



## WATER, ENVIRONMENT AND MANAGEMENT

### Semarang/Surakarta integrated urban infrastructure

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#### URBAN DEVELOPMENT

Throughout Indonesia cities have experienced many problems because of the rapid growth of the urban population. This has occurred despite a reduction in the overall rate of population growth. This is now just under 2% and is expected to fall to 1.7% by 1995, whereas the urban population is still growing at 6% per year. As this continues the number of people in urban areas will increase rapidly and by the year 2000 over 45% of the population in Indonesia will be living in cities and towns compared with only 18% in 1970 as shown in Fig. 1. (1990 Census)

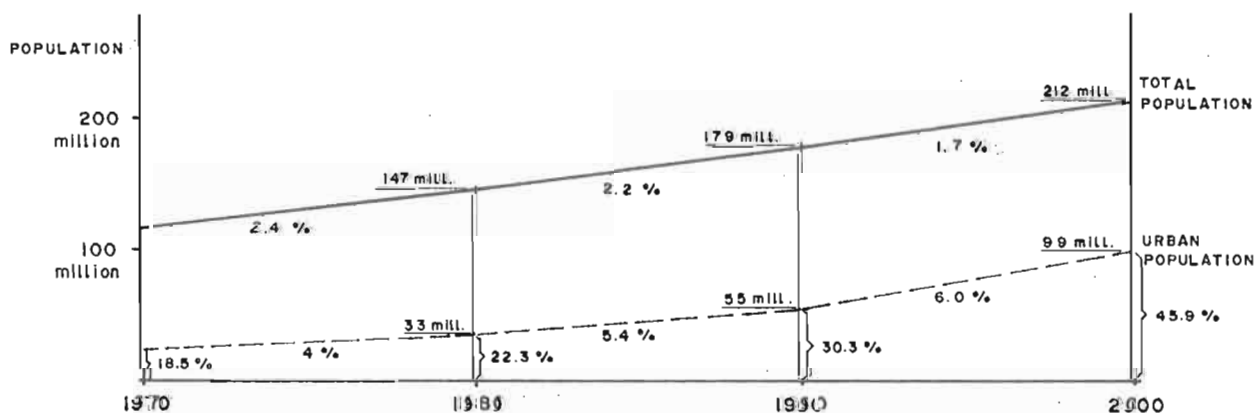
This is not a trend which can be prevented. Agricultural production has increased during this period but this has not resulted in a parallel increase in the number of people being employed in agriculture. In the cities the development of industry and commerce has resulted in many employment opportunities. The discrepancy between rural and urban development will tend to continue in the same way.

To deal with this problem the Government of Indonesia has started to implement a programme to develop the basic infrastructure services in urban areas in the capital city of Jakarta and throughout the 27 regional provinces. This has been called the Integrated Urban Infrastructure Development Programme. It is intended to give priority to the poorer central city areas with the highest density of population. Here income levels are much lower and the communities need assistance in the construction of the essential services needed to provide acceptable living conditions.

Semarang and Surakarta, the two major cities in Central Java Province have populations of 1.25 million and 1.5 million. (1990 Census) They have both been growing rapidly and Semarang which is also the provincial capital has become a regional growth centre with an increasing rate of industrial development. This project was aimed at providing the necessary assistance in developing infrastructure for housing and industrial areas of the cities.

FIGURE 1

#### URBAN POPULATION GROWTH IN INDONESIA 1970 - 2000



## INFRASTRUCTURE SERVICES

The services included in the programme have been selected to have the maximum impact on the areas of greatest need. These were:-

|                |                       |
|----------------|-----------------------|
| Water Supply   | -public & private     |
| Sanitation     | -sewers & individual  |
| Solid Waste    | -transport & disposal |
| Drainage       | -flood prevention     |
| Roads          | -local access         |
| Housing Areas  | -community services   |
| Market         | -improve services     |
| Urban Planning |                       |

The normal sector priorities were changed to concentrate the effect on the more densely populated central urban areas. Where possible, provision was also made for services which would encourage industrial development. In Semarang this was utilised to attract a private developer to provide finance for a new bulk water supply.

### PROGRAMME OBJECTIVES

The programme has been designed to improve living conditions in the urban areas. At the same time it is important that the local governments are equipped to operate and maintain these new services. To combine these and provide for the local preparation of future programmes the following objectives have been established (IUIDP Guidelines) :-

1. Decentralisation of control to local government.
2. Integration of financial resources (Public & Private).
3. Target specific areas instead of individual sector objectives.
4. Provide Institutional support and training for preparation, implementation and operation & maintenance.
5. Improve locally generated revenue to finance projects and O & M.

### FINANCIAL RESOURCES

The first designs prepared, aimed to achieve target levels of service set as the objectives for the national five year development programme. These were then revised to meet the limitations of the finance available. The final financing plan showing the sources used is summarised below.

TABLE 1

### Sources of Finance

|                    | Amount                | % of Total |
|--------------------|-----------------------|------------|
| Central Government | \$ 54.4 mill          | 24.7%      |
| Local Government   | \$ 34.1 "             | 15.5%      |
| IBRD Loan          | \$ 71.4 "             | 32.3%      |
| Private Consortium | \$ 60.8 "             | 27.5%      |
| TOTAL              | U.S. \$ 220.7 million |            |

The breakdown of these between the different sectors is shown on Table 2

TABLE 2

### Allocation to Infrastructure Sectors

|                    | Amount                | % of Total |
|--------------------|-----------------------|------------|
| Water Supply       | \$ 40.7 mill          | 18.4%      |
| Sanitation         | \$ 28.5 "             | 12.9%      |
| Solid Waste        | \$ 11.2 "             | 5.1%       |
| Drainage           | \$ 20.5 "             | 9.3%       |
| Roads              | \$ 25.4 "             | 11.5%      |
| K.I.P.             | \$ 7.4 "              | 3.4%       |
| M.I.I.P.           | \$ 1.1 "              | 0.5%       |
| Urban Planning     | \$ 3.6 "              | 1.6%       |
| R.I.A.P.           | \$ 0.3 "              | 0.1%       |
| LIDAP              | \$ 3.1 "              | 1.4%       |
| Private Bulk Water | \$ 60.7 "             | 27.5%      |
| Interest           | \$ 18.2 "             | 8.3%       |
| TOTAL              | U.S. \$ 220.7 million |            |

One crucial item of this plan is the RIAP, or Revenue Improvement Action Plan. This has been prepared to increase the locally generated funds. With an adequate source of its own revenue, local government will be able to finance future programmes.

It is also important that maximum use is made of private sources of finance. This was possible in Semarang where a private consortium proposed to provide a new bulk supply of water on a build, operate and transfer basis (BOT). Investment of this type aimed at industrial development releases some of the limited local government funds for more direct social benefit.

## PROJECT MANAGEMENT

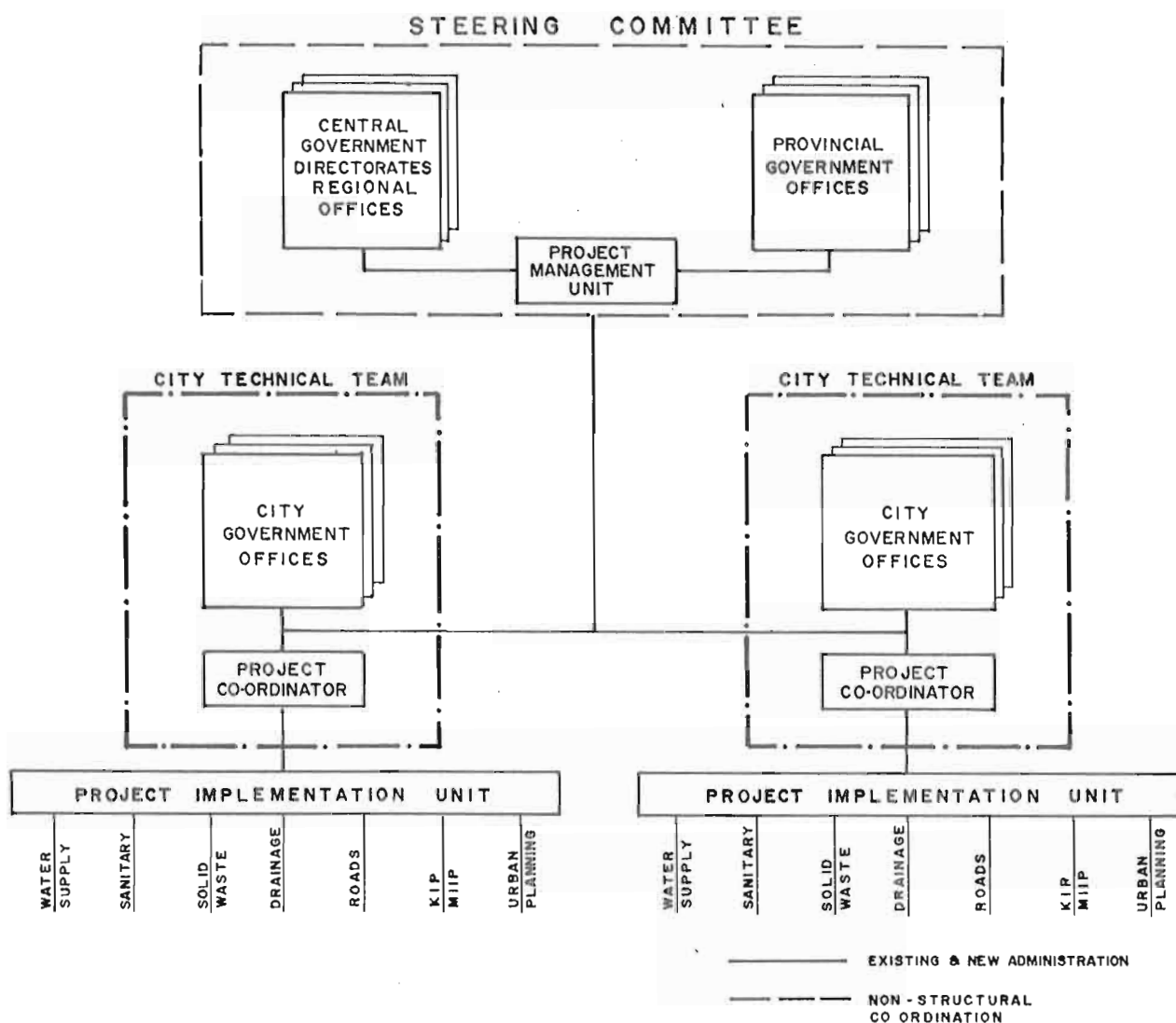
There were two areas of administration which had to be considered when preparing the management proposals for the project. These cover the first period of implementation during which detailed design and construction of the infrastructure would be completed. A second longer term plan was required for the next stage to improve the ability of the local government agencies to operate and maintain the new improved infrastructure services and the existing systems.

## 1. Project Implementation

This only needs a management system for the five years of project implementation. The system adopted has made extensive use of the existing organisation and staff. Non-structural bodies have been used to provide the necessary co-ordination between the offices responsible for each of the service sectors. Control has been allocated to two levels. Within each service agency of each city a Project Implementation Unit (PIU) will supervise the construction of the project components in that sector. All of the PIU's in each city

FIGURE 2

## MANAGEMENT STRUCTURE



will report to a Project Co-ordinator who will work with the city Technical team. Above this a Project Management Unit (PMU) will be established by the Directorate for Human Settlements and this PMU will prepare the project schedules etc. in consultation with the Steering Committee at the Provincial level to prevent conflict with other development projects.

## 2. Operation and Maintenance

Having constructed the infrastructure there must also be an efficient and effective programme of Operation & Maintenance to obtain the maximum long term benefit from the new services. The first step of this had been started under a previous project aimed specifically at the O&M of all public work sectors. This had succeeded in preparing budgets for O&M but because of its complexity it had not been able to progress to the stage of implementing a method of monitoring and managing O&M.

A simplified method is needed and will be incorporated in the new management proposals. Other sector specific improvements such as loss reduction for water supply & refuse tip management have been incorporated in the basic O&M management in a Local Institution Development Action Plan (LIDAP). These will enable local governments to achieve the objectives set for the programme, and enable them also to prepare future development plans using their own resources.

## **NATIONAL CO-ORDINATION**

IUIDP forms an important part of the National Government's policy to develop urban areas. To support this an Inter-Agency Co-ordinating Team has been formed. The principal Ministries represented are:-

### The National Development Planning Board

which is responsible for overall planning and acts as head of the Co-ordinating Team.

### The Ministry of Public Works

which contains many of the Directorates responsible for the planning, construction and maintenance of infrastructure services.

The Ministry of Home Affairs which controls the operation of Regional and Municipal Governments.

The Ministry of Finance which controls Central, Regional and Municipal finance.

Overall control of the Co-ordinating Team is carried out by the a committee formed by the heads of the principal Ministries involved. To support it and carry out investigations and control implementation four working groups have been formed. These cover the fields of:- Policy; Programme Implementation; Financing and Administration. A Secretariat services the Co-ordinating Team and its Working Groups providing them with administrative support.

Like the local government Steering Committees and Technical Teams described earlier this arrangement also uses a system of non structural units which maximise the use of the existing administrative systems. They have the added advantage that they are easier to amend or remove once they have fulfilled their function.

## **FUTURE DEVELOPMENTS**

As IUIDP projects are implemented there will be a movement of power to the local governments and they should also become better equipped to prepare and implement future development programmes of their own. This will result in a change of objectives with greater opportunity for priority to be given to local needs. It will encourage the increase of local revenue earnings which reduces financial pressure on Central Government and gives Local Governments greater freedom of choice and will enable them to pass these benefits on to the most deserving sections of the community.

## **REFERENCES**

DIRECTORATE OF STATISTICS. 1991. *National Census 1990*

TIM KORDINASI, Dec 1989. *IUIDP Guidelines for Replita V*