorono	79	16.20	64.80	13.50	5.40	0.00	161
B/BT/68	Baturetno	88	0.00	29.60	40.70	25.90	3.70	278
B/BT/69	Banguntapan	129	15.70	47.00	25.30	6.00	6.00	211
B/SW/70	Bangunharjo	103	12.50	26.80	30.30	21.40	8.90	275
B/SW/71	Panggungharjo	127	19.40	38.90	27.80	11.10	2.80	203
B/KS/72	Tirtonirmolo	105	8.90	48.20	34.00	7.20	1.80	204
B/KS/73	Tamantirto	42	15.30	38.90	27.20	15.30	3.40	221
B/KS/74	Ngestiharjo	121	34.70	47.00	18.40	0.00	0.00	134

CATEGORIZATION:
Household Income

I = less than Rp 100,000,-
II = 101 - 200
III = 201 - 300
IV = 301 - 500
V = more than Rp 500,000,-

Source: Calculated from RDS Dian Desa 1991.

Appendix 13

Scoring of Population Density, Household Income and Infrastructure at Kalurahan Level

Code	Kalurahan	Population Density	Household Income	Piped Water	Garbage Collection	Sani-tation	Drainage	Total Score (Infrastructure)
Y/MJ/1	Gedongkiwo	2	3	2	3	5	5	15
Y/MJ/2	Suryodiningratan	3	3	2	2	5	5	14
Y/MJ/3	Mantrijeron	4	4	2	2	5	5	14
Y/WB/4	Patangpuluhan	2	4	2	1	3	3	9
Y/WB/5	Wirobrajan	3	4	2	3	3	3	11
Y/WB/6	Pakuncen	3	4	2	2	3	3	10
Y/KR/7	Patehan	2	4	4	5	5	5	19
Y/KR/8	Kadipaten	2	3	4	3	5	5	17
Y/KR/9	Panembahan	3	5	4	5	5	5	19
Y/MG/10	Brontokusuman	4	5	2	3	5	4	16
Y/MG/11	Keparakan	3	3	2	5	5	4	16
Y/MG/12	Wirogunan	3	4	2	2	5	4	13
Y/UH/13	Mujamuju	3	5	1	5	3	1	10
Y/UH/14	Tahunan	3	4	1	1	3	1	6
Y/UH/15	Semaki	1	3	1	5	3	1	10
Y/UH/16	Warungboto	3	3	1	2	3	1	7
Y/UH/17	Pandeyan	3	5	1	2	3	1	7
Y/UH/18	Giwangan	3	2	1	1	3	1	6
Y/UH/19	Sorosutan	4	4	1	1	3	1	6
Y/KG/20	Prenggan	4	4	4	1	4	4	13
Y/KG/21	Purbayan	4	2	4	5	4	4	21
Y/KG/22	Rejowinangun	4	3	4	1	4	4	17
Y/PA/23	Gunungketur	1	4	5	5	5	5	20
Y/PA/24	Purwokinanti	2	3	5	5	5	5	20
Y/GM/25	Prawirodirjan	1	1	4	3	5	2	14
Y/GM/26	Ngupasan	2	5	4	5	5	2	16
Y/NG/27	Ngampilan	2	3	4	5	3	3	15
Y/NG/28	Notoprajan	2	3	4	4	2	3	13
Y/GT/29	Sosromenduran	1	3	5	4	5	2	16
Y/GT/30	Pringgokusuman	1	3	5	4	4	2	15
Y/DN/31	Bausasran	2	2	5	3	4	5	17
Y/DN/32	Tegalpanggung	1	2	5	2	3	5	15
Y/DN/33	Suryatmajan	1	2	5	3	4	5	17
Y/GK/34	Banciro	3	5	3	4	3	3	13
Y/GK/35	Klitren	1	5	3	1	3	3	10
Y/GK/36	Kotabaru	2	5	3	3	3	3	12
Y/GK/37	Terban	2	1	3	5	3	3	14
Y/GK/38	Demangan	2	4	3	3	3	3	12
Y/JT/39	Bumijo	1	5	5	4	3	5	17
Y/JT/40	Gowongan	1	3	5	5	4	5	19
Y/JT/41	Cokrodiningratan	1	3	5	3	4	5	17
Y/TR/42	Tegalrejo	3	3	3	3	3	3	12
Y/TR/43	Bener	4	4	3	4	3	3	13
Y/TR/44	Kricak	3	2	3	4	3	3	13
Y/TR/45	Karangwaru	3	3	3	2	4	3	12
S/GM/46	Ambarketawang	5	3	1	1	1	1	4
S/GM/47	Banyuraden	3	4	1	1	1	1	4
S/GM/48	Nogotirto	3	4	1	1	1	1	4
S/GM/49	Trihanggo	5	3	1	1	1	1	4
S/ML/50	Sinduadi	4	3	2	3	2	1	8
S/ML/51	Sendangadi	5	2	2	1	2	1	6
S/ML/52	Tlogoadi	5	2	2	1	2	1	6
S/ML/53	Tirtoadi	5	1	2	2	2	1	7
S/DP/54	Maguwoharjo	5	2	1	1	2	1	5
S/DP/55	Caturtunggal	3	4	1	1	2	1	5
S/DP/56	Condongcatur	5	3	1	1	2	1	5
S/NP/57	Wedomartani	5	3	2	1	2	1	6
S/NG/58	Sariharjo	5	2	2	1	2	1	6
S/NG/59	Minomartani	4	2	2	1	2	1	6
S/NG/60	Sinduharjo	5	3	2	1	2	1	6
S/NG/61	Sardonoharjo	5	2	2	1	2	1	6
B/BT/62	Tamanan	5	2	1	1	1	1	4
B/BT/63	Jagalan	4	2	1	2	1	1	5
B/BT/64	Singosaren	5	1	1	1	1	1	4
B/BT/65	Wirokerten	5	1	1	5	1	1	8
B/BT/66	Jambidan	5	2	1	1	1	1	4
B/BT/67	Potorono	5	2	1	2	1	1	5
B/BT/68	Baturetno	5	4	1	1	1	1	4
B/BT/69	Banguntapan	4	3	1	1	1	1	4
B/SW/70	Bangunharjo	4	4	1	1	1	1	4
B/SW/71	Panggungharjo	4	3	1	1	1	1	4
B/KS/72	Tirtonirmolo	4	3	1	1	3	1	6
B/KS/73	Tamantirto	5	3	1	1	3	1	6
B/KS/74	Ngestiharjo	4	1	1	1	3	1	6

CATEGORIZATION:

Score	Pop'l Number (1,000)	Rp/Mth (1,000,-)	% Pop'l served	% to TPS hh garbage	% Pop'l OS&swrg	Ratio chn/area
1	> 350	< 150	< 10	< 10	< 40	< 25
2	>250-350	>150-200	>10-20	>10-20	>40-60	>25-50
3	>150-250	>200-250	>20-30	>20-30	>60-80	>50-75
4	>100-150	>250-300	>30-40	>30-40	>80-99	>75-100
5	< 100	> 300	> 40	> 40	100%	> 100

Appendix 14

The IUIDP Glossary: Terms, Abbreviations, and Accronyms

A. Terms:

Bupati	= Head of District, sometime also called Regent
Dinas	= Provincial or Local Department Agency, Office or Service
Kabupaten	= District, local government Tk II/ Dati II, sub-devision of province, headed by a Bupati
Kampung	= Traditional residential area, often used for a 'village' or 'urban neighbourhood'
Kecamatan	= Sub-district, the intermediate level of government administration between village level and district or municipality
Kelurahan	= Urban village, the lowest administrative unit.
Kotamadya	= Municipality and/or city, headed by a Mayor (Walikota). Status equal to Kabupaten

B. Abbreviations and Acronyms:

ADB	= Asian Development Bank
Bappeda Tk I	= Regional Development Planning Agency (Provincial level)
Bappeda Tk II	= Regional Development Planning Agency (District or Municipality level)
BAPPENAS	= Badan Perencanaan Pembangunan Nasional or National Development Planning Agency
Bina Program	= Directorate for Program Development under MPW
BOT	= Build, Operate and Transfer
BPAM	= Badan Pengelola Air Minum or Water Supply Management Board
CBO	= Community-based Organization
DPRD	= Dewan Perwakilan Rakyat or Regional House of Representatives
GBHN	= Garis Besar Haluan Negara or Board Outlines of State Policy
Inpres	= Instruksi Presiden or Central Government Funds for Development Activities at Provincial level - on the instruction of the president
IUD	= Integrated Urban Development
IUIDP	= Integrated Urban Infrastructure Development Program
Jabotabek	= The region of Jakarta, Bogor, Tangerang and Bekasi
Kanwil	= Kantor Wilayah or Office of Central Ministry at Provincial level or "deconcentrated" representation
KIP	= Kampung Improvement Program
KLH	= Kependudukan dan Lingkungan Hidup or Ministry of Population and Environment
LIDAP	= Local Institutional Development Action Plan
MHA	= Ministry of Home Affairs
MIIP	= Market Infrastructure Improvement Programme
MOF	= Ministry of Finance
MPW	= Ministry of Public Work
NGO	= Non-Government Organization
NUDS	= National Urban Development Strategy
PAD	= Pendapatan Asli Daerah or Local revenues
PBB	= Pajak Bumi dan Bangunan or Land and Property Tax
PDAM	= Perusahaan Daerah Air Minum or Regional Water Enterprise
Perum Perumnas	= Perusahaan Umum Perumahan Nasional or National Housing Corporation
PJM	= Program Jangka Menengah or Multi-year Investment Program
PPP	= Public Private Partnership
PU	= Pekerjaan Umun or Public Work
RDA	= Regional Development Account
Repelita	= Rencana Pembangunan Lima Tahun or National Five Years Development Plan
RIAP	= Revenue Improvement Action Plan
RUTRP	= Rencana Umum Tata Ruang Perkotaan or General Urban Area Plan
Sekwilda	= Sekretaris Wilayah Daerah or Regional Secretary
TKPP	= Tim Koordinasi Pembangunan Perkotaan or Urban Development Coordination Team
UNDP	= United Nations Development Program