

***II INSTITUTION AND  
REGULATION***



## II INSTITUTION AND REGULATION

### Table of Contents

	Page
1. Institution.....	2 - 1
1.1 Governmental Organizations .....	2 - 1
1.2 Community Organization .....	2 - 8
2. Regulations.....	2 - 11
2.1 Reference to the Main Report.....	2 - 11
2.2 Reference to the Regulations Attached .....	2 - 11
3. Development of Human Resources .....	2 - 12
3.1 Education .....	2 - 12
3.2 Role of Community and Citizens Participation.....	2 - 18
3.3 Participation of Private Sectors.....	2 - 22
4. Establishment of Wastewater Management Institution.....	2 - 27
4.1 Arrangement in Other Cities .....	2 - 27
4.2 Set-up of a Plan for a Wastewater Project Unit .....	2 - 29
4.3 Establishment of a Transitional Unit (BPAL) .....	2 - 32
4.4 PDAM, KMUP .....	2 - 35
4.5 Amalgamation of BPAL with PDAM.....	2 - 37
4.6 Establishment of PDAL in Case (Alternative I) .....	2 - 39
4.7 PDAM with Wastewater Management Institution (Alternative II).....	2 - 39

<b>5. Establishment of PD Kebersihan .....</b>	<b>2 - 41</b>
<b>5.1 Comprehension of the Present Situation .....</b>	<b>2 - 41</b>
<b>5.2 Modified/improved Dinas Kebersihan (Alternative I) .....</b>	<b>2 - 43</b>
<b>5.3 Legal Status of an Institution .....</b>	<b>2 - 43</b>
<b>5.4 Selection of Technical Alternatives .....</b>	<b>2 - 44</b>
<b>5.5 Objective Items for the Feasibility Study.....</b>	<b>2 - 44</b>
<b>5.6 Establishment of PD Kebersihan by 2005.....</b>	<b>2 - 44</b>
<b>5.7 Gowa TPA Joint Operation.....</b>	<b>2 - 46</b>
<b>5.8 PD. Kebersihan of KMUP in 2005.....</b>	<b>2 - 49</b>
<b>5.9 PD. Kebersihan, KMUP in 2015.....</b>	<b>2 - 50</b>
<b>5.10 Alternative Study on Institutional Plan for Solid Waste         Management .....</b>	<b>2 - 53</b>

### List of Tables

	Page
Table 2.2.1	Administrative Community in DATI II ..... 2 - 65
Table 2.2.2	Personnel of Dinas Kebersihan Ujung Pandang..... 2 - 66
Table 2.2.3	Personnel of Operational Section, Dinas Kebersihan ..... 2 - 67
Table 2.2.4	Agencies/Institutions Participating in Solid Waste Management ..... 2 - 68
Table 2.2.5	Total Number of Employees of Ujung Pandang Water Supply Regional Enterprise for 5 Years from the Year 1985 to the Year 1989 ..... 2 - 69
Table 2.2.6	Personnel Data of Water Supply Regional Enterprise of Ujung Pandang Municipality from Year 1989 to the Year 1993 ..... 2 - 70
Table 2.2.7	Number of Kelurahan by Kecamatan in KMUP in 1993..... 2 - 71
Table 2.2.8	Present Conditions of Wastewater Treatment Plant in Major Indonesian Cities ..... 2 - 72
Table 2.2.9	Consultation Forum at Levels..... 2 - 73

## List of Figures

	Page
Fig. 2.2.1	Organization Chart of Ministry of Public Works ..... 2 - 74
Fig. 2.2.2	Organization Chart of General Directorate of Cipta Karya ..... 2 - 75
Fig. 2.2.3	Relation Between the Central Government and Provincial Governments..... 2 - 76
Fig. 2.2.4	Organization Chart of KANWIL/Provincial Office..... 2 - 77
Fig. 2.2.5	Cipta Karya Public Works Agency..... 2 - 78
Fig. 2.2.6	Organization Chart of Settlement Environmental Sanitation Project of South Sulawesi ..... 2 - 79
Fig. 2.2.7	Organization Chart of Housing and Settlement Improvement in South Sulawesi 1994/1995 IIB Pattern ..... 2 - 80
Fig. 2.2.8	Organization Chart of DATII in South Sulawesi (1)..... 2 - 81
Fig. 2.2.9	Organization Chart of DATII in South Sulawesi (2)..... 2 - 82
Fig. 2.2.10	Organization Structure and Work Management of Provincial Planning Development Board ..... 2 - 83
Fig. 2.2.11	Structure of Deconcentration and Decentralization in Development among the Governments ..... 2 - 84
Fig. 2.2.12	Regional Governmental System ..... 2 - 85
Fig. 2.2.13	Organization Chart of KMUP (1) ..... 2 - 86
Fig. 2.2.14	Organization Chart of KMUP (2) ..... 2 - 87
Fig. 2.2.15	Organization Chart of Dinas Kebersihan ..... 2 - 88
Fig. 2.2.16	Organization Chart of PDAM in 1983 ..... 2 - 89

Fig. 2.2.17	Organization Chart of PDAM in 1985 .....	2 - 90
Fig. 2.2.18	Organization Chart of PDAM in 1992 .....	2 - 91
Fig. 2.2.19	Organization Chart of Kecamatan (1).....	2 - 92
Fig. 2.2.20	Organization Chart of Kecamatan (2).....	2 - 93
Fig. 2.2.21	Organization Chart of BAPPEDA II .....	2 - 94
Fig. 2.2.22	Work Management & Organization of Rural Community Development (BANDES).....	2 - 95
Fig. 2.2.23	Structure of Formal and Non-Formal Organization at Kelurahan .....	2 - 96
Fig. 2.2.24	Functional Chart of Kelurahan.....	2 - 97
Fig. 2.2.25	Organization Chart of Regional Revenue Agency .....	2 - 98
Fig. 2.2.26	Organization Chart of Urban Management Agency .....	2 - 99
Fig. 2.2.27	Organization Chart of Public Work Agency II.....	2 - 100
Fig. 2.2.28	Structure of LKMD .....	2 - 101
Fig. 2.2.29	Structure of RW and RT.....	2 - 102
Fig 2.2.30	Organizational Chart of Municipal Wastewater Public Enterprise.....	2 - 103
Fig. 2.2.31	Organizational Chart of Municipal Wastewater Public Enterprise of Ujung Pandang .....	2 - 104
Fig. 2.2.32	Organizational Chart of Municipal wastewater Public Enterprise of Ujung Pandang .....	2 - 105
Fig. 2.2.33	Organization Chart of PD Kebersihan in 2005.....	2 - 106

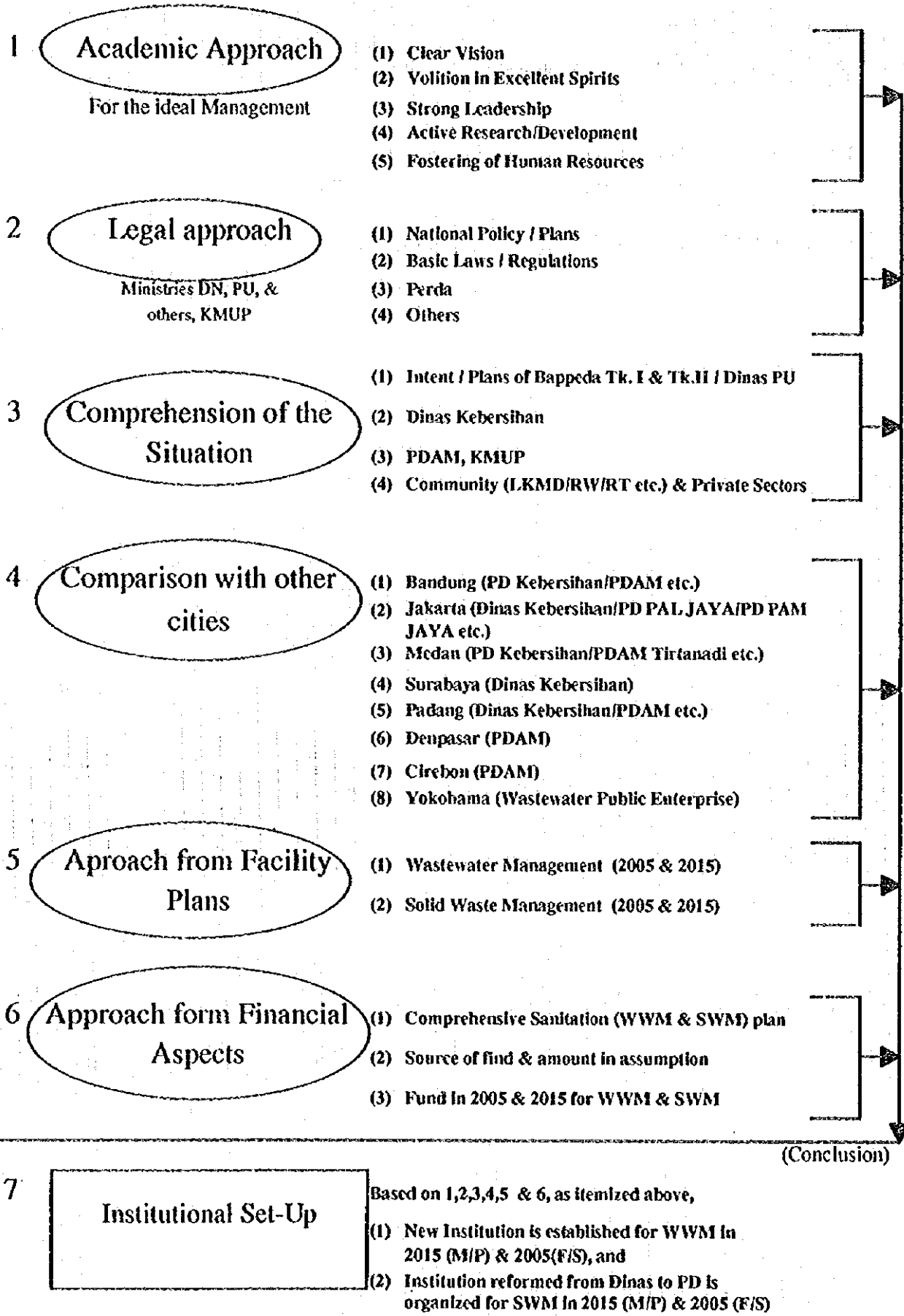
## **References**

	Page
Reference 2.2.1 Perda No.6/1974 on the establishment of PDAM, KMUP.....	107
Reference 2.2.2 Presidential Decree No.28/1980 regarding only the concerned Parts of LKMD .....	119
Reference 2.2.3 Perda No.2/1994 concerning the revision of Perda No.3/1990 for Dinas Kebersihan, KMUP.....	121
Reference 2.2.4 Perda No.3/1990 regarding the cleansing service (Dinas Kebersihan).....	123
Reference 2.2.5 Perda No.11/1987 concerning the establishment of Dinas Kebersihan, KMUP.....	134
Reference 2.2.6 Agrarian Basic Law No.5/1960 regaining land.....	141
Reference 2.2.7 Presidential Decree No.55/1993 conserving land for public purposes.....	158
Reference 2.2.8 Ministry of Home Affairs Decree No.80/1994 Concerning Dinas for local public work.....	168
Reference 2.2.9 Guidelines of Cooperation Between Local Public Enterprise and Third Parties Minister of Home Affairs.....	182
Reference 2.2.10 The Improvement of Community and Private Participation in Cipta Karya.....	188
Reference 2.2.11 Establishment of Cleansing Local Enterprise of Ujung Pandang Municipality.....	199
Reference 2.2.12 Private Sector in Surabaya .....	210
Reference 2.2.13 Summary of Latest Status of Cooperation With Private Sector .....	212



Reference 2.2.14	Private Participation in Cleanliness Management in Ujung Pandang .....	218
Reference 2.2.15	Operation Instruction of Director General of Human Settlements (Cipta Karya) 1995/1996.....	219
Reference 2.2.16	Decision-Makers Guide in Solid Waste Management .....	222

**Major Study Items for Institutional Set-Up  
in 2015 (M/P) and 2005 (F/S)**



## II INSTITUTION AND REGULATION

### 1. Institution

#### 1.1 Governmental Organizations

- (1) Ministry of Public Works (PU) and Cipta Karya (Directorate General of Human Settlement)

The Ministry of Public Works was formed in the Development Cabinet based on Keppres (Presidential Decree) No. 183/1968, then culminated as one of eighteen (18) Ministries in compliance with Kepres No. 64/1971.

Reorganization has been made in August through September, 1994 in the Ministry particularly at the levels of Directorates and Sub-directorates but its major structures remain unchanged.

- 1) Directorate General of Human Settlements (Cipta Karya)

Cipta Karya is one of the three Directorates General in the PU and the Authority of the Central Government of Indonesia concerning this JICA Study for Ujung Pandang Municipality Kotamadya Ujung Pandang (KMUP). The new organization of Cipta Karya set up for its Central Government in September, 1994 reads as shown in Fig. 2.2.2.

- 2) KANWIL (Regional Office) of PU

KANWIL of PU is located in seven provinces very important for the PU under the Minister; three in Jawa, three in Sumatra and one in Sulawesi, out of the twenty seven provinces in Indonesia, having Dinas PU (Public Works Department) respectively. In the remaining twenty provinces, there are no KANWIL but simply Dinas PU having three sub-Dinas corresponding to the three Directorates General such as Dinas PU Cipta Karya at the respective Provincial Governments (Local government leveled Tingkat I) governed by the respective Governors.

- 3) Dinas PU Cipta Karya

Dinas PU Cipta Karya of South Sulawesi related to this Study is situated under KANWIL of MPW in administration structures as aforementioned because has KANWIL in South Sulawesi and also lie under the Governor on a Command Line. Eventually the head of Dinas PU Cipta Karya of

South Sulawesi has to make a report in parallel both to the Governor because its routine budget is provided with by the Provincial Government and to KANWIL because majority of development budget for it and its project units comes from the Central Government (the Ministry of Finance) through the after being allocated by BAPPENAS (National Development Planning Board).

4) Water supply and environmental sanitation training center

a. Introduction

The training center was established in Bekasi, West Java Province, started training the participants in 1986 mainly from governmental institution but some from private sectors and completed the construction in March 1990 with the floor of 5,370 m<sup>2</sup> in the site area of 15,000 m<sup>2</sup>.

b. Courses

There are two major training courses; General courses (Class I stopped in 1991, Class II for Supervisor and Class III for Planner) and Advanced course (managed by joint operation of Indonesian and Japanese).

c. Programs for wastewater and solid waste management.

In both the courses, some training programmes are provided trainees with for wastewater and solid waste.

d. Participants

Since 1986, the number of 449 trainees has participated in the respective courses according to the programmers. Seven (7) trainees have been sent to the center from KMUP for inspector and planning from 1986 thru 1992.

(2) Provincial government of South Sulawesi

The South Sulawesi Province is defined as one of twenty seven provinces in Indonesia including three special provinces (Yogyakarta & Aceh and the Capital City of Jakarta), based on the Law No. 5 of the year 1974 in which a clear and responsible autonomy is stipulated for a provincial government.

A Governor selected from at least three or at most five candidates by DPRD (Provincial Parliament) governs the territory of and the people in South Sulawesi comprising twenty five governmental administrative areas (Tingkat II); two municipalities and twenty three regencies as the head of the Province pursuant to the Law No. 5 of the year 1974 in addition to the Constitution based on for it, making functional the organization of South Sulawesi province as abstractly shown in Fig. 2.2.8.

BAPPEDA Tingkat I of South Sulawesi province is connected directly from the Governor and independent of the ordinary administration structures of the Provincial government organization.

KANWIL of PU is not directly connected with the Governor but with the Minister of PU by command line and however related by coordination line, though Dinas PU Cipta Karya under KANWIL is connected by command line to the Governor as described before.

1) BAPPEDA (Regional development planning board) Tingkat I,  
South Sulawesi Province

BAPPEDA Tingkat I functions as the provincial planning board to make its own plans of development, to follow national plans, and to support, if necessary to guide and coordinate, local governments of Tingkat II (Kotamadya and Kabupaten) for their development plans not only from physical angles but also from financial aspects in relation to the Provincial Government and the Central Government as well.

The Physical Infrastructure Division of BAPPEDA concerns this Study and particularly the section of spatial arrangement and land use (9 staff) considered deeply related with land acquisition for future final disposal sites of solid waste in areas beyond the administration boundaries of KMUP (Ujung Pandang Municipality). BAPPEDA Tingkat I has the MINASAMAUPA plan covering KMUP, Kabupaten Gowa and Maros.

2) Bandes (Rural community development) Tingkat I

Bandes Tingkat I carries out the implementation of rural development according to plans related to rural communities in compliance with the Governor and the Vice Governor under the umbrella of the Minister of Home Affairs in the same manner as that of BAPPEDA Tingkat I.

### **(3) KMUP (Ujung Pandang municipality)**

**KMUP is the capital city of South Sulawesi Province, one of the two cities, one of the twenty five Tingkat II on the governmental administration levels namely composed of the two cities and twenty three regencies in the Province, functions as a local government with a clear and responsible autonomy under the umbrella of the Ministry of Home Affairs in relation with the governor of South Sulawesi.**

**According to the regulation of the Law No. 5/1979 and those of the other relative laws, naturally of the Constitution and Laws enacted above the Law No. 5 the KMUP covers the jurisdiction of eleven Kecamatan (Districts) in which one hundred forty two Kelurahan sub districts exist.**

#### **1) Governmental system in the region**

**KMUP is positioned on the same level of Tingkat II as that of Kabupaten (Regency) in the governmental system in the region.**

**(Remarks: Kelurahan and Village administration level is newly defined by the Regulation No. 115/1991 of the Minister of Home Affairs dated 16 Dec. 1991, based on the Law No. 5/1979).**

**Besides the governmental institution, Forums actively function for development on each level as shown in Table 2.2.9.**

**Rural development in terms of the bottom up planning requires such steps under the guidance of BAPPEDA Tk. II as the following forums:**

- a. Musbang is held on Kelurahan level, chaired by head of the Kelurahan with the members concerned for development commencing with Inventory-taking of potential and the problems including suggestion to solve and then program proposal arrangement for development to be funded by the people or rural, regional (municipal and/or provincial) and/or national budgets.**
- b. Muker following Musbang is held on Kecamatan level, chaired by Camat with LKMD (Community Resident Institution in Kelurahan) expectedly in April/May to review the programs of development and proposals for it selected in Musbang.**

- c. Rekorbang is held in municipality, chaired by Mayor with key persons representing Kecamatan, mainly on matters of development budgets such as regional budget, inpress, national budget. BAPPEDA Tk. II prepares a proposal standard of program/project plan.

## 2) Organization of KMUP

The organization of KMUP is headed and activated with a clear and responsible autonomy by the Mayor who was selected by DPRD II (Municipal Parliament) according to the Law No. 5 of the year 1974 in the similar manner to the case of the Governor on Tk. I.

Under the mayor through a secretariate are there the divisions with responsibilities such as finance, personnel etc. Line functions such as project execution, operations and maintenance are performed by service departments or Dinas. Also reporting directly to the Mayor is made by municipal owned public enterprises (Perusahaan Daerah/PD) such as the water supply enterprise (PDAM). In addition, the Mayor coordinates the functions and activities of municipal offices of national agencies.

The organization structure is shown elliptically in Fig. 2.2.13. Special attention shall be paid to the Environment Department in the Assistant of Development Administration among others due to the fact that this department manages EIA and Environmental Prevention, and particularly be paid to both BAPPENDA (Regional Development Planning Board Tingkat II and Dinas Kebersihan (Cleansing Department) as well because there entities are deeply related to this Study though their levels and functions are different.

## 3) BAPPEDA Tingkat II, KMUP

BAPPEDA, KMUP operates for regional planning development on the KMUP, in the similar manner to that of BAPPEDA Tk. I for the Province with the similar faculties to that as elucidated before.

The basic organizational structure and responsibilities were established through:

- a. Decree No. 5/1974 of the Minister of Home Affairs
- b. Presidential Decree No. 185/1980
- c. Decree No. 185/1980 of the Minister of Home Affairs

d. Perda 10/1983 (Pembentukan BAPPEDA Tk. II KMUP)

The role of BAPPEDA II, KMUP is to assist the Mayor by formulating policy related to city development planning and the evaluation of implementation. BAPPEDA, KMUP also plays a supervising and contracting role.

4) Bandes KMUP

Bandes, KMUP (Rural community Development) works for rural community development at the level of Tingkat II, KMUP under the Mayor through the Vice Mayor in the organization structure of the Ministry of Home Affairs in the same way as that of Bandes Tingkat I.

5) Kecamatan

Kecamatan was stipulated for in Article 35, Clause (2) of the Law No. 5 of the year 1979, while then the matters entailed were provided for by the Regulation No. 82/1984 of the Minister of Home Affairs. Kecamatan is an administrative unit with delegation of power from the Tingkat II, not an autonomous unit and the Camat acts the representative of the Mayor at the kecamatan level. The Camat is assisted by a Secretariat of Kecamatan which has four affairs.

Muker (Temu Karya) is active as a forum of Kecamatan governmental administration level, especially to make proposals for regional development budgets to higher governmental bodies like KMUP.

6) Kelurahan

Kelurahan was also stipulated for in the Law No. 5 of the year 1979 (LN-RI the year 1979 No. 56 and the addition LN-RI No. 3153) and guidelines for its organizational structures and working systems were defined by the regulations of the Minister of Home Affairs No. 44 of the year 1980 and No. 7/1983. Based on the latest regulation of the Minister of Home Affairs No. 115 of the year 1991 (dated December 16, 1991), the organizational structure can be illustrated as shown in Fig. 2.2.23.

The Law No. 5 of the year 1979 provides that "an administrative set of kelurahan consists of the secretariat of kelurahan and heads of Lingkungan, the secretariat of Kelurahan consists of the secretary of Kelurahan and heads



of affairs, and accordingly the institutional matter can be illustrated as shown in Fig. 2.2.24.

Several Lingkungan (Areas) are positioned under one Kelurahan (as referred to Fig. 2.2.23) as an administrative unit for a certain area but carry out their duties as one body in the Kelurahan for the people/citizens of the Kelurahan not limited to those of their own respective particular areas (as possibly comprehended in Fig. 2.2.24). LKMD is formed pursuant to the Presidential Decree No. 28/1980 and composed of representatives chosen by the residents of Kelurahan.

#### 7) Dinas Kebersihan (Cleansing department)

Dinas Kebersihan was established in November 1987 based on the Local Government Regulation No. 11/1987 as shown in Reference 2.2.5 regarding its organizational structure and work program, as one of Dinas in other professional/functional group apart from the ordinary administration structure of KMUP under the secretary of the Mayor by order line, has had the organization structure as shown in Fig. 2.2.15 and functions with the total number of personnel amounting to 836 persons as of May 2, 1994 as listed in Table 2.2.2 & 2.2.3.

Related agencies and institutions participating in solid waste management are as many as tabulated in Table 2.2.4 in Appendix B.

#### 8) Others department (Dinas)

The Law No. 5/1979 stipulates Regional/Local Department (Dinas), which have been established in KMUP too for executing their various activities to the public in their respective fields under the Mayor. Dinas Kebersihan is one of a number of Dinas such as Dinas Pendapatan Daerah (Regional Revenue Department), Dinas Tata Kota (Urban Management Department), Dinas Pekerjaan Umum (Public Works Department), Dinas Kesehatan (Health Department) which are more or less related to this Study, Dinas Wesbang (Development Control Department), Dinas Pasar (Market Department), Dinas Lalu Lintas Angkutan Jalan (Land Transport Department), Dinas Pariwisata (Tourism Department) and so forth.

#### (i) PDAM (Water supply local government enterprise), KMUP

PDAM, KMUP was established in July 1975 based on the Regional Regulation of Ujung Pandang Municipality No. 6 of 1974 (see Reference 2.2.1) which was promulgated by the Decree No. 253/VI/1975 of South Sulawesi Governor on July 13, 1975 and started the operation in 1983 with about 400 personnel. Since the legal procedures have been taken to increase the efficiency of the management and operation by changing a part of the regulation No. 6/1974 in view of the Laws No. 29/1959, No. 5/1984 & No. 28/KPTS/1984 and of Home Affairs No. 690 - 1572/1985, and the regulations of Minister of Home Affairs No. 8/1983 No. 1/1984 etc. with emphasis on Responsibility of the Directors and of the Mayor as well, being retroactive to the PANCASILA a (Five Principle of Indonesian people) and the Constitution of 1945, the organization was changed from a one (1) director structure of 1983 (Fig. 2.2.16) to a one (1) president & three (3) directors structure in 1985, from which to a one (1) president & two (2) directors structure in 1992 and has been to date as shown in Fig. 2.2.18.

The number of personnel has been keeping a minor transition around 410 persons on the average since the establishment of PDAM. Its policies and broad operational directions are set by a Board of Directors chaired by the Mayor. Membership on the board includes personnel from Dinas PU Public Work Department, Dinas Kesehatan (Health) Department, and the Dept. of Finance of KMUP and/or Bank of Indonesia.

## **1.2 Community Organization**

### **(1) LKMD (Village community residence institution)**

LKMD is situated under the Head of Kelurahan as a vehicle of community participation in the organizational structure as shown in Fig. 2.2.23, in the Kelurahan but is an independent organization of the Head of Kelurahan and does not report to the Head of Kelurahan and assists in the process community participation. As part of this, LKMD prepares the DURP (Proposal List of Project Plans) or project proposals at the Kelurahan level.

The LKMD is divided into 10 sections, each responsible for an aspect of community life as illustrated in Fig. 2.2.28.

LKMD was formed based on the Presidential Decree No. 28/1980, showing an informal English translation as referred to Reference 2.2.2.

According to regulation No. 4 of 1981, the LKMD has three main tasks in providing services to both rural and urban villages:

- (a) To ensure development plans based on the principles of consensus (musyawarah);
- (b) To mobilize community participation for implementing integrated development, both in government or community development activities;
- (c) To create dynamic community conditions for maintaining the stability of Desa and Kelurahan security" (Yayasan Kesejahteraan Veteran RI 1991 : 380; Jahya Hanafi 1995).

The LKMD activity in TAS site is giving an aid to provide some tools for cleansing such as spade, sweeper, and another tools. In spite of this LKMD support is still limited. However if it is well managed as an organization that is sponsored by the government, it will be very helpful in cleansing management in Kelurahan by providing sufficient funds and tools for environmental sanitation.

The limitedness of LKMD capability are due to:

- (a) This organization is not yet managed well;
- (b) Its administrator is not serious enough to develop this organization;
- (c) There is no incentive for the manager

Up to 1994 LKMD was active in operation of hand cart (gerobak) for collection of waste. In return LKMD used to receive 40% of retribution fees collected from the Kelurahan residents. Under the new system of retribution collection using PLN offices Dinas Kebersihan does not give LKMD 40% anywhere. Consequently in most Kelurahan hand cart service operated by LKMD has ceased.

## (2) RT/RW

Both RT and RW are non governmental administration units of community as shown in Fig. 2.2.23. RW (Neighborhood Citizens Association) and RT (Lowest Neighborhood Association) are established on the regulation No. 7/1983 of the Minister of Home Affairs which stipulates that every RT should at least have fifty (50) chiefs of households while RW likewise one hundred and fifty (150) chiefs of households. One Kelurahan shall form RT and RW at least with 5,000 inhabitants.

RT and RW shall function as organizations of community which help Lurah/head of Kelurahan for governmental activities. Lurah shall appoint chiefs of RW through the election in the community while the chief of RW shall make a direct appointment to chiefs of RT.

Respective organization committees chaired by Lurah shall take procedures for the election of RW chiefs.

A number of RT depends on size of the population in the RW.

According to the guideline for of MPW Urban Development the following number of RT and RW is assumed :

1 RT 150 - 250 people/30 - 50 households

1 RW 8 - 10 RTs

The number of RW and RT is 788 and 4,228 in 1993 respectively according to Kantor Statistik KMUP.

**(3) Family welfare education (PKK) program**

PKK is an organization that is also formed by the initiative/sponsor of the government based on the Instruction of Minister of Home Affairs Number 10 of 1980, the PKK formed in central level as well as in Kelurahan/village level. This is intended to improve the role of moment in development, especially the activities oriented for the attainment of a prosperous family through the PKK organization.

Activity of PKK in TAS sites are still limited. It is taking a voluntary work together with the community members for environmental sanitation on every Sunday or another determined day. Another activity of the PKK women is reciting the Ko-ranic verses and regular social gathering whose members contribute to and take turns at winning aggregate sum of money ("arisan").

**(4) Other communities**

As for the implementation of city cleaning, the following organizations including LKMD and PKK are participating i the activities.

	<u>Organization</u>	<u>Kind of Activities</u>	<u>Frequency/ Year</u>
(a)	PKK (Family Welfare Education)	Guidance, Mutually Mutually voluntary	24 ×
(b)	LKMD (village community residence institution)	Mutually voluntary work	24 ×
(c)	Karang Taruna Neighbour- hood Youth Organization)	Mutually voluntary work	12 ×
(d)	Pramuka (Boy Scout)	Mutually voluntary work	4 ×
(e)	Youth Organization (KNPI/AMPI)	Mutually voluntary work	4 ×
(f)	Religious Organization	Speech/Religious Guidance	Base on schedule

Beside those social organization mentioned above, mutually voluntary work in cleaning are coordinated by some offices, governmental offices, banking, and private offices. Commonly, their activities not at regular.

## 2. Regulations

### 2.1 Reference to the Main Report

### 2.2 Reference to the Regulations Attached

- (1) Perda No. 6/1974 on the establishment of PDAM, KMUP
- (2) Presidential decree No. 28/1980 regarding only the concerned parts of LKMD
- (3) Perda No. 2/1994 concerning the revision of Perda No. 3/1990 for Dinas kebersihan, KMUP
- (4) Perda No. 3/1990 regarding the cleansing service (Dinas Kebersihan)
- (5) Perda No. 11/1987 concerning the establishment of Dinas Kebersihan, KMUP
- (6) Agrarian Basic Law No. 5/1960 regarding land
- (7) Presidential decree No. 55/1993 concerning land for public purposes

- (8) Minister of Home affairs decree No. 80/1994 concerning Dinas for local public work

### 3 Development of Human Resources

#### 3.1 Education

##### (1) Education on salubrious-living environment

Improvement of living environment entails public education on public sanitation and environment at all the levels of the inhabitants. Education on sanitation is required from individual salubrity in the extent to others, while on environment from the public point of view. Should the education be furnished the inhabitants with well, it would not be seen for example that plastic bags containing garbage and/or extremely dirty things were thrown in ditches.

The effort of encouraging the community awareness to the importance of environmental sanitation should be performed continuously and addressed to both the planner apparatus and contractor as well as to community. In article 9 of EMA (Environmental Management Act) stated : "The Government has the obligation to cultivate and develop the public's awareness of its responsibility in the management of the living environment by means of information, guidance education and research in the field of the living environment."

The elucidation of that article stated that education to initiate and encourage awareness among people is carried out through formal education from kindergarten/primary school up to institutions of higher education and through non-formal education.

##### 1) School education

Attention shall be paid to the following notes.

- a. The primary school teachers lack the understanding of environmental sanitation, and requires improvement through such as short training by experts in environmental education for the sake of improvement of teachers quality.
- b. In order improve the understanding of the primary and secondary school students on environmental hygiene and sanitation, a book

which is easy for them to understand should be made based on their level of knowledge with interesting presentation.

- c. Knowledge is the basic for shaping the people's behaviors and attitudes. To shape behaviors which support environmental awareness, provision of environment subject should be followed by field work, such as planting tropical plants, cleaning school yards and ditches together, and for long term activating reforestation movement in the school and campus surroundings.

Breeding-up discipline is said to start with home training but should be extended to school discipline through education. The education on sanitation and environment had better be made a compulsory subject in school courses from an elementary level. Regional/local administrators ought to ameliorate a curriculum of schools, asking the central government for a guidance and assistance to the implementation of the said education. However, it is noticeable that discipline can be bred up with simple means without cost such as sweeping, cleaning, aligning things at the places of learning and playing in the school, if pupils and/or students would be accustomed to doing such actions as a daily routine work.

To improve the meaning and comprehension on environmental sanitation through a formal and non-formal education. In this regard it should be stipulated the educational curriculum including the city cleansing/sanitation of wastewater and solid waste management that is begun in Elementary School up to Senior High School (local curriculum content for education in Ujung Pandang).

## 2) Education in universities

In educational aspect, the improvement of the qualification of human resource is very important, especially the government apparatus in the field of wastewater and solid waste management.

The local government can make use of the Urban Management Study Program, one of the post Graduate Study Programs (PPS) of UNHAS (Hasanuddin University). This Urban Management Study Program, beside performing a regular "Master Course" for the Local Government's apparatus, also performs a "Training Course" for the Local Government apparatus, private, and Non-Government Organization (NGO's) in the field of city management.

In research aspect, university can provide appropriate alternatives for the solid waste management, or solve the problem of environmental sanitation in the city of Ujung Pandang.

Obligatory (Rural) Social Action Internship (KKN) program for the advanced university student or the students who almost finish their study, or except 8 (eight) credit semester unit will potentially be used in the wastewater and solid waste management.

Those programs being carried out by the KKN students so far, consist of :

- a. Health and environmental sanitation;
- b. Guidance on environment, health/sanitation and law;
- c. Education;
- d. Spiritual and religion;
- e. Administration;
- f. Facility and infrastructure;
- g. Effective technology.

The KKN program is carried out for two months in the site (rural village), and it is carried out regularly every year. In Hasanuddin University it is conducted twice a year (April-May and August-September). In each phase, the number of students who take the KKN are about 1,300 - 1,400 persons.

### 3) Public education in community

Public education on living environment is regarded as well provided to the community people in some communities through the activities of such an organization as PKK Family Welfare Education), LKMD (Village Community Residence Institution) in Kelurahan, Karang Taruna (Neighborhood Youth Organization), Pramuka (Boy Scout) and the other mutually voluntary organizations, as far as solid waste primary collection is concerned. Such communities as described above, cannot always cover all the areas in Ujung Pandang and therefore public education in community necessitates enhancement of living environment towards salubrious places.

It is considered required for heads and/or chiefs of formal and/or non-formal organizations of the society to map out an educational plan suitable for the respective levels and organizations setting up a time schedule, for



instance, yearly, quarterly and/or monthly for implementation of the education.

4) Means for education

Some effort that can be performed, among others are :

- a. Displaying some poster about environmental cleansing and its management, in several strategic places, such as in the market, in exhibition place, etc.
- b. A relay conversation by informal leaders in coffee shops or at another informal places will bring a good result.

To diffuse education on sanitation and environment to the people, it is deemed to be effective to utilize mass-media such as radio broadcasting, telecasting on TV, newspaper distribution etc. Administrators (heads/chiefs) are required to take steps for approaching institutions of mass-media to look for possibilities of using the means. For example, a program of this education is included in an educational program, if any and even though it would be partial. In addition, it is advisable that official gazettes had better be more utilized for the education.

(2) Personnel training and education

1) LIDAP and RIAP

LIDAP (Local Institutional Development Action Plans) and RIAP (Revenue Improvement Action Plans) had been prepared by Ministry of Home Affairs for the officials of Sulawesi region, particularly of the authorities concerned in Ujung Pandang as part of IUIDP (Integrated Urban Infrastructure Development Programs) and ended in 1994.

Materialization of a plan requires institutional arrangements and revenue as well so that the results of LIDAP and RIAP will legally be anticipated for a future plan in the frame of the central government policies.

2) Water supply and environmental sanitation training center

a. Introduction

The Directorate General of Human Settlements (Cipta Karya), Ministry of Public Works (PU) is responsible for the development of

water supply and environmental sanitation as one of its tasks and duties.

A training center was established in Bekasi with the aim of supporting public and private institutions involved in the provision as well operation and maintenance of water supply and environmental sanitation facilities.

The training center is expected to strengthen human resources of the personnel engaged in the sector.

The government of Japan continues its aid through the Technical Cooperation Project for 5 years starting on April 1, 1991.

**b. Data of project**

- Project site : Margahayu village, Bekasi regency, West Java province
- Site area : 15,000 m<sup>2</sup>
- Floor area : 5,370 m<sup>3</sup>
- Amount of grant : 1,140 million yen
- Construction period : April 8, 1989 - March 5, 1990
- Technical cooperation period : April 1, 1991 - March 31, 1996

**c. Courses**

- General course (managed by Indonesian) for two weeks
  - I: Class I (for the participants finished technical schools) for operator stopped in 1991)
  - II: Class II (for the participants graduated as a Bachelor in Technics) for Supervisor
  - III: Class III (for the participants graduated as an engineer) for planner
- Advanced course (managed by joint-operation of Indonesia and Japanese for three works.

This course will terminate on 31, 1996 as referred to 2.6) mentioned above. It is expected to extend the period a year or a year and half at the discretion of the Ministry of Foreign Affairs of Japan with some aid from the government of Japan.

- Special course

This course shall be implemented at the request of a local government in the place decided by the government, with all the expenses borne by the government including all the expenses for experts from the center.

- Information on opening of courses

The Sec. General of Cipta Karya is in a position to inform local governments of an implementation schedule of training courses, which depends on an annual budget. In response to the information, local governments of an implementation schedule of training course, which depends on an annual budget. In response to the information, local governments will send to Cipta Karya an application form filled out with necessary descriptions of its selected-candidate trainees.

d. Training programme

There are two major programmes; one for Water Supply and the other for Environmental Sanitation, and each programme has both the general and advanced courses. Although some courses in the general course of the programme for Water Supply are considered useful for trainees of wastewater and solid waste management, the Environmental Sanitation Training Programme is regarded as much more suitable for them, as shown below.

## Training Programme for Environmental Sanitation

No.	TYPE OF TRAINING COURSE	DURATION (Weeks)	NUMBER OF Participants	PARTICIPANTS
1	<b>A GENERAL COURSE TRAINING COURSE OPERATORS</b>			
	- Solid waste	1	20	Staff of Local Government Level II, i.e., Cleansing Div. Public Workshop Planning Boards
	- Wastewater	1	20	
	- Drainage	1	20	
2	<b>TRAINING COURSE FOR SUPERVISORS</b>			
	- Solid waste	1	20	Project in the Province Public Works, etc.
	- Wastewater	1	20	
	- Drainage	1	20	
3	<b>TRAINING COURSE FOR SUPERVISORS</b>			
	- Solid waste	1	20	
	- Wastewater	1	20	
	- Drainage	1	20	
1 2 3	<b>B ADVANCED COURSE</b>			
	Waste Management & Planning	3	10	Dir/head of Cleans. Dept. Engineers of Related Sec. Engineers of Related Sec.
	Domestic Solid Waste Disposal	3	10	
	Human Waste and Domestic Wastewater Disposal	3	10	

### e. Participant

Since 1986 before the construction of the project started some training courses had already opened, the majority of official personnel has come from all the (27) provinces of Indonesia and the number of trainees has reached 449 persons even only in the domains of wastewater to date.

## 3.2 Role of Community and Citizens Participation

### (1) Role of community

#### 1) Policy of Cipta Karya for Repelita VI

Sub-directorate for Environmental Sanitation, Directorate of Technical Department (Sub-Dir PLP Bintek) produces a strategy of community sanitation program for Repelita VI, in which the emphasis is placed on improvement of the community awareness about the necessity of good sanitation facility and it is also explained that a sanitation work plan is handled in a community level. Further it is added that the most important

thing is to give facilities for promoting community participation and awareness of its responsibility to solve the problems. Solving the problems is important for each family of the community.

A local government is expected to prepare a strategy using a modified community sanitation program method enough suitable for the community in Kelurahan or Desa (Village) level. The necessity of proper sanitation shall permeate the community using mass/electronic media, poster distribution, brochure and TV/radio announcement.

A sanitation work plan shall be prepared by Kelurahan/Desa and submitted to kecamatan by head of Kelurahan/Desa.

The basic policy for wastewater management in REPELITA VI is shown by CIPTA KARYA as concisely explicated above and thus for solid waste would be similar. In a nutshell, effective utilization of the inherent virtue in the society depends on showing of a concrete clue and budgeting of a fund to the community and/or citizen.

2) **Community organization for the cleansing movement of TEDUH BERSINAR**

The community participation in solid waste management in KMUP, especially in the cleansing movement of Teduh Bersinar in the year 1994 until May 1995, it has being carried out by several organizations as follows:

- a. Community Agency, namely from Dinas PU of South Sulawesi province, Cleansing Board of KMUP, National Housing Enterprise, KIP-IUIDP project, Living Environmental Sanitation Project of South Sulawesi province, Indonesia Armed Forces, District Government and Lurah of all parts of KMUP, as well as University and the Performed Body of Environmental Management Biro of South Sulawesi.
- b. Private sector, GAPENSI (National Businessmen Association of Indonesia), N.V Haji Kalla, Insurance Board of Indonesia, PT (Persero) Jiwasraya Insurance, PKK of KMUP, IDI (Indonesian Physician Association, PT. Bank Utama, PT. Cocacola Pan Jaya, PT. Melati Tunggal Inti Raya, FKPPI (Communication Forum of the Retired Armed Service Officer's Sun and Daughter), PT Sampurna, PT. Amal Group, PT. Bosowa, PT Bank Perbangunan Daerah (Local

Development Bank) of South Sulawesi, Correspondent, and University Student.

c. Non governmental/self-reliant organization

PKK-KMUP, LKMD, RW and RT, as well as the community members, Environmental Partnership Institution, Information Center for Environmental Resources of Sulawesi (PIPAS)

3) Role of community for the cleansing activities

Public participation is indispensable to realize a clean and healthy urban environment. Also it has an essential function in ensuring efficient solid waste management. To achieve the targets of this master plan, residents are requested to follow the instructions of, and cooperate with the cleansing authority. These instructions shall encompass;

- a. Proper storage and discharge of solid waste
- b. Clean-up activities of surrounding area
- c. Recycling and volume reduction of solid waste
- d. Primary collection by community
- e. Cooperation for fee collection

(2) Citizens participation

1) Gotong Royong and Musyawarah

a. Citizens participation based on Gotong Royong and Musyawarah Gotong Royong (community self-help) has been existing as an admirable virtue of the Indonesian and their society in Indonesia. In addition, Musyawarah (deliberation) is active particularly in the community. By means of the inherent facilities, it would be considered easy to fulfill the role of community and/or citizens' participation in amelioration of community awareness of their living-environmental sanitation, should a clue to the way of implementation and some budget, even if it would be small, be furnished by a governmental institution as a pump-priming policy. The initiative shall be taken by a local government with some fund.

b. Community self-help (gotong royong) can be defined as the activity that carried out by a group of community together, mutual help and mutual benefit, because there is a mutual interdependency among the community members. The community self-help concept that has been recognized so far

by the Indonesian people, now has a broader meaning, including the activities together for handling various works for public interest.

One of community self-help realization is a voluntary work (kerja bakti). Voluntary work is an activity along with community members for accomplishing a project that supposed to be useful for public interest. The voluntary work appears and continues because of the initiative of the community themselves or because of an instruction from a superior or a leader.

In Indonesia, the voluntary work has been existing since long time ago. At that time, the rural society was mobilized to work for a kind of interest, or for a religious purpose. However, nowadays the voluntary work activities are oriented to public purposes such an effort of environmental cleansing. In Ujung Pandang, the communities self-help activity that oriented to sanitation is in form of a voluntary work conducted by the community of RW and RT as well as all of community level residents who live around the location. Beside the groups of agency, government, individuals, and social organization that are also active in conducting a voluntary work.

## 2) Leadership of heads/chiefs of communities

Community participation in environmental sanitation entails the leadership of heads and/or chiefs of the communities such as Kecamatan, Kelurahan, LKMD, RW, RT, PKK and the other communities.

In the case of city cleansing, the following major constraints are liable to make low citizens' participation.

- a. The low awareness of community members to follow the government's instruction.
- b. Social-cultural influence
  - The community who live in rural area sometimes feel hard to follow the government's instruction in discharging their waste rightly/keep environmental sanitation.
  - As community member, they feel ashamed to discharge their waste if somebody see them; therefore commonly they discharge their waste early in the morning, so its disposal system tend to be uncontrolled.

- Some community members feel proud if the workers of Dinas Kebersihan come to their houses for collecting their waste.

The community self-help (voluntary work) is mostly influenced by the leadership of Mr. Lurah or local community leaders. The community leaders must be able to motivate and encourage awareness in order that the community is willing to participate in environmental sanitation. Thus, the community leaders must be able to perform a clear information to the community. This information can be either orally or in writing (letters).

If this activity of community self-help (voluntary-work) can be managed well, it will be a very potential power for making the sanitary program successful, presently and in the future, since it can save some money, power and time.

### **3.3 Participation of Private Sectors**

#### **(1) Wastewater management sector**

- 1) According to the estimation of future social frame, roughly 0.8 to one million people, or 70 to 80% of the increased population will live in new housing estates provided by both public and private developers. The wastewater generation from these future housing complexes is very high and hence their treatment will contribute to a very significant environmental and sanitation improvement. Accordingly, housing developers shall be enforced to provide their own communal (modular) wastewater treatment system for their housing complexes. For this purpose, guidelines concerning the provision of communal wastewater treatment system by housing developers, are formulated by the Study Team.

On the other hand, other types of private sector participation will be expected so far as the involvement is profitable. There are some components the private sector can participate in, though small scale, as follows:

- Desludging
- Reuse of sludge
- Recycle of treated water



Now Dinas Kebersihan is conducting the desludging of on-site facilities. But this can be contracted out to the private sector under the guidance of the government.

Once the collected and digested sludge was dried up, this can be reused as fertilizer, provided it contains insignificant hazardous matters. This can be sold if the market becomes large enough to be profitable.

The treated water (wastewater) can be recycled for a certain purpose like watering for plants or vegetation, especially in dry season.

Implementation of the above activities would serve to lessen the burden of the governmental organization.

2) Technical memorandum on wastewater management in Repelita VI (Sub-directorate for environment sanitation, Directorate technical department of Cipta Karya)

(a) The V.2 Institutional Criteria 2. On-site System with IPLT

This describes that Transport system (vacuum truck) is conducted by responsible organization of Pemda Tk. II and/or "Private Sector". The management by "Private Sector" must be monitored by responsible organization of Pemda Tk. II.

(b) In the clause 3, it is mentioned that the management of this system is conducted by PDAM/the responsible organization of blackwater management or "Private Sector" for the area which has "Cost Recovery Potential" and that as "Note" Big Scale new housing estate with high population density is managed by "Private Sector".

(2) Solid waste management sector

1) Contract out of solid waste management activities

The following activities shall be considered for contract out.

Collection service

Street sweeping and ditch cleansing

Operation of final disposal site

### Operation of workshop

Concerning collection service, it seems possible to contract out around 30% of collection services considering some limitations of private companies. In the Future City in Kecamatan Panakkukang and at Permunas housing estates in Tamaranleya and Sudiyan, developers are collecting solid waste using dump trucks at present together with collection of solid waste charge. Development of these systems will contribute to future expansion of private company participation. It is noted that contract out shall be carefully examined because new retribution system introduced in 1994 will need to be modified to adjust with private collection.

One strategy to clean up a certain area is to contract out the area under the condition of payment by weight collected and transported using unit price agreed in the contract.

#### 2) Other possibility for private participation

To reduce solid waste amount generated through economic activity, charge level of solid waste shall correspond to discharged solid waste amount. Also charge shall be enough to cover cost of solid waste collection and disposal. If this principal is fully adopted in solid waste management in KMUP, collection service for large amount dischargers such as hotels and markets will be the most profitable fields in solid waste management.

Therefore, these fields have the potential to attract private company participation in the case where public sector will not subsidize large amount discharger. If private sector collects waste from some sources of solid waste in KMUP, the work load of the public sector will decrease. Therefore, retribution fee shall be set considering the policy of encouraging private sector participation.

#### 3) Potential of contract-out

In light of the examples in Jakarta, Surabaya etc., waste collection service and street sweeping are considered the promising fields with much potentially of contract-out to private sectors.

For the first step, Dinas Kebersihan/PD Kebersihan should make efforts to look for some private companies which would have potentially of dealing with such services even if the domains of their activities are now different from those services, checking the existing private companies in KMUP. This is because no candidate companies have been proposed for those services in KMUP.

The second step is to negotiate with such candidate companies about conditions of the contract-out, even if a service area is small and/or its level is limited. To take action is essential and to make efforts start taking the first step is considered indispensable for materializing any contract-out.

4) Example in KMUP evaluated from an odd aspect

PT Asindo has constructed as a housing developer the so-called future city, Panakkukang Mas, at Kecamatan Panakkukang in KMUP and is operating the waste collection inside the area. The operation of waste collection for/it from houses/buildings in the area might be said as a sort of contract-out to the private sector with the view from an odd aspect. It is advisable to seek possibility of the private sectors' role regardless of odd and/or normal conditions at the beginning.

5) Tourism development

a. Requirement for tourism development in islands

In case the island has a large amount discharger such as a tourism facility, it will be recommendable to entrust operation to the large amount discharger.

Tourism development schemes in island area should avoid water pollution of the sea which is the most important tourism resource and contribute to improve living environment on the island. Concerning solid waste to be generated, developer of tourism shall be responsible for disposal of solid waste. In addition to this, the following countermeasures shall be taken in principal.

- All developers shall adequately treat and dispose of their solid waste by themselves. Since solid waste generated on the island is small, the facility to be constructed by a developer shall have

enough capacity to treat and dispose of all solid waste generated in island.

- In principal, developer shall construct small scale incinerator and composting. If a developer employs means to transport solid waste to the main land, necessary facilities for transportation including transportation on the mainland shall be prepared.
- Location of treatment facility and landfill site shall be selected at proper locations to avoid pollution of drinking water source and sea water.

b. **PT. Gowa Makassar Tourism Development Corporation**

Decree No. 1188/XI/1991 of South Sulawesi Governor dated Nov. 5, 1991 permit the corporation to develop the area of 1,000 ha (300 ha in Kacamatan Palangga, Gowa and 700 ha in Kecamatan Pallanga and Mariso, KMUP for a tourism area of Tanjung Bunga, if the location is acquisitive with indemnity given to the land owners.

Since some area of the development is overlapped with the area of the Study, it is considered as a piece of idea to negotiate with the corporation about implemental possibility of a contract-out to even if it is a small and/or a part of work transferable to the private.

#### 4. Establishment of Wastewater Management Institution

Neither any institution has ever been set up for wastewater in KMUP nor a specific regulation exists for it in KMUP, though the Law No. 20/1990 stipulates in Article 27(1) that disposal domestic wastewater shall be regulated by Perda/Local Regulation.

##### 4.1 Arrangement in Other Cities

It is useful for setting up a frame towards 2015 in Ujung Pandang to study some cases of other cities with emphasis on living-environmental protection measures specially about wastewater management.

###### (1) PD PAL JAYA (Jakarta)

- 1987 BPAL DKI, the wastewater management office, was established.
- (a) The Approval of Public Works Minister No. 510/1987 concerning the establishment of BPAL DKI.
- 1988 (b) The Approval of DKI Jakarta Governor No. 1346/1988 concerning the regulations for sewerage system.
- 1989 (c) The Approval of Public Works Minister No. 310/1989 concerning the regulations for sewerage system, the revision of the Approval of DKI Jakarta Governor No. 1346/1988.
- 1991 PD PAL JAYA was established.
- (d) The Local Regulation of DKI Jakarta No. 10/1991 with the Approval of Domestic Affair Minister No. 668.311.1-1165 concerning the establishment of PD PAL JAYA.
- 1992 (e) The approval of DKI Jakarta Governor No. 45/1992 concerning the regulations for sewerage system. The revision of the Approval of DKI Jakarta Governor No. 1346/1988.
- (f) The Approval of DKI Jakarta Governor No. 240/1992 concerning the Organization of PD PAL JAYA.
- 1994 (g) The Approval of DKI Jakarta Governor No. 211/1994 concerning the user charges. The revision of The Approval of Public Works Minister No. 310/1989.
- (h) The Approval of DKI Jakarta Governor No. 2-0823/1994 concerning the supplemental organization of PD PAL JAYA. The addition to the Approval of DKI Jakarta Governor No. 240/1992.

(2) The sewerage management in PDAM (Bandung)

- 1974 (a) DKK: Dinas Kebersihan dan Keindahan Kota (City Cleansing and Beautification Agency) managing 1) Sewerage, 2) Solid Waste and 3) Gardening
- 1974 (b) DTP: Dinas Teknik Penyelatan (Water Supply Management Agency) was reorganized into PDAM : Perusahaan Daerah Air Minum (Water Supply Regional Public Enterprise).
- 1981 (c) The sewerage management of DKK was incorporated into PDAM, based on The Regulation of Kotamadya Bandung No. 21/PD/1981 with the Approval of the West Jawa Province Governor No. 188.342/1983.

(3) Further to the case of Cirebon, it is added that the activity of operation and maintenance of the wastewater system has been managed by PDAM (Cirebon) since October 1994 based on the Perda No. 19/1994 concerning the Institution for Wastewater in Cirebon.

(4) Tangerang : Both the Central government and PDAM Tangerang were in charge of the sewerage management in Tangerang in 1985. The authority to manage sewage works was transferred to PDAM Tangerang in 1993 according to the Approval of the Bupati of Kabupaten Tangerang concerning the regulation for sewerage system.

(5) Comparison of personnel number

In order to get a clue to an appropriate number of personnel, the comparative calculation is made about the number of personnel (persons) to the volume (cubic meter per day) of treated wastewater among Jakarta, Bandung and Denpasar (Bali) as elliptically elucidated as follows for comparison with the proposed case of KMUP.

Case	Name of City	Number of Personnel	Treated Wastewater
a.	Jakarta	90 persons	43,200 m <sup>3</sup> /day
b.	Bandung	153 persons	70,000 m <sup>3</sup> /day
c.	Denpasar	77 persons	44,000 m <sup>3</sup> /day

Supposed that the proposed volume for the case of KMUP in 2015 would be 290,000 m<sup>3</sup>/day, the number of necessary staff for the case of KMUP should be 604 persons in the comparative calculation with the case "a", 643 persons in that with "b" and likewise 508 persons in that with "c".

## **4.2 Set-up of a Plan for a Wastewater Project Unit**

### **(1) Plan for a wastewater project unit**

The KMUP shall take the very first step for planning a project as soon as possible, determining the undermentioned factors of the project according to its intention policy and strategy based on the results of a Feasibility Study (F/S) in this Study and referring to the cases of PDAM (KMUP), the PD PAL JAYA (Jakarta), the PDAM (Bandung) etc.

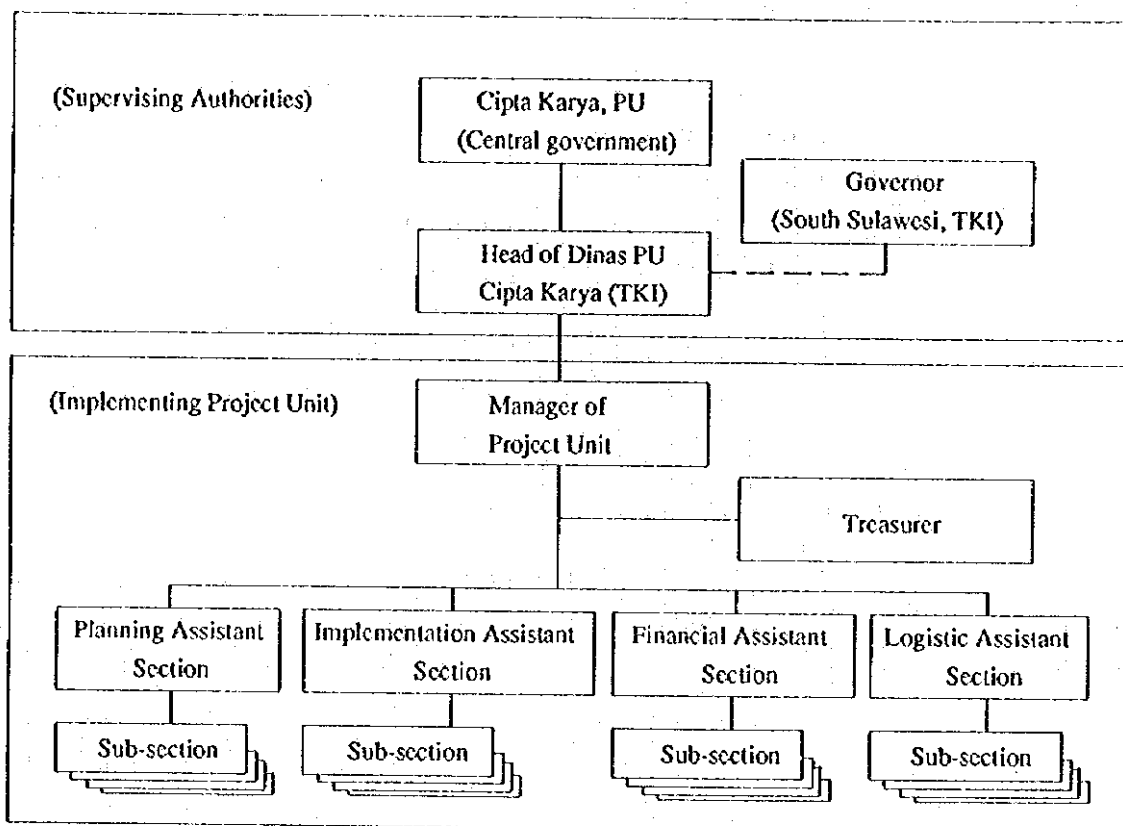
- 1) **Land:** Proposed land shall be prepared.
- 2) **Personnel:** Minimal number of personnel necessary for the project shall be decided.
- 3) **Content:** Project plan shall concisely be mapped out.
- 4) **Community:** Community council shall be described.
- 5) **O&M:** Operation and maintenance costs shall be clarified, budgeted and borne by KMUP.
- 6) **Others:** Other necessary items shall be mentioned if any.

A proposal document has to be prepared for the project, consulting with Cipta Karya, its KANWIL PU: Kantor Wilayah PU (representative office of the PU), the provincial government TK I of South Sulawesi and other necessary authorities such as sections and/or departments in charge of the Ministry of Home Affairs pursuant to the necessity.

### **(2) Structure of project unit**

The following organizational structure will be presumed for the project units in the light of past cases of project units for the PDAMs.

(a)



Organization of Project Unit

Source: JICA Study Team (Hearing from Sub-Director of Eastern Region II, Directorate of Eastern Regional Development, Cipta Karya, the PU)

Remarks: \_\_\_\_\_ Command line & ..... Coordination line

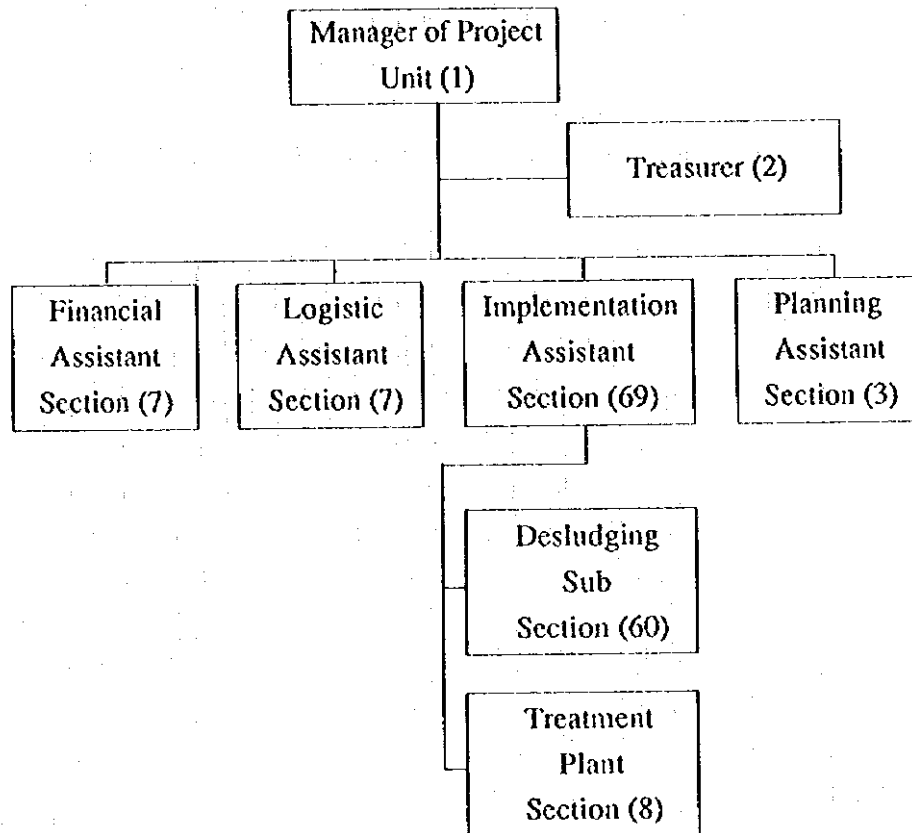
Concerning the size/scale and structure of the project unit, it is needed to consult with the aforementioned authorities concerned on account of the case that the PT PAL JAYA Jakarta started merely with the head, the administration & financial section, maintenance section and control section.



(b)

(Project unit in 1996)

Total: 89 persons



Remarks: A few administrative staff are deployed to the sub-sections of the implementation Assistant Section. Thus, the administration & the technicians are 22% & 78% in number of personnel respectively.

**(3) Application of proposal for project to Cipta Karya**

The project proposal shall be submitted to Cipta Karya, the PU, the Central government after the consultation with its KANWIL in South Sulawesi TKI. Cipta Karya will define its order of priority and prepare financing, provided that it may rank on a high priority.

**(4) Management of project unit**

The project shall be managed by a project manager under the umbrella of Cipta Karya, the PU, with the construction fund from Cipta Karya.

**(5) Project period**

It is natural that a project period should depend on content, scale, difficulty etc., of the project. In the case of this project, it is considered in the light of the present concept for wastewater management at the first stage that a few years, simply 4 or 5 years will be needed for the construction.

**(6) Time schedule of the project unit**

The decision is made in the 3rd field survey on the construction and service works commencing with the On-site-system (Desludging works including a Small Modular System : SMS). As for the Off-site system (Large Modular System : LMS and Conventional Sewerage System : CSS), a detailed design : D/D is scheduled to start in 1996 and to complete a year, then the construction requires three (3) years from 1997 through 1999 and after that the provision of services will start in 2000 (along with fee collection).

**4.3 Establishment of a Transitional Unit (BPAL)**

**(1) Steps toward BPAL**

Upon completion of the project, the manner of the project unit shall make a report on its completion to the Mayor of KMUP and a request to the Mayor for a letter of recommendation to set up a BPAL, addressed to the director General of Cipta Karya.

After obtaining the approval of the Director General, Cipta Karya, BPAL will be established pursuant to a Perda prepared by the Mayor and promulgated by the Governor of South Sulawesi, under the umbrella of the Ministry of Home Affairs. However, BPAL still requires technical assistance and guidance of Cipta Karya.

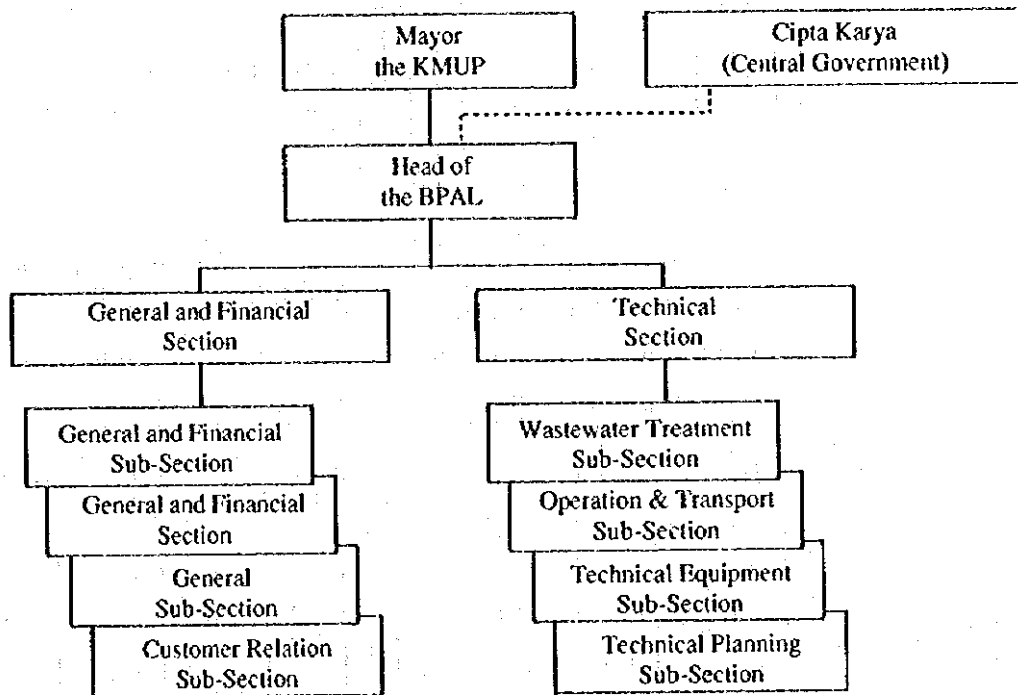
In general, three years and two years will be considered necessary for an experimental period and a strengthening/stabilizing period of BPAL respectively, according to the past cases of the PDAMs. Reference is made to the joint decree of the Minister of Home Affairs No. 3/1984 and the Minister of Public Works No. 26/KPTS/1984, specially Chapter II, Article 2 and Chapter III, Article 3 thru 5.

The BPAL shall be scheduled to be set up as early as possible by the year 2005 and at the same time to be handed over the work of night-soil

collection to by either Dinas Kebersihan or PD Kebersihan if the PD Kebersihan is established.

(2) Structure of BPAL

The organizational structure of BPAL is expected in principle to be built upon the project unit and presumed as illustrated below.



Organization of BPAL

Source: JICA Study Team

(3) Approach from construction plans of facilities

It shall be studied whether the construction plans of facilities made by the members of hardware groups in the Study team will be actually applicable to the set-up of a new institution.

Pursuant to the plan, the proposed number of staff members including the personnel administration is as shown below.

**Number of Staff for Wastewater Management**

(unit: person)

Category	Year & Number of Staff (below)	2005	2015
On-Site	Desludging work including small Modular System (SMS)	111	109
Off-Site	Large Modular System (LMS) and Conventional Sewerage System (CSS)	148	218
	<b>Total</b>	<b>259</b>	<b>327</b>

**(4) Examination of the necessity of BPAL**

BPAL shall be necessary even as a transitional unit aiming at the amalgamation of BPAL with PDAM because of the following reasons.

**1) Nation-wide trend in and suitable for Indonesia**

A majority of wastewater management activities has actually been conducted in Indonesia under the dispensation of water-supply management institutions such cases as that of Bandung, Cirebon, etc., except the case of Jakarta as far as checked in the Study.

The case of Denpasar is now on the stage of the project unit which was established in July, 1995, is managed by 9 persons and supported by 12 consultants. Should the direct merging of the project unit with PDAM be not suitable, a BPAL would be formed from the unit according to the answer of the responsible persons in charge at the interview made in Denpasar on June 26, 1995.

**2) Easy handling of fee collection**

It is reported that Bandung PDAM has been implementing fee collection for wastewater treatment together with that for water supply, regarding the volume of wastewater as 70% of that of supplied water measured by meter. The fee collection for wastewater treatment is conducted in the name of and from the view-point of beautification of the city even from the households not furnished with any pipe connected to the sewerage system.

Although the covering rate of water supply of Bandung PDAM amounts to 63% approximately in population (about 1,287,000 persons including about 412,000 persons provided with water by tank truck at 2,061 places of a public tap/faucet).

In this way, Bandung PDAM is coping with the fee collection for wastewater treatment.

3) Unappropriateness of hasty joint of unit for PDAM

Observing the present and foreseeable financial situations of PDAM of KMUP, it is not advisable to merge the project unit with PDAM as one of technical divisions/departments of PDAM without a transitional unit like BPAL.

Since Debt service coverage ratio of PDAM is unfavorable, in the great anticipation of favorable changes, the project unit had better take time to spare for itself and PDAM as well. This is the reason why the project unit had not better hastily be amalgamated with PDAM when it terminates but be converted to BPAL.

(5) Case of BPAM

The regulation for BPAM stipulated in Chapter III Part I Article 59 that "In implementation of its basic duties BPAM conducts the functions of:

- (a) Provision of general services
- (b) Collection of repayment (fee) for the services until the limit in which the sale can cover costs of operation and maintenance".

Thus, it is hardly agreeable that the project unit is organized into the structure of PDAM unless it is evident whether it can pay off for itself. Provided that the case of BPAL would be the same as that of BPAM, BPAL might be in a position to check whether it is capable of paying off in its business and to be consolidated with PDAM, should the Clause (b) above be applied to BPAL too, bringing any burden with it on to PDAM.

4.4 PDAM, KMUP

(1) History (from the papers of PDAM)

The development of water supply in Ujung Pandang is explained as follows :

- 1924: Installation I Ratulangi with the capacity of 50 l/second served half of the city.

- 1976: Based on PERDA TK. II (Regulation) Ujung Pandang No. 6/1974, then legalization by the Governor of South Sulawesi decree No. 253/VI/1975 on June 13, 1975 and Implementation of Mayor Decree No. 21/P/II 1976 on February 26, 1976, the municipal water supply company was established which had been a replacement status of the municipality water supply board of Ujung Pandang (Dinas Air Minum KMUP).
- 1977: Product capacity increased to 500 l/second through the installation II at Panaikang, including a network extension.
- 1989: The water source of PDAM of 570 l/second through Project development of the flow quantity of clean water was increased as much as 500 l/second with the installation II of Panaikang, so that the total KMUP production reached the capacity of 1,070 l/second.
- 1992: The additional water treatment unit of 20 l/second with the installation III at Antang made the total of product capacity of 1090 l/second.
- 1996: In 1996 the additional installation with the capacity of 1000 l/second is planned, which is located in Kelurahan Tamarongan, Kecamatan Somba Opu, Gowa, with the area of 155.164 m<sup>2</sup> (15.5 ha).

**(2) Organizations of PDAM at present and in the past**

**1) Organization of PDAM in 1983**

The structure consists of the four departments; a. Financial department, b. Plan and control department, c. General administration department and d. Technical department.

**2) Organization of PDAM in 1985**

The system is composed of the three managers, the security guard and the research & development. The three managers were Technical, Financial and General.

**3) Organization of PDAM in 1992 to date**

The present-organizational structure is composed of the two managers; General & Financial and Technical, the two groups of works;

Development & research department/Internal auditor unit and Security guard/Electrical data processing, and Housing service units.

**(3) Number of personnel of PDAM**

The number has fluctuated between 391 and 424 persons from 1985 thru 1993, while it is 417 as of December 27, 1994.

**(4) Structure and personnel number in the future**

The director explained at the interview of December 27, 1994 on the future structure and number of personnel as follows.

**1) Structure**

It will be changed according to expansion of service areas and upgrading of the services, based on the provisions stipulated on the pages from 255 to 260 in the Compilation of Laws for Local Government Enterprises, where the provisions are however stipulated only on the BPAM.

By observing the changes in the past as compared to one another, it is understandable that the structure may be modified to cope with issues newly arising in the future.

**2) Number of personnel**

**a. 800 persons approximately in 1999**

At present PDAM comprised of 417 personnel is supplying water to 53,537 households. Since it is estimated that the number of households will be more than 100,000 in 1999, the number of personnel will be increased to around 800. Should computerization be further introduced, the number should not necessarily always increase in proportion to increment of the capacity of water supply.

**b. Ratio between administration and technical domains**

Roughly, the percentage of personnel is considered 40% for administration fields and 60% for technical fields.

**4.5 Amalgamation of BPAL with PDAM**

**(1) Merging of BPAL with PDAM**

1) It is planned in the Study for the M/P that BPAL shall be merged into PDAM of KMUP by the year 2015.

2) Revision of Perda No. 6/1974

Based on a revision of the Perda No. 6/1974 for PDAM at the discretion of the Mayor of KMUP and the approval of the Governor of South Sulawesi, BPAL shall be consolidated into PDAM of KMUP.

3) Structure and personnel number in future

The structure may be modified to cope with issues newly arising in the future in light of reviewing its past reformation.

The director explained at the interview of December 27, 1994 on the future member of personnel which would be 800 persons approximately in 1994.

**(2) Number of personnel at the time of consolidation**

It will be decided by the year of the amalgamation to be materialized.

1) Administrative staff

The staff number for administration is included in all the necessary number of the personnel figured out from the hardware planning side at 31% - 32% approximately of the total number.

2) Number of technical personnel

Since it is considered that all the administration staff members of PDAM would cover the tasks for the wastewater departments/divisions, the number of the technical staff planned pursuant to the schedule of construction and its management shall be transferred to PDAM as they are though some adjustment in number of personnel will be necessary.

3) The total number of personnel is shown below.



Year	1996	2000	2005	2010	2015
Director General	1	1	1	1	1
Vacuum truck	60	66	75	60	51
Treatment Plant	8	80	80	80	88
Pump Station	0	14	14	14	42
General Affairs Division	5	14	15	19	24
Accounting Division	5	18	19	25	31
Customers Service & Planning Division	5	18	19	25	31
O/M Division	5	14	15	19	24
Construction Division	0	20	21	28	35
Total	89	245	259	271	327

#### 4.6 Establishment of PDAL in Case (Alternative I)

PDAL (Wastewater Public Enterprise) will be considered as a legal status after BPAL on the premise that PDAL shall alone operate without consolidation into PDAM after being established.

##### (1) PDAL in 2015

Reference is made to the main report and Fig. 5.17 in it.

##### (2) Number of personnel

Total: 377 persons

##### (3) Comparison of personnel number (except on-site treatment)

1) (Denpasar case: 77 personnel/44,000 m<sup>3</sup>/day (except the personnel of wastewater treatment plant and pumping station/including administration staff)

Ujung Pandang case: 290,000 m<sup>3</sup>

Therefore,  $77 \times 290,000/44,000 = 508$  persons

2) Bandung case: 153 personnel/70,000 m<sup>3</sup>/day (except administration staff)

Ujung Pandang case: 290,000 m<sup>3</sup>

Therefore,  $153 \times 290,000/70,000 = 634$  persons

#### 4.7 PDAM with Wastewater Management Institution (Alternative II)

##### (1) Shortening of period until merging of BPAL with PDAM

Although a 4- or 5-year period is required for construction as a project period and 5 years will be considered necessary for BPAL, it is advisable to look for a way to shorten the time as far as possible toward the unification of BPAL and PDAM.

Either way had better be studied and materialized; shortening of a project-unit term or of BPAL period because it is planned in this Study for the M/P that BPAL shall be merged into PDAM of KMUP by the year 2015.

(2) Revision of Perda No. 6/1974

BPAL shall be consolidated into PDAM of KMUP based on a revision of the Perda No. 6/1974 for PDAM at the discretion of the Mayor of KMUP and the approval of the Governor of South Sulawesi.

(3) PDAM with wastewater management in 2005.

In the premise that BPAL shall be set up as early as possible by the year 2005 and merged into PDAM by the year 2015 as planned in the M/P, it could scarcely be convinced that PDAM with wastewater management would certainly exist in KMUP. That is however, a probability should it be realized that the project unit would be formed in 1996, BPAL be set up in 2000 or few years later than 2000 and/or the period of BPAL (and experimental and a strengthening periods) be shorten.

Although a contradiction might be brought about between the elucidation of the amalgamation of BPAL with PDAM and the explanation here depending on a transition of the durations of both the said new units; the project unit and BPAL, the organization chart is shown as illustrated in Fig. 5.16 of the main report.

- 1) Number of personnel  
Total : 1,319 persons
- 2) Organizational structure  
Fig. 4.4 shall be referred to in the main report.

(4) PDAM with wastewater management in 2015

- 1) Number of personnel  
Total : 1,910 persons
- 2) Adjustment in number of personnel

Although a few number of personnel would be increased with the amalgamation, the personnel except those of the wastewater technical division could largely be reduced because of overlapping with those of PDAM. Even in the technical division, reduction in number of personnel can be expected.

3) **Number of personnel of PDAM in 2015**

The number of personnel of PDAM is assumed to be 1,910 persons in 2015 based on:

- a. Increased number of personnel of PDAM in the past 9 years
- b. Assumption by the director of PDAM about the number of personnel in 1999
- c. Mitigation in increase of personnel by introduction of computerized systems according to the director
- d. Number of personnel required for wastewater management particularly on the technical side
- e. Adjustment of personnel concerning those in overlapped domains
- f. Proportion of the number of personnel among the fields of work in case of PDAM, Bandung.

4) **Organization chart of PDAM in 2015**

Fig. 5.18 in the main report shows the organization chart of PDAM of KMUP in 2015.

5. **Establishment of PD Kebersihan**

5.1 **Comprehension of the Present Situation**

(1) **Institution of the solid waste management**

- 1) Its legal status at present is Dinas under the control of the Mayor.

As for the legal status, the present institution is Dinas under the control of the Mayor as one of the agencies/institutions in the functional group within the organizational structure of KMUP under the umbrella of the minister of Home Affairs as in the nation-wide legal position. In light of the trend in Indonesia, it is envisaged that Dinas should be reformed into PD (Perusahaan Daerah/Regional

Enterprise) as a self-sustainable institution in the scheme of decentralization concept.

2) Activities of Dinas Kebersihan

Dinas Kebersihan exerts effort in collection and transport of solid waste, street sweeping, ditch cleaning and night-soil desludging. However the Study shows that waste collection service coverage rate still remains about 57%. Thus some measures for amelioration of its activities have to be taken up for increasing efficiency and effectiveness in administration and operation.

3) Related authorities and organization

Authority	Responsibility
a. Dinas Kebersihan	a. Solid waste collection of domestic and commercial waste b. Solid waste disposal c. Street sweeping and grass cutting d. Ditch cleansing (e. Night soil collection and disposal)
b. Dinas P.U	a. Maintenance of collection vehicle
c. Kelurahan office	a. Fee collection
d. LKMD	a. Primary handcart collection

(2) Factors to be considered

- 1) Proposed area : The concept of the MINASAMAUPA shall be emphasized.
- 2) Population growth : 1,520 and 2,200 thousand in the years 2005 and 2015 respectively.
- 3) Comparison with other cities : It is now Bandung in Indonesia that can be compared in population to KMUP as of 2015.

(3) Regulation

- 1) Reference to be made to :
  - a. Chapter 2 EXISTING CONDITION, 2.42 Regulations

b. Chapter 6 MASTER PLAN FOR SOLID WASTE MANAGEMENT, 6.8.1 (2) Examination legal aspects

- 2) Regulation of the Minister of Home Affairs No. 6/1975 concerning Inter-Municipal Cooperation

**5.2 Modified/improved Dinas Kebersihan (Alternative I)**

- (1) Study on the decree No. 80/1994

Institutional alternatives like a modified/improved Dinas Kebersihan will be proposed after a further study is made on the Decree of Ministry of Home Affairs No. 80/1994, both the potentials of efficient streamlining and/or rationalization of the existing Dinas Kebersihan through further discussions the Team members in charge of solid waste and those of practical introduction even in part, of private sectors in the context of the foreseeable social and economic conditions of KMUP.

- (2) Improvement points of the existing Dinas Kebersihan

Refer to the main report (Chapter 6.8.2-2)).

**5.3 Legal Status of an Institution**

- (1) PD

No option can be found for the "should be" organization of Kebersihan toward 2015 except for PD Kebersihan, since a reformation from Dinas to PD has been a nation-wide trend in Indonesia.

The legal status of the present Dinas Kebersihan will eventually convert to PD Kebersihan as early as possible in time for the establishment by 2005. It is better to separate the night-soil desludging sector from the present Dinas Kebersihan or PD Kebersihan to a newly established wastewater institution for night soil desludging when the management direction of BPAL is decided by 2000. Then PD Kebersihan will engage in the activities solely for solid waste and carry out its duties full well.

Dinas Kebersihan will convert to PD Kebersihan by 2005. The work of septage desludging will be transferred to BPAL when it is set up, from Dinas or PD Kebersihan.

A new Pedra shall be issued and promulgated for the change of the duty from PD or Dinas Kebersihan to PDAL or PAM through the necessary legal procedures.

**(2) Intent of KMUP**

It testifies the clear intention of KMUP of establishing PD Kebersihan possibly soon that KMUP has already prepared the draft of Pedra in February, 1994.

**5.4 Selection of Technical Alternatives**

Alternative 1 shall be selected out of 1 to 6.

**5.5 Objective Items for the Feasibility Study**

The objective components read as below.

- (1) Expansion of collection serve**
- (2) Improvement of street sweeping and ditch cleaning**
- (3) Expansion of Tamangapa disposal site**
- (4) Construction of Desa Samata disposal site in Gowa Regency**
- (5) Construction of branch office**

The study shall be carried out mainly considering a tariff rate community, participation and so forth.

**5.6 Establishment of PD Kebersihan by 2005**

- (1) Basic condition : Technical Alternative 1 and Institutional Alternative II are the basic scheme.**
  - 1) One head office and four branches shall be established.**
  - 2) The number of the branched includes an office of joint operation with Dinas Kebersihan, Gowa for the Gowa TPA to start by 2005, if possible in 2002.**
  - 3) Workshop is located at Tamangapa.**
- (2) Legal procedures**

A new Perda shall be issued by the Mayor of KMUP and promulgated by the Governor of South Sulawesi for the change of the legal status from Dinas to PD, based on the regional/local autonomy.

(3) Transitional transaction

1) Plan for the establishment of the PD.

A few years are considered required for setting up a plan to materialize the establishment of PD by the year 2005, even if a study on the plan commences in 1996.

2) Necessary departments/branches for PD.

PD. Kebersihan shall be managed in principle on a self-accounting basis, which is far different from the managerial method of Dinas.

The difference by nature between the two requires strengthening of administrative fields in addition to that of technical ones to provide beneficiaries with up-graded services.

New departments and branches necessary for PD shall be planned and prepared, utilizing the present duties of affairs and/or sections as broadly as possible, however when this seems to be difficult it is then advisable to set up a new organization structure a fresh regardless of the present structure of Dinas.

3) Preparation for establishment of PD.

Although the Perda has already been drafted as aforementioned, a few years are deemed to usually be necessary as a preparatory and experimental period for the establishment.

4) Comparison of organization and required personnel between Dinas and PD.

In order to grasp the difference in organization and number of personnel, the present structure "Organization Chart of Dinas Kebersihan" and the number (836 persons) of "Personnel of Dinas Kebersihan", shall be compared to the organizational structure and number (2,099 persons) of personnel required in 2015 for PD, when

it is set up, for PD referring to the structure of PD Kebersihan Bandung which is now operating well as PD.

**(4) Organizational structure and number of personnel**

The organizational and its number of personnel are illustrated as shown in the main report in 2005 (1,508 persons in total).

- 1) Head of a branch is included in the number of the personnel in the branch, while head of a department is added to the number of the personnel in the department.
- 2) As for the TPA, 27 persons of the branch 2 (up to 2005) and 37 persons of the branch 5 (after 2005) are listed up in parallel, because it is difficult now to decide when the TPA of Gowa shall start, though 2002 is desirable.
- 3) No personnel for septage collection are included for the reason that they are scheduled to move to BPAL with vehicles when it is set up.

**5.7 Gowa TPA Joint Operation**

**(1) Outline of construction of Samata TPA in Gowa**

The plan is mapped out on the technical side in this Study concerning the TPA as a whole.

1) Area and capacity	Area	Capacity
a-a Phase I	65 ha	3,540,000 ton
a-b Phase II	56 ha	3,190,000 ton
a-c Phase III	47 ha	2,580,000 ton
Total	168 ha	9,310,000 ton

- 2) Landfill method      Sanitary landfill
- 3) Period to be disposed of 2002 onward (Around 20 years)
- 4) Waste to be disposed of :

Domestic waste, commercial waste, street waste, ditch waste from KMUP and,

Gowa Non-hazardous industry waste from KMUP and Gowa



- 5) Disposal charge (to be discussed between KMUP and Gowa)
    - Basic charge : Rp. 15,000/ton waste
  - 6) Construction cost : Rp. 15.9 billion for Phase I
    - Land acquisition cost : Rp. 3.3 billion for Phase I (Rp. 5,000/sq.m)
  - 7) Period of construction phase I : 2000-2001
  - 8) Land use after disposal : Recreation and sports park
- (2) Inter-municipal cooperation based on regulation of the minister of home affairs number 6 of 1975.
- 1) Article 1, b : Head of Region is the Head of Provincial Area (Governor) and the Head of Municipal Area (Mayor)
  - 2) Article 3 : The inter-municipal cooperation may cover all governmental affairs that included as internal affairs of Region as well as assisting duty affairs.
  - 3) Article 4, (2) : The Joint Regulation as meant in this regulation may cover those stipulations concerning the following matters :
    - a. Scope of sectors being cooperated
    - b. Organization and personnel composition
    - c. Technical procedure and determination on the implementation of cooperation
    - d. Financing
    - e. Duration
    - f. Another stipulation that considered to be necessary.
  - 4) Article 4, (3) : The Joint Regulation to be signed by respective Head of Region after obtaining an approval from the Regional House of Representatives concerned.
  - 5) Article 4, (4) : The Joint Regulation to be effective after getting legalization of the Minister of Home Affairs for Provincial area and of the Governor for Municipal/Regencial area.

- 6) Article 5 : When the cooperation is in the field of development, so in order to speed up its implementation, it can be formed a joint project, where its determination is included in the Joint Regulation...

(3) Land in Gowa

1) Instruction of Mr. Bupati

Letter of instruction of Kecamatan Somba Opu to Mr. Lurah of the Kelurahan Samata (June 26, 1995) in compliance with the direct instruction of Mr. Bupati of Gowa (June 23, 1995) on the subject : Pacification of JICA's Planned Location.

The land of 73.76 ha is secured for Phase I except a matter of price in relation with the land owners who are written on the "Table of Owners" names listed up as Deliverance for the Land planned in the Location of the JICA Project at Kelurahan Samata" (242 owners) attached to the letter of instruction.

(Only for reference:

1. Population of Sungguminasa : 66,139 persons in 1995
2. Personnel of Dinas Kebersihan Gowa : 72 persons in total consisting of 22 permanent & 50 temporary employees.

2) Land right

The matter of land right shall be settled by and between Kabupaten (Regency) Gowa and KMUP under the dispensation of the South Sulawesi Governor.

The Study Team is neither in a position to, nor entitled to put its nose into the matter of land right nor capable of studying concretely legitimate procedures based on the conclusion of discussions to be held between the two governmental authorities from now on but entails knowing that the land will be applied to the matter considering that the land will be used for Gowa after the completion of land filling.

Laws/regulations such as the Law No. 5/1990, the Governmental regulation No. 10/1961, Presidential Decree No. 55/1993 etc. stipulate various land rights such as property right, exertion-use right, construction-use right, use right, renting right for construction etc.

#### (4) Joint operation with Dinas Kebersihan of Gowa

Since no officially concrete discussion about the joint-operation of the Gowa TPA has ever held by and between Dinas Kebersihan of KMUP and that of Gowa and/or the authorities concerned of Gowa, no mention can be made here yet.

Presumably, it is apparent however that a body of the joint-operation should be established before the operation starts and 37 persons would be provided as undermentioned to the operation from Dinas or PD Kebersihan of KMUP and presumably few from Gowa.

Personnel at Gowa TPA	Manager	1 person
	Administrative staff	4 persons
	Engineer	2 persons
	Weigh bridge staff	3 persons
	Heavy equipment operator	10 persons
	Driver	6 persons
	Working staff	8 persons
Total (in 2005)		34 persons

#### (5) Commencement time of operation

The year 2002 will be desirable as a starting year of the operation in light of a life extension of the present TPA of KMUP at Taniangapa. However, the time of establishment of PD should be taken into account as an important element.

### 5.8 PD. Kebersihan of KMUP in 2005

#### (1) In the scheme of the M/P

1) Reference is largely made to PD Kebersihan of Bandung and shown there on the table in this report because:

- a) The population of KMUP predicted for 2015 is very similar to the present population of Bandung.
- b) The legal status of Kebersihan in Bandung is PD while that in Jakarta is still Dinas, in addition to the difference in population between KMUP as in 2015 and Jakarta as of today.

c) The staff number of PD Kebersihan of Bandung is now 1,884 persons who are more or less similar to the number of personnel estimated for PD Kebersihan to KMUP in 2015.

2) Number of personnel in 2015

Refer to the necessary number of personnel for PD Kebersihan in 2015 as compiled in this main report. The number of 2,099 is the personnel necessary for PD Kebersihan in 2015.

(2) Organization structure

Refer to the main report.

(3) Required personnel : 1,508 persons in total (in 2005).

Refer to the main report.

5.9 PD. Kebersihan, KMUP in 2015

(1) Comparison with the other city

Since the respective local conditions and the types of the institutions are different one another and from those of KMUP, it had better be deemed to pick out the case of Bandung in 1994 which is similar to the case of KMUP in 2015.

That is, the type is PD and the population is similar each other in Bandung now and in KMUP in the year 2015.

Comparison between KMUP and Bandung

Name of City	Year	Population (Unit : Thousand)	Mode of Institution	Staff Number of Institution	Service Ratio %
KMUP	2015	2,200	PD (proposed)	2,099 persons	95
Bandung	1994	2,058	PD	1,884 persons	88

$$(2,200 \times 1,884) + 2,058 = 2,014$$

$$(2,014 \times 95) + 88 = 2,173 \text{ persons}$$

The M/P shows 2,099 as the maximal number of personnel which is less than 2,173.

(2) Required personnel

Reference is made to the main report for the detailed number of personnel in the respective fields.

- 1) Adoption of the case of PD Kebersihan in Bandung because of the similarity
- 2) PD Kebersihan KMUP : Total 2,099 (Personnel 1,670 & Primary Collection 429)
  - a. President/Director rooms (6), Council (5), Auditors (19) and Development/Research (9).
  - b. General and financial division (245)
  - c. Technical and operation division (1,386)
    - Branch 1 (Bontoala ) (222) :
    - Branch 2 (Tamangapa) (184) :
    - Branch 3 (Panakkukang) (630) :
    - Branch 4 (Biringkanaya) (307) :
    - Branch 5 (Gowa) (43) :
  - d. Primary waste collection (at Kelurahan level) (429)

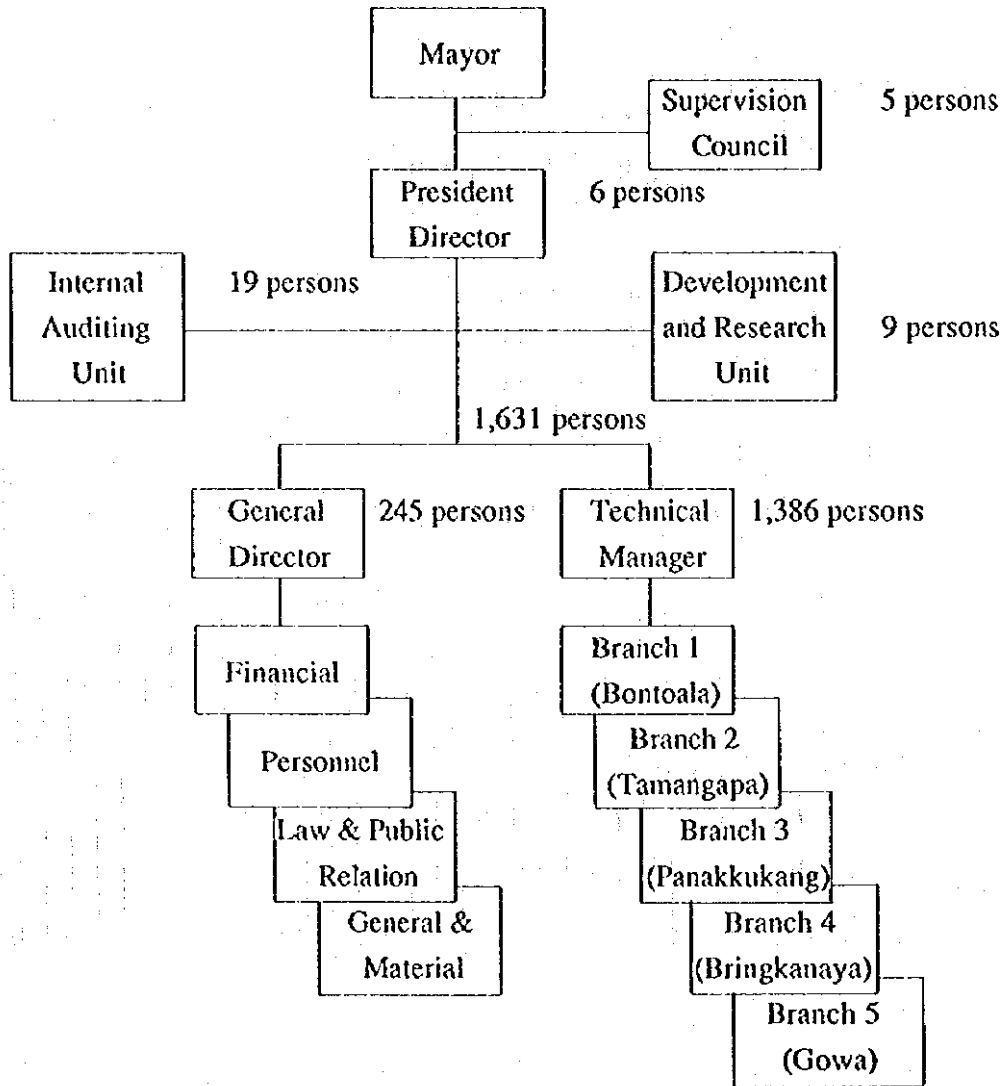
Remarks : Redeployment & increase/decrease in number subject to the necessity according to changes of situations and to progress of contract-out to private sector

Should it be necessary, rationalization and/or streamlining shall be implemented in the frame/organization of PD Kebersihan pursuant to changes of conditions as mentioned above.

### (3) Organizational structure

The main report shows the structure of PD Kebersihan in 2015, which will engage in the activities solely for solid waste and carry out its duties full well.

Total : 2,099 persons  
 Personnel : 1,670 persons  
 Primary Collection : 429 persons



## 5.10. Alternative Study on Institutional Plan for Solid Waste Management

### 5.10.1 The SWM

Since the survey in Bandung, Denpasar, Surabaya and Cirebon has been already reported in the Study, the matters merely on Padang and Medan as well as possibly Jakarta will concisely be elucidated here as follows.

#### (1) Padang

##### 1) General description on Padang reads as follows

- (a) Population: 703,893 persons in 1994 (growth rate : 2.76 %/year)
- (b) Size of area: 694.96 km<sup>2</sup>
- (c) Number of Kecamatan: 11 districts
- (d) Number of Kelurahan/Desa: 93 sub-districts in the 11 Kecamatan

##### 2) Dinas Kebersihan

###### (a) Number of personnel : 400 persons in total approximately

(Break-down) Waste collection	113 persons
Transport	115 persons with 30 vehicles
Wastewater	10 persons
Cemetery	17 persons
Staff	44 persons

###### (b) Volume of waste : 1,857 m<sup>3</sup> (2.65 lt./person a day)

###### (c) Waste collection ratio at 102 Kelurahan in the central part of the city by Dinas Kebersihan : 85.35% for 61% of the total population and (balance 14.65% not collected by Dinas Kebersihan) the balance is collected by community and private sectors, even if not always fully.

###### (d) Waste collection at 91 Kelurahan/Desa by communities for themselves : 39% to the total population

###### (e) Retribution (i) 65% of Fee collection by the same bill as

that of PDAM (one bill) at different tariffs of which collection ratio is 100%

- (ii) 35% of Fee collected by door-to door fee collection of which collection ratio is 80% and it is shared at 50 /50 % by Dinas Kebersihan and LKMD.

(f) Private sectors and community

Vehicles and equipment/facilities of these sectors are prepared under the guidance of Dinas Kebersihan as one of the system guidance and bought by these sectors.

- a. CV Golongan Olahraga (Sports center in the form of a limited liability company set up in 1994) : 40 persons for waste collection based on the contract by and between Major and head of the GOR.

This is only one company for the PPS in the SWM in Padang. However it is reported that potentials of the PPS in the SWM are considered still existing in Padang.

b. Community (by LKMD)

- (i) Kelurahan Tanah Konsi : 10 persons approximately
  - (ii) Kelurahan Surogadang serta Parupuk : 10 persons approximately
  - (iii) Kelurahan Tabing : 10 persons approximately
- LKMD of these respective Kelurahan is working for waste collection
- (iv) TPA (Final disposal site) : 30 ha commencing in operation with 1986 and being estimated to use 30 years long from now on.
  - (v) Night soil collection
    - Number of persons in charge : About 30 persons in total
    - Vehicles : 3 units (each capacity : 2.5 m<sup>3</sup>) in operation by 3 teams in the form of Contract-out to the 3 teams
    - Volume generated : 87.5 m<sup>3</sup>/day in total  
(0.125 lt./person) x (about 700,000 persons) = 87.5 m<sup>3</sup>
    - Collection ratio : 40% approximately (collection being made only



in the central parts of Padang

(g) Adipura for Padang during 1986 to 1994

- a. 5 Adipura trophies
- b. 3 gold Adipura

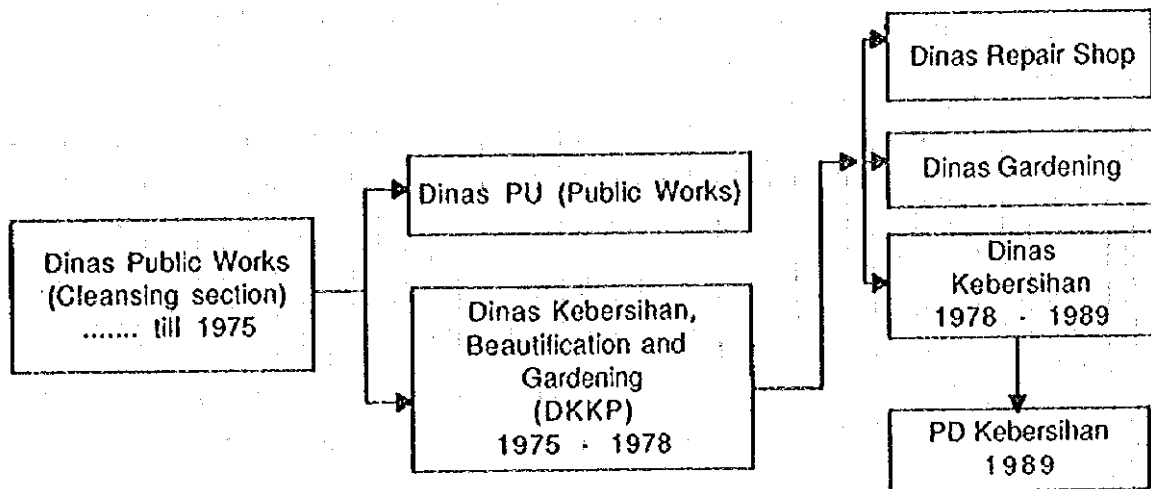
(2) Medan

1) General description on Medan reads as follows

- (a) Population: 1,925,383 persons in 1995 (growth rate: 2.38%/year) it is reported that about a day time population become more with about 400,000 persons from the vicinity and other towns.
- (b) Size of area: 26,510 ha.
- (c) Number of kecamatan: 21 districts
- (d) Number of kelurahan: 151 sub-districts in 21 kecamatan

2) PD Kebersihan

(a) History of PD Kebersihan



(b) Number of personnel :

	(April 1, 1989)	(August 31, 1995)
Government officials	217	116 persons
Monthly-based personnel	-	126 persons
Daily-based workers	2,027	2,227 persons
<b>Total</b>	<b>2,244</b>	<b>2,469 persons</b>

(c) Amount of waste : 4,439 m<sup>3</sup>/day approximately

(d) Waste collection ratio : 74.5% at present (reported at the interview)

a. Volume transported to TPA : 2,273 m<sup>3</sup>/day (about 51%)

b. Recycling by scavenger : estimated to be 20 %

---

(From the document, 1995) Total : about 71 %

c. Ratio between :

(i) Public/general 81%

(ii) Market 19 %

(e) Type of waste collection service :

a. Direct service by PD Kebersihan 117 Kelurahan

b. Indirect service - LKMD 7 Kelurahan

- Scavenger corporate 27 Kelurahan

---

Total 151 Kelurahan

(f) The PPS and community participation

As described above, the indirect waste collection means the PPS and community participation in the SWM.

a. LKMD - a joint work with PD kebersihan which delivers necessary tools and equipment to and dispatch some staff to LKMD, imposing a target of retribution according the tariff rates.

b. Cooperative of scavengers - This is a kind of the PPS in the SWM. It uses own persons and tools/equipment to bring the collected waste to TPS (temporary places for the collected waste) and is in a position to manage fee collection by itself according to the same tariff rates, aiming at attainment of the target set up by PD Kebersihan.

The contract is concluded for the work by and between the competent heads of PD Kebersihan and the cooperative as far as the contracted period is shorter than one year unless otherwise the contract necessitates Mayor's approval.

(g) Street sweeping, drain cleansing and grass cutting

PD Kebersihan is at work for these domains by contract with the Mayor and enjoys receiving Rp. 1.2 M from the municipality.

(h) Compost-making

PT. JAYA TANI produces 100 ton/month of compost with around 60 persons based on the contract with PD Kebersihan which obtains 5% of the company's net profit.

(i) Adipura : Medan has obtained three times Adipura certificate

(j) Comparison among the three cities

The director of PD Kebersihan was kind enough to tabulate a comparison on a white board as described below and to make expatiation on it.

Name of city	KMUP	Bandung	Medan
Legal type	Dinas	PD	PD
Major channal of waste collection	RT/RW Dinas: TPS TPA	RT/RW PD: TPS TPA	PD: Door to door TPA
Retribution (Fee collection)	PLN Tax Department	PLN	PD: Door to door PD
Number of Staff	836 Persons	1,930 persons (± 1,000 persons from RT/RW  Total : 2,930 persons approximately	2,469 persons RT/RW : 0 Contract : ± 25 persons  Total : 2,494 persons approximately
Population	1.06 million	2.1 million	2.0 million
Waste collection ratio	57% (70% reported now by Dinas)	88%	74.5%

(k) Bestari

Bestari is well known to the people in Medan as a motto/slogan to create the most favorable - living environment there in the same manner as Teduh Bersinar for the people in KMUP. Although BESTARI means "expert/skilled/bright/clever "in a dictionary, "Bijaksana (wisdom/policy)" is considered more suitable meaning from an aspect of semantics.

BESTARI is acronyms of the meaningfully splendid words reading as follows.

**B**ERSIH ..... Clean  
**S**EHAT ..... Healthy  
**T**ERTIB ..... Order

**AMAN** ..... Safe  
**RAPIH** ..... Neat  
**INDAH** ..... Beautiful

(3) Jakarta

Dinas Kebersihan DKI Jakarta was kind sufficiently to send the following fax to the office in Bappeda Tk. II, KMUP at the request of the Study Team.

A facet of records in Dinas Kebersihan is shown in the following Table.

A Facet of Records in Dinas Kebersihan

Classification		Total	Center	East	West	South	North	Bekasi
Population (thousand)		8,259.6	1,072.1	2,075.7	1,831.2	1,910.5	1,370.1	-
Number of persons in the Dinas DKI (Persons)	Street Sweeping	1,053	353	230	183	168	89	30
	Waste Collection	1,508	432	263	188	303	214	108
	Collection of Night Soil	413	41	33	37	39	36	227
	TPA	65	-	-	-	-	-	65
	Total	3,039	826	526	408	510	339	430
Activity sphere of Private sectors (persons)	Street Sweeping	2,299	588	374	593	384	360	-
	Waste Collection Collection of Night Soil	845	149	221	158	170	147	-
Nr. of Persons	Total	3,144	737	595	751	554	507	-
Nr. of firms	Total	17						-
Waste Collection ratio to population	Total (%)	84.66	?	?	?	?	?	?
Area (km <sup>2</sup> )	Total	650	47	185	125	143	150	108 ha

(4) Surabaya

Reference No. 2.2.12 is an abstract form the paper provided by Dr. John Silas on the Environment Management Seminar in Surabaya in January, 199.

The valuable information related to Mitra Pasukan Kuning (Yellow Force Partnership) in Surabaya is bestowed on the Study Team and herewith compiled.

Partnership) in Surabaya is bestowed on the Study Team and herewith compiled later.

(5) KMUP

A variety of expatiation about Dinas Kebersihan, KMUP is made in articles regarding it on many pages of the DF/R, the Sp/R, etc., from both hardware and software aspects.

As an additional description, its current situation reads as follows merely concerning the number of its staff members, method of fee collection in connection with the primary waste collection and the PPS in the past.

1) Number of personnel

Total : 820 persons

The break-down of staff number is shown in the following table.

Staff Number (by kind of work & way of employment)

Domain	Administration (Total : 125 persons)				Operation (Total : 695 persons)			Total
Working fields	General Affairs	Workshop	Programming	Retribution	Waste Collection including persons nightsoil	26 for Street Sweeping	Ditch Cleaning	
Official staff	28	6	12	24	56	23	25	174
Contracted employee	2	18	9	26	322	172	97	646
Total	30	24	21	50	378	195	122	820

2) Method of fee collection

The way of fee collection from the population was changed from the way through the LKMD (entitled to keep 40% of the collected fee for the primary waste collection) to that by means of the fee collection for electricity in April, 1994.

Thus, the collected fee for the waste collection has been remitted to the municipality of KMUP and has been a part of the Municipal revenue. Therefore the LKMD remains unconnected with the retribution for the primary waste collection from the people.

not always going well at places because the hand-cart operation still under the control of the LKMD entails some many which is paid from a household to a hand-cart worker through LKMD according to the amount decided by LKMD. Anywise, the community participation is materialized in part of the SWM.

#### 5.10.2 Potential of Foreign Enterprise Involvement

In compliance with the suggestion of Cipta Karya, PU in Jakarta on October 3, 1995, potential of foreign enterprise involvement (FEI) shall be looked into for the SWM in KMUP to decrease the number of personnel of PD Kebersihan in the M/P (Alternative II).

##### (1) Examples of in the SWW in Indonesia

###### 1) Incineration plant in Surabaya

The incineration plant in Surabaya can be taken up as an example of foreign enterprise involvement in the SWM in Indonesia.

Since no detailed survey on the incineration plan was needed when the field survey was conducted in Surabaya on June 27, 1994, the information in detail has not been obtained on materials from an angle of the FEI at the time of interview.

Merely the under mentioned are informed of regarding the physical domains of the said plant.

###### a. Physical aspects

- Machinery plant : French make.
- Capacity : 200 ton/day based on weight of the waste brought in.  
Thus, the incinerated volume of the solid amounts to 70,000 ton a year approximately.
- The time of commencement : 1990
- Operation hours : 24 hours by 3 shifts
- Number of personnel : 100 persons approximately
- Site area : about 1.5 ha

###### b. Form of the FEI

It is not known how the French company has been involved in the incineration plant and/or its operation, what a mode was applied to the enterprise involvement out of the forms such as a service contract, management contract,

lease contract, concession contract, BOT and BOO as explained before here and expatiated in Reference No. 2.2.10 herewith compiled later, etc.

2) The SWM projects by private participation

It is sincerely asked to look into "The profile of Solid Waste Management Project by Private Participation" in Reference No. 2.2.10 on which tables no description appears in the columns of "Form of Cooperation". Therefore it is difficult to grasp a form of private sectors involvement in the SWM.

3) Field survey on the FEI

Since the said suggestion was made on October 3, 1995, the field survey has been conducted in Padang and Medan.

Unfortunately neither Dinas Kebersihan, Padang nor PD Kebersihan, Medan has ever experienced any discussion with foreign enterprises about their involvement in the SWM respectively.

(2) Cases of the FEI in PDAM

1) Case of PD PDAM JAYA, DKI Jakarta

In obedient to the government of Indonesia, PD PAM JAYA has succeeded in materialization of both the PPS and the FEI in its activities on October 6, 1995 by signing the MOU with an English firm; Themes Water for the activities in the eastern areas of Jakarta, Bekasi and Cikarang and a French company; Lyonnaise des Eaux-Dumex for them in the western areas of Jakarta, Tangerang and Serang together with the giant groups of private companies, respectively.

Reportedly it was also agreed on by both the respective parties that the F/S would be culminated by the beginning of February, 1996.

(a) Outline of the PPS and FEI

Reference 2.2.13 herewith compiled is self-explanatory, being titled "Summary of Latest Status of Cooperation with Private Sector "(Jakarta, October 01, 1995).

(b) Result of Interview

The interview was made on November 14, 1995 with the competent representative of PD PAM JAYA on how to set up a consortium with the English and the French

corporations respectively.

a. Giant local company

It is explained that the introduction of such a giant local company as Salim Group, Lippo Bank Group, etc., could decide the possibility of the FEI.

b. Local autonomy

It is possible to establish any joint-venture company with foreign enterprises based on the laws/regulations of the Minister of Home Affairs regarding the autonomy of local government unless otherwise the establishment infringes the other law/regulations in force.

The consortiums have also been formed pursuant to the Perda promulgated by the Governor of DKI Jakarta after and through the procedures of the parliament of DKI Jakarta.

c. Advice

The interviewer bestows such a piece of advice on the Study Team as what it will not be possible to set up a joint-venture business with a foreign company solely for the SWM because any profit is not expected only with the work for solid waste.

It is advised to plan one set of water supply, waste water and solid waste for making the set of the institutions attractive to private investors, whom merely the work of solid waste does not attract any more.

2) PDAM, Medan

Interview was conducted with the General Director of PDAM Tirtanadi, Medan on both the subjects of the PPS and the FEI in the activities of PDAM, on November 21, 1995.

(a) PDAM Tirtanadi

a. The PDAM is providing 62% of the population with clean water through the pipe networks of water supply. The remaining people are utilizing wells/springs for their clean water.

b. 770 personnel approximately are now working with the PDAM.

c. Sewerage networks for wastewater will be completed by the end of 1995, in part of Medan, though only 20,000 households will enjoy the facility and connection pipes are not installed yet to the households. The wastewater



treatment plant (grant from P.I.P Cipta Karya & made in the Netherlands) is still now under construction at the place of around 10 ha., etc.

(b) P.T Dominion Bridge Tirtanadi (DBT)

a. Dominion Bridge Co., Ltd., Montreal, Canada

This foreign enterprise (DBC) reached the agreement with the PDAM on the establishment of a joint-venture company in June, 1995.

b. Ratio of shareholders

The PDAM : 10%

Local firms : 15% (Names are not identified yet, though.)

DBC : 75%

c. Works of DBT

The joint-venture company shall be responsible for the installation, the O/M of facilities to produce clean water and for the sales of the produced-clean water as a whole to the PDAM Tirtanadi which shall distribute/sell the water to the population as has been supplying.

d. Number of DBT personnel

The number is not totalled yet

e. Perda of the Governor

It is explained that the PDAM belongs not to the municipality of Medan but to the government of North Sumatera Province and therefore the Perda has been issued and promulgated by the Governor.

3) PDAM, Padang

(a) Approach from a foreign enterprise : Puncak Niaga (M) Sdn Bhd, Kuala Lumpur visited in November, 1995 for discussions with PDAM on 6 month survey about water supply.

(b) Service of water supply by pipe : 54% in population or 838 ltr/sec. a day at 6 water treatment plants with around 260 persons including honorarium workers.

### 5.10.3 Others

#### (1) Wastewater (Padang)

- 1) The M/P was conducted in December, 1993 Labmeyer International GMBH, Frankfurt in association with PT. DACREA, Jakarta regarding an off-site system.
- 2) The F/S was carried out by KFW (German firm) in December, 1994 and resulted in "not feasible" because the O/M costs were so high.
- 3) Small scale off-site system is now being planned in the form of German grant aid but not implemented yet.

#### (2) Cemetery (Padang)

2 places started in 1970 by Contract-out to 2 family (13 persons in total) which has been valid and is extendible by each 5 year.

Table 2.2.1

## Administrative Community in DATI II

Classifi- cation	Level		Forum
Govern- mental Adminis- tration (formal Organi- sation)	<u>Municipality (TK. II)</u> (Mayor)	<u>Regency (TK. II)</u> (Bupati)	Rakorbang Tk. II
	<u>Kecamatan/District</u> (Camat/Head of District)	<u>Kecamatan/District</u> (Camat/Head of District)	Muker
	<u>Kelurahan/Sub-District</u> (Lurah/Head of Sub-District)	<u>Desa/Village</u> (Head of Village)	Musbang
	LKMD /as functional group Community-Resident Institution (Chief)	LKMD /as functional group Community-Resident Institution (Chief)	
	<u>Lingkungan/Area</u> (Head)	Dusun (Head)	
	Rukun Kampung/Village Neighborhood Unit (Head)		
Community (Non formal or- ganization)	RW/Neighborhood Citizens Association (Chief)	RW/Neighborhood Citizens Association (Chief)	
	RT/Lowest Neighborhood Association (Chief)	RT/Lowest Neighborhood Association (Chief)	

Source : JICA Study Team

Table 2.2.2

PERSONNEL OF DINAS KEBERSIHAN  
UJUNG PANDANG

Sub-Division/Section	Permanent Government Employees	Contract	Total
Sub-Division of Administration	27	1	28
Operational section			
Transport Sub-Section	57	324	381
Ditch Sub-Section	27	96	123
Sweeping Sub-Section	22	172	194
	106	592	698
Program Section	13	5	18
Retribution Section	47	32	79
Logistic Section	8	4	12
<b>Total</b>	<b>201</b>	<b>634</b>	<b>836</b>

Ujung Pandang, 2 Mei 1994

**Table 2.2.3**

**PERSONNEL OF OPERATIONAL SECTION, DINAS KEBERSIHAN**

Sub-Section/Position	Permanent Government Employees	Contract	Total
<b>I. TRANSPORTATION</b>			
Chief of Section/Sub Section	2	0	2
Supervisor	11	4	15
Driver	35	78	113
Worker	7	238	245
Staff	2	2	4
Temporary Assignment	0	2	2
	57	324	381
<b>II. DITCH</b>			
Chief of Sub Section	1	0	1
Supervisor	9	0	9
Worker	17	96	113
Staff	0	0	0
	27	96	123
<b>III. SWEEPING</b>			
Chief of Sub Section	1	0	1
Supervisor	7	12	19
Workers	14	157	171
Staff	0	3	3
	22	172	194
<b>Total</b>	<b>106</b>	<b>592</b>	<b>698</b>

Ujung Pandang, 2 Mei 1994

**Table 2.2.4**

**Agencies/Institutions participating in Solid Waste Management**

Function	Agencies	Kind Of Activities
a. Planning	<ul style="list-style-type: none"> <li>* Municipal Bappeda</li> <li>* Directorate for Environmental Sanitation (DES)</li> <li>* Provincial Population &amp; Environment Bureau</li> <li>* High Educational Institution</li> </ul>	<ul style="list-style-type: none"> <li>- Making Program for AP &amp; PJM (Multi Year Investment Programme (for IUIDP))</li> <li>- Building on Environmental Sanitary Waste Management</li> <li>- Technical Guidance on Environmental Management</li> <li>- Suggestion and Consideration for Completion of Environmental Management System</li> </ul>
b. Operation	<ul style="list-style-type: none"> <li>* Municipal Public Work Department of Ujung Pandang</li> <li>* Health Institute</li> <li>* Local Technical Implementation Unit on Marke/Terminal</li> <li>* Public Corporation of Harbour IV Ujung Pandang</li> <li>* Lurah/Camat</li> <li>* PKK (Family Welfare Education) Group</li> </ul>	<ul style="list-style-type: none"> <li>- Canal Drainage Maintenance</li> <li>- Spraying on Final Waste Disposal/ Temporary Waste Disposal sites</li> <li>- Waste collection/transportation from Market/Terminal to TPA (Final Waste Disposal)</li> <li>- Waste collection/transportation from Harbour to TPA (Final Waste Disposal)</li> <li>- (Waste) Collection &amp; Environmental Cleaning</li> <li>- Mass Work Assignment</li> </ul>
c. Supervision	<ul style="list-style-type: none"> <li>* Law Department</li> <li>* Health Institute</li> <li>* Living Space Department</li> <li>* Lurah/Camat</li> </ul>	<ul style="list-style-type: none"> <li>- Give a warning on violation of Local Regulation</li> <li>- Monitoring on Diseases Factor &amp; Waste Pollution</li> <li>- Controlling Negative impact of Waste Management</li> <li>- Reporting about waste pile-up in in their region</li> </ul>
d. Guidance/ Motivator of Community Participation	<ul style="list-style-type: none"> <li>* Municipal Information Dept. Office of Ujung Pandang</li> <li>* Public Relation Dept. of Cleaning Management</li> <li>* Health Institute</li> <li>* Public Health Center, Supporting Health Center PKK</li> <li>* LKMD (Village Community Residence Institution)</li> </ul>	<ul style="list-style-type: none"> <li>- Give guidance</li> <li>- Making public Govt. Policy and Community Participation</li> <li>- Guidance about healthy way of life</li> <li>- Guidance/motive Dasawisma and PKK Groups</li> <li>- Mass Motivation in Environmental Cleaning</li> </ul>

**Table 2.2.5**

Total Number of Employees of Ujung Pandang Water Supply Regional Enterprise  
for 5 years from the year 1985 to the year 1989  
(December 1989)

No.	Status Employee	Year					Remarks
		1985	1986	1987	1988	1989	
1	National Civil Employee	92	79	78	76	69	
2	Candidates for National Civil Employee	1	3	6	3	3	
3	Daily employee of local government	11	-	-	-	-	
4	Company's Employees	-	294	279	287	290	
5	Employee paid by honorarium	3	18	20	23	18	
6	Company's daily employee	298	11	19	12	14	
7	Project employee	-	-	-	-	13	
	Total	405	405	402	401	407	

Ujung Pandang, December 30, 1985

Regional Water Supply Company  
Head of Personnel Department

**Table 2.2.6**

**Personnel data of Water Supply Regional Enterprise of Ujung Pandang Municipality  
from year 1989 to the year 1993**

No.	Name	Year					Remarks
		1989	1990	1991	1992	1993	
1	National Civil Employee	57	61	60	66	48	3 directors not included
2	Candidates for national Civil Employee	2	4	4		1	
3	Company's employee	268	285	284	279	310	
4	Candidates for company's employee	21	3	20	35	1	
5	I K J P	27	21	16	30	55	
6	Employee paid by honorium	20	17	21	10	9	
	<b>Total</b>	<b>405</b>	<b>391</b>	<b>405</b>	<b>420</b>	<b>424</b>	

**Head of Personnel  
Water Supply Regional Company  
of Ujung Pandang**



**Table 2.2.7**

**Number of Kelurahan by Kecamatan in KMUP in 1993**

No.	Kecamatan (1)	Kelurahan (2)	RW (3)	RT (4)
1	Mariso	9	44	285
2	Mamajang	13	50	299
3	Tamalate	20	166	914
4	Makassar	14	57	466
5	Ujung Pandang	10	38	149
6	Wajo	8	46	195
7	Bontoala	12	56	251
8	Ujung Tanah	12	50	246
9	Tallo	15	65	437
10	Panakkukang	17	125	605
11	Biringkanaya	12	91	381
		142	788	4228

Source : Kantor Statistik Kotamadya Ujung Pandang

**Table 2.2.8****Present Conditions of Wastewater Treatment Plant in Major Indonesia Cities**

Name	Stage	Planned Population	Capacity	Year	Assistance Institution	m <sup>3</sup> /perday/capita
JAKARTA	Operational	170,000	28,000	1991	IBRD	0.16
SURABAYA	Concept				IBRD	
BANDUNG	Operation	570,000	70,000	1992	ADB	0.12
MEDAN	Construction	155,000	16,000		ADB	0.1
SEMARANG	Concept				IBRD	
PALEMBANG	Concept				ADB	
UJUNG PANDANG	Study				JICA	
SURAKARTA	Concept				IBRD	
YOGYAKARTA	Construction	11,000	15,500	1995	JICA	0.14
TANGGERANG	Operation	15,000	2,250	1990	DUTCH	0.15
BOGOR	Design				ADB	
CIREBON	Operation	34,000	3,000	1991	SWISS	0.09
DENPASAR		(129,377)	(43,990)		JICA	0.34

Source : JICA Expert, March 1994 & JICA Study Team

**Table 2.2.9**      Consultation Forum at Levels

Level	Consultation Forum
Province (Tk. I)	Rakorbang Tk. I
City (Tk.II)	Rakorbang Tk. II
Kecamatan	Diskusi UDKP (Unit Daerah Kerja Pembangunan)/Muker (Temu Karya)
Kelurahan	Musbang (Musyawarah Pembangunan)

**Remarks :**

BAPPEDA Tk. I and II manage the upper level of the bottom-up process while BANDES with the Camat, Lurah and LKMD manage the Kecamatan and Kelurahan level. NGOs play an extremely limited role.

Source : LIDAP, Ministry of Home Affairs

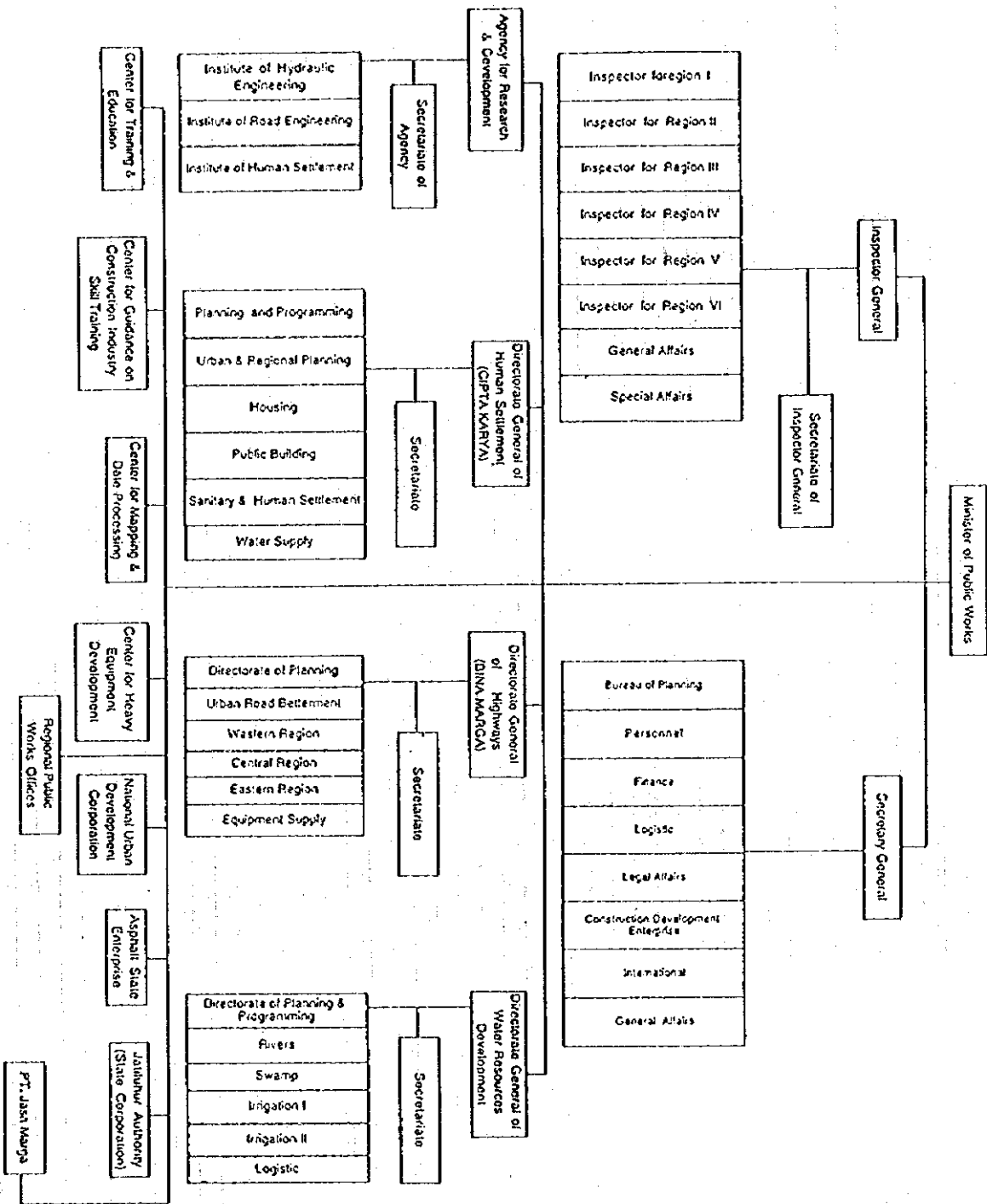


FIG. 2.2.1

Organization Chart of Ministry of Public Works

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

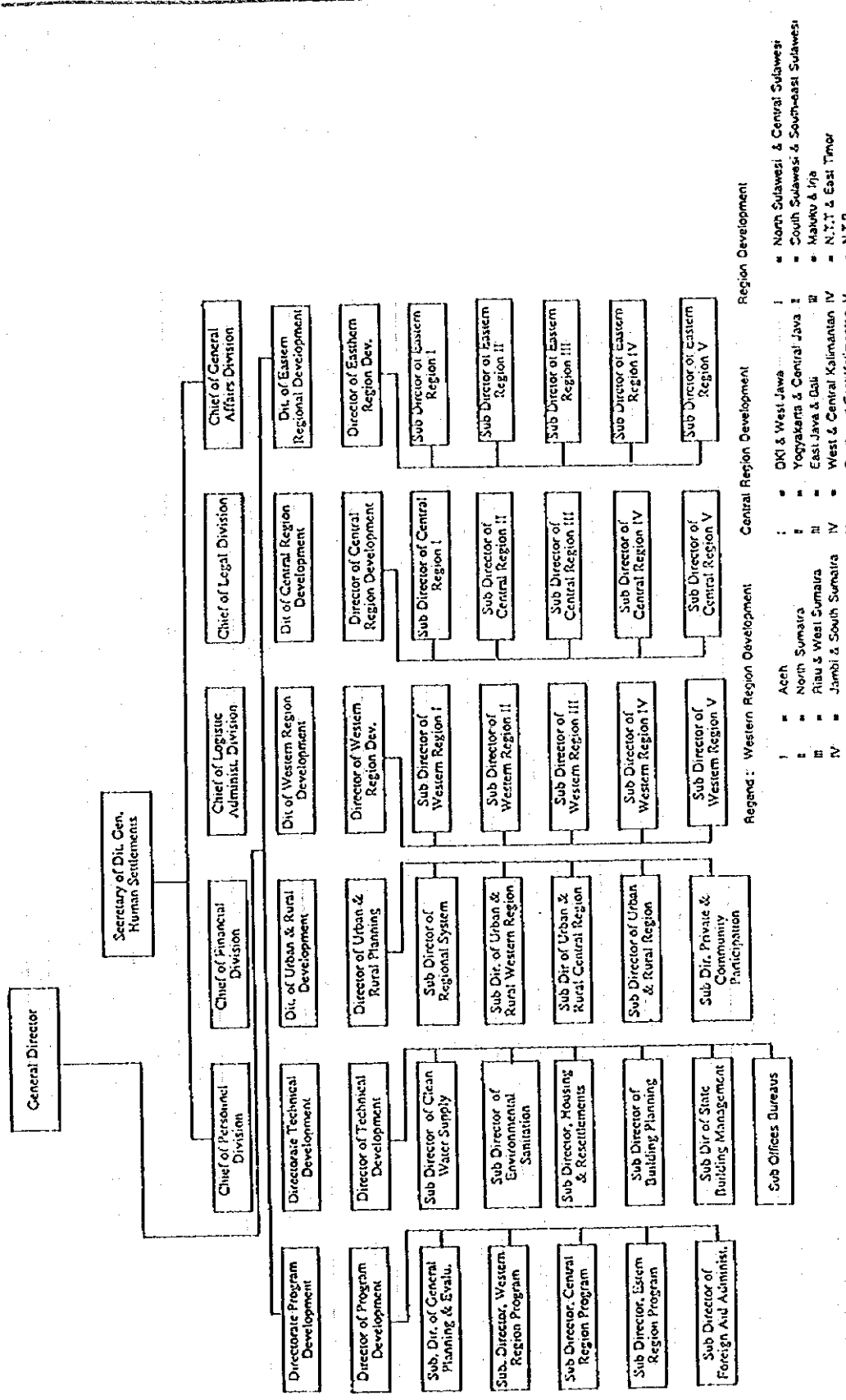


FIG. 2.2.2 Organization Chart of General Directorate of Cipta Karya  
 MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE  
 MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

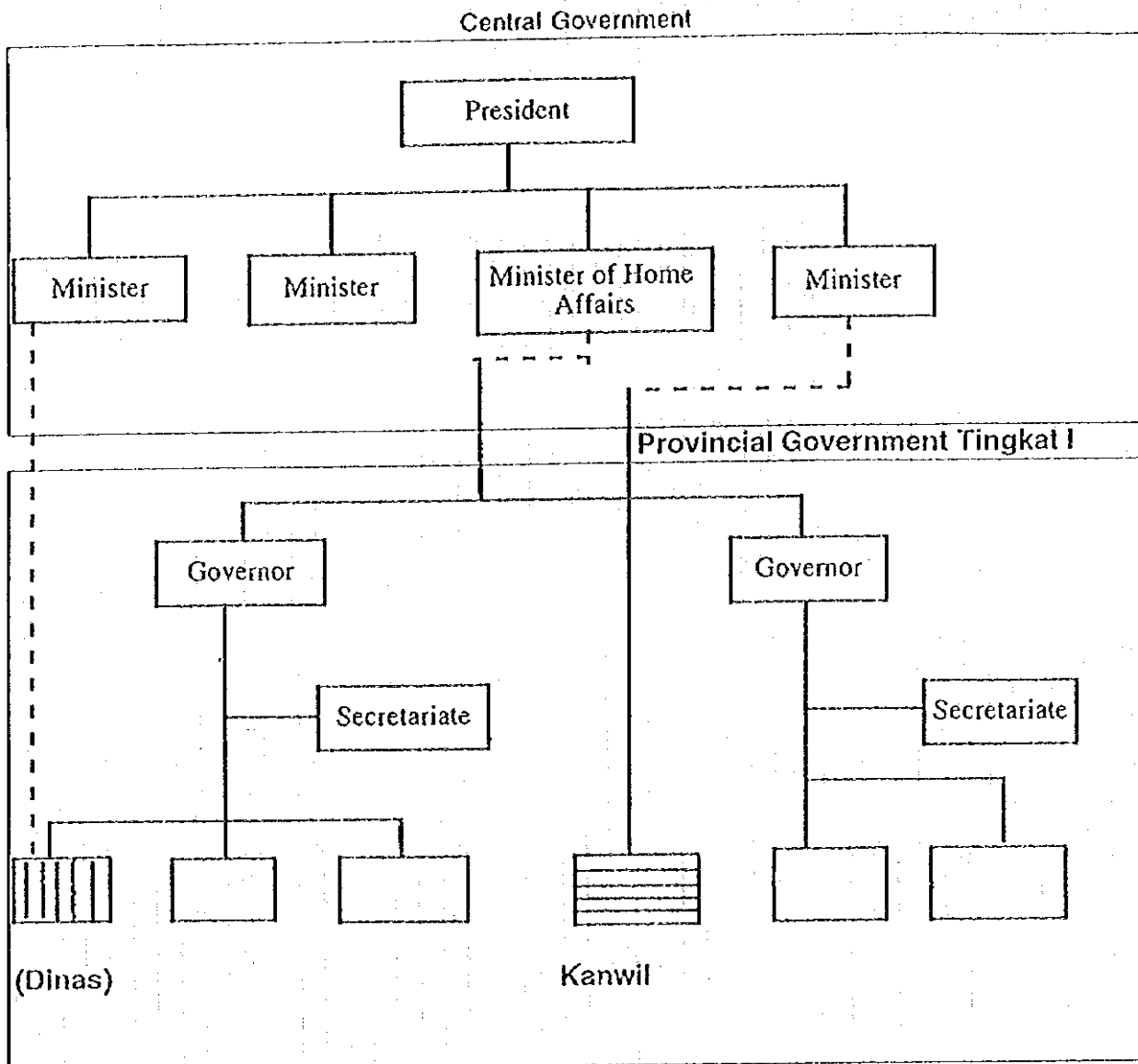


FIG. 2.2.3 Relation between the Central Government and Provincial Governments

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

DECREE ENCLOSURE OF PUBLIC  
 WORK No. 60 KPTS 1982  
 March 1st 1982

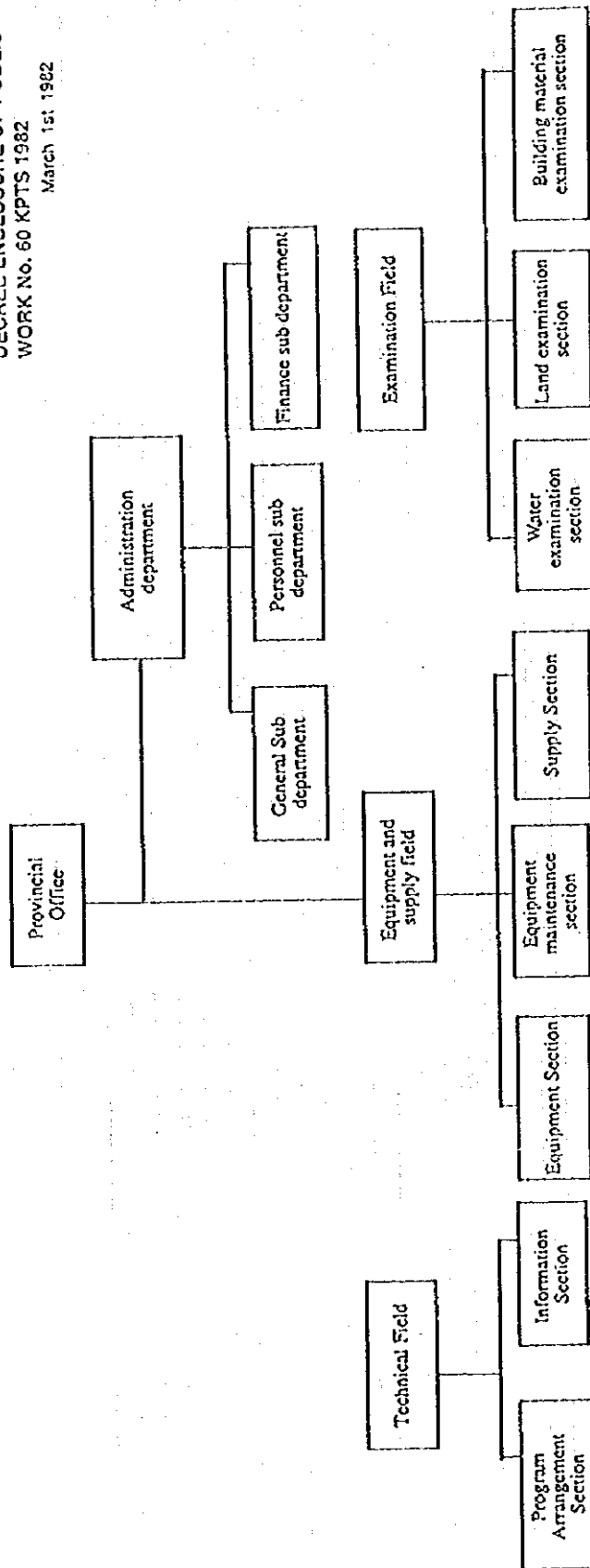


FIG. 2.2.4 Organization Chart of KANWIL / Provincial Office

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE  
 MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

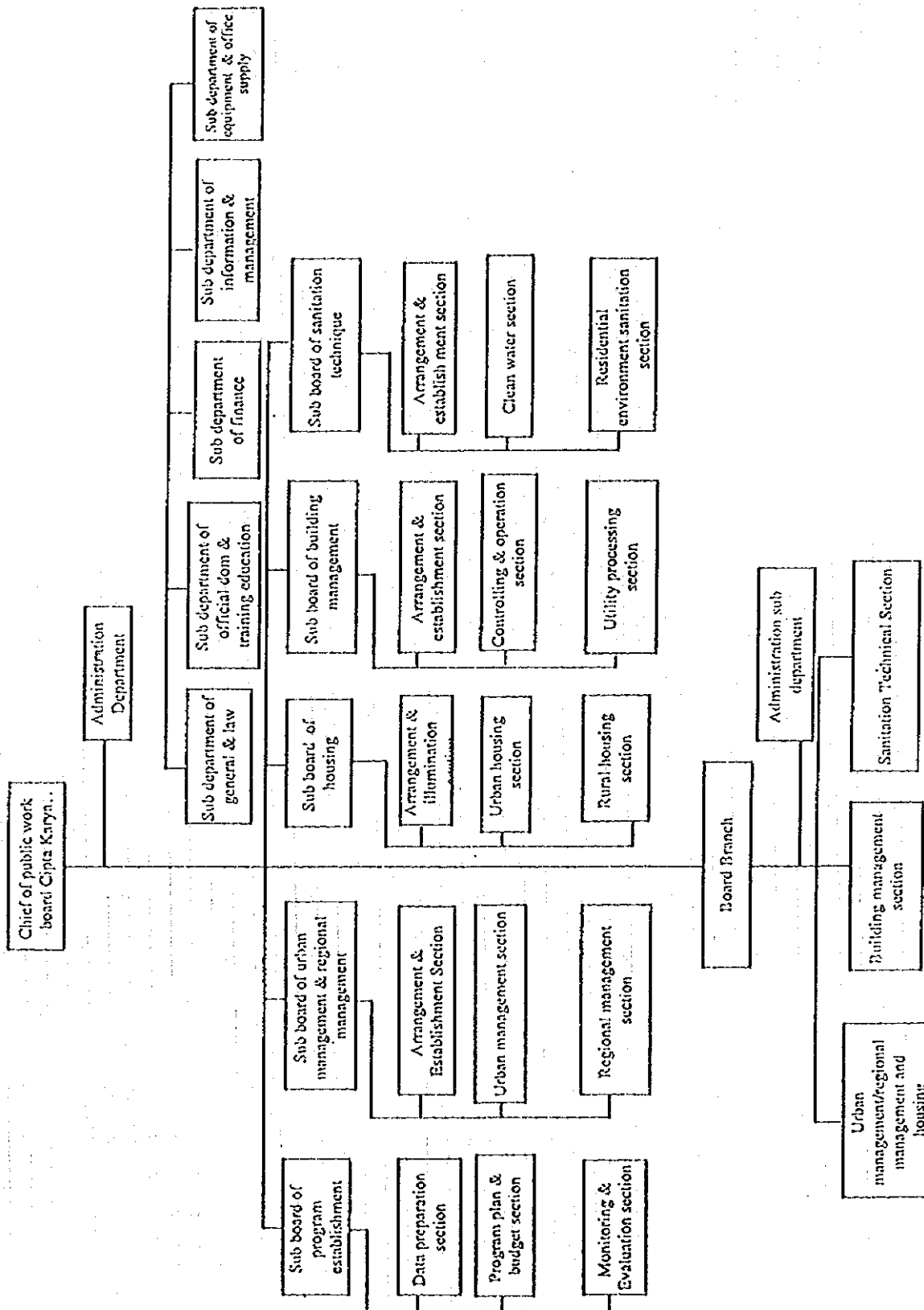
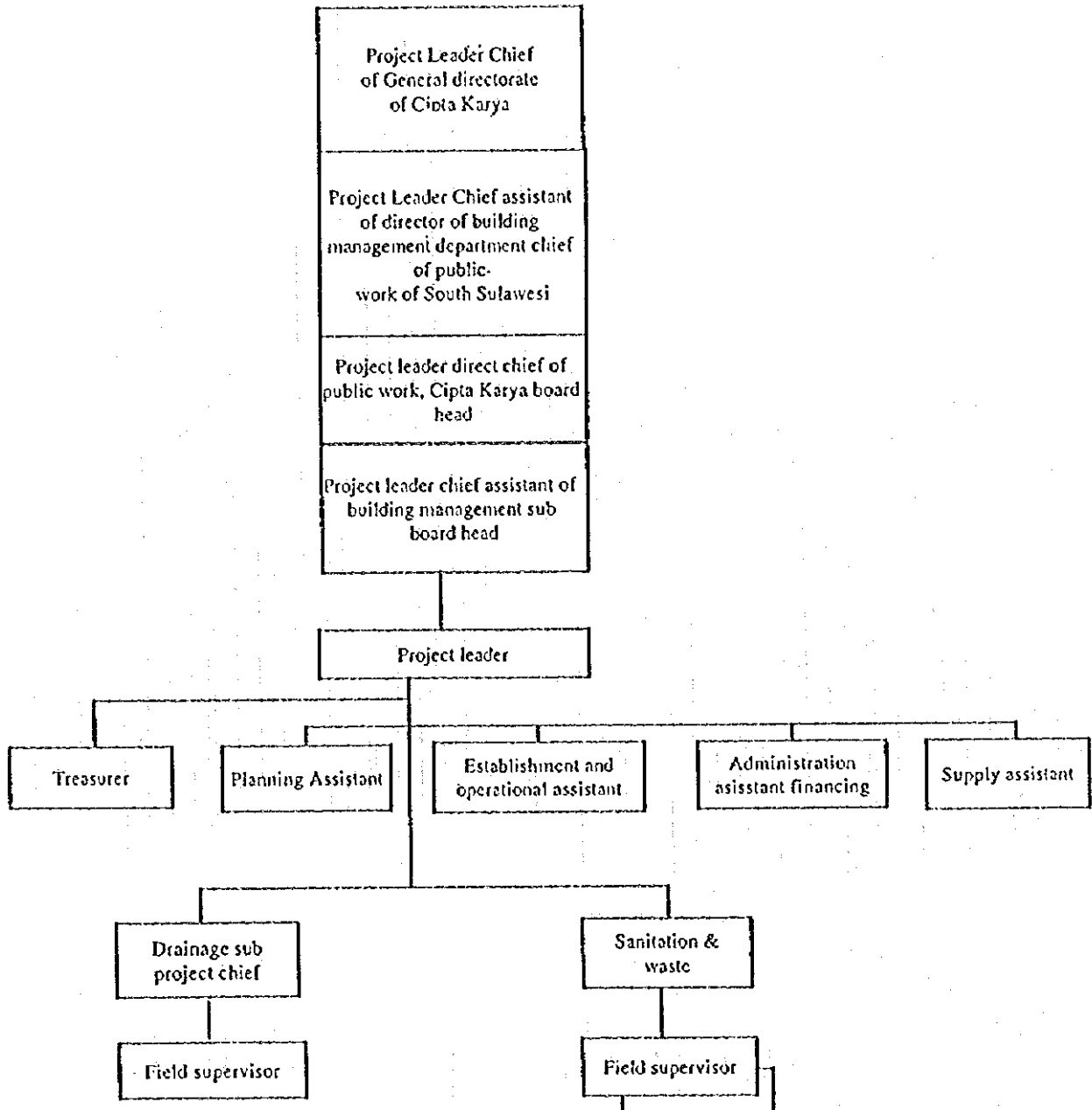


FIG. 2.2.5 Cipta Karya Public Works Agency

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA





Department Chief of Public Work of South Sulawesi

FIG. 2.2.6

Organization Chart of Settlement Environmental Sanitation Project of South Sulawesi

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

DECREE OF PROJECT LEADER OF HOUSING IMPROVEMENT AND SETTLEMENT SOUTH SULAWESI  
 NO. 0152/PP/SS/1994  
 MAY, 05 1994

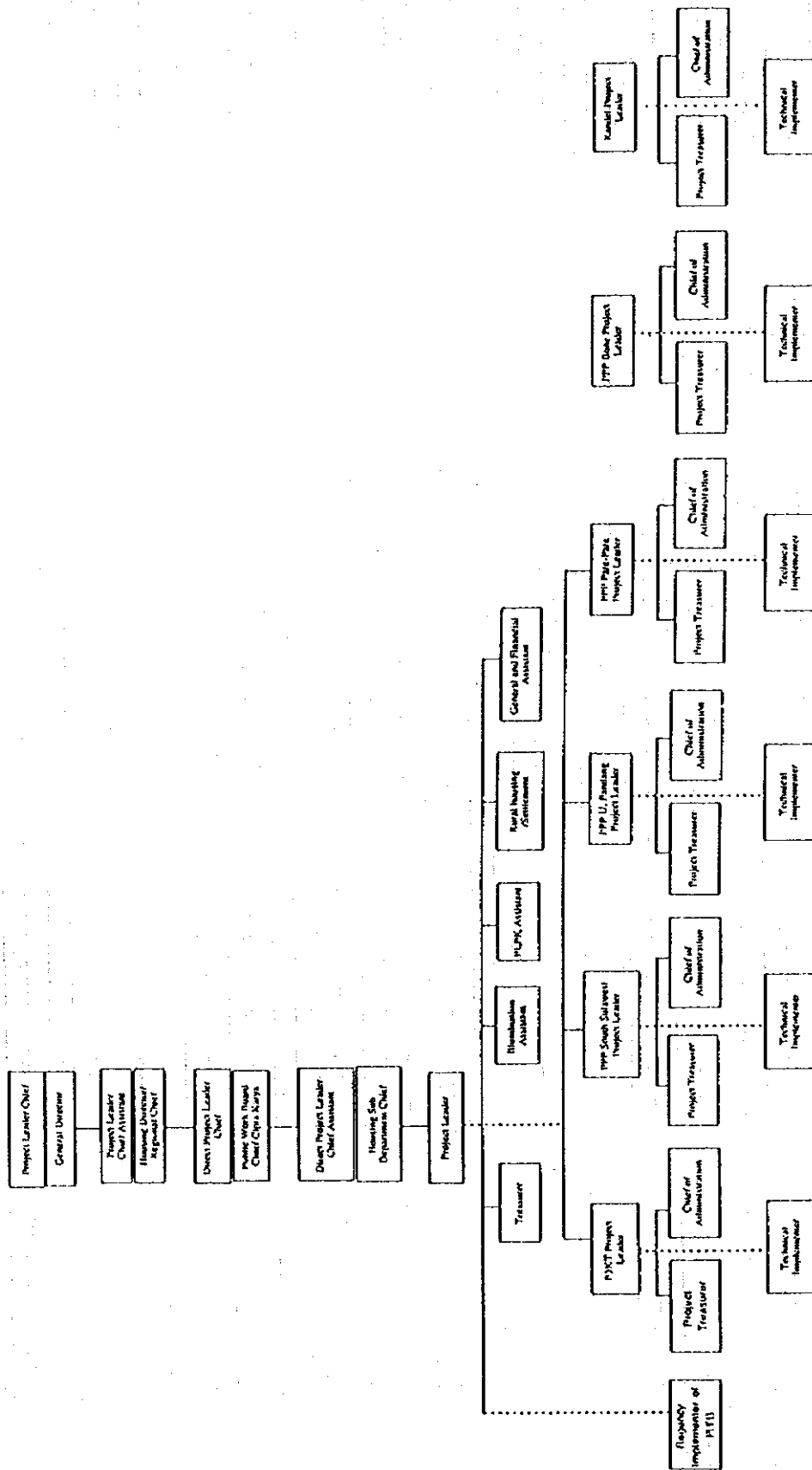


FIG. 2.2.7 Organization Chart of Housing and Settlement Improvement in South Sulawesi 1994/1995 IIB Pattern

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

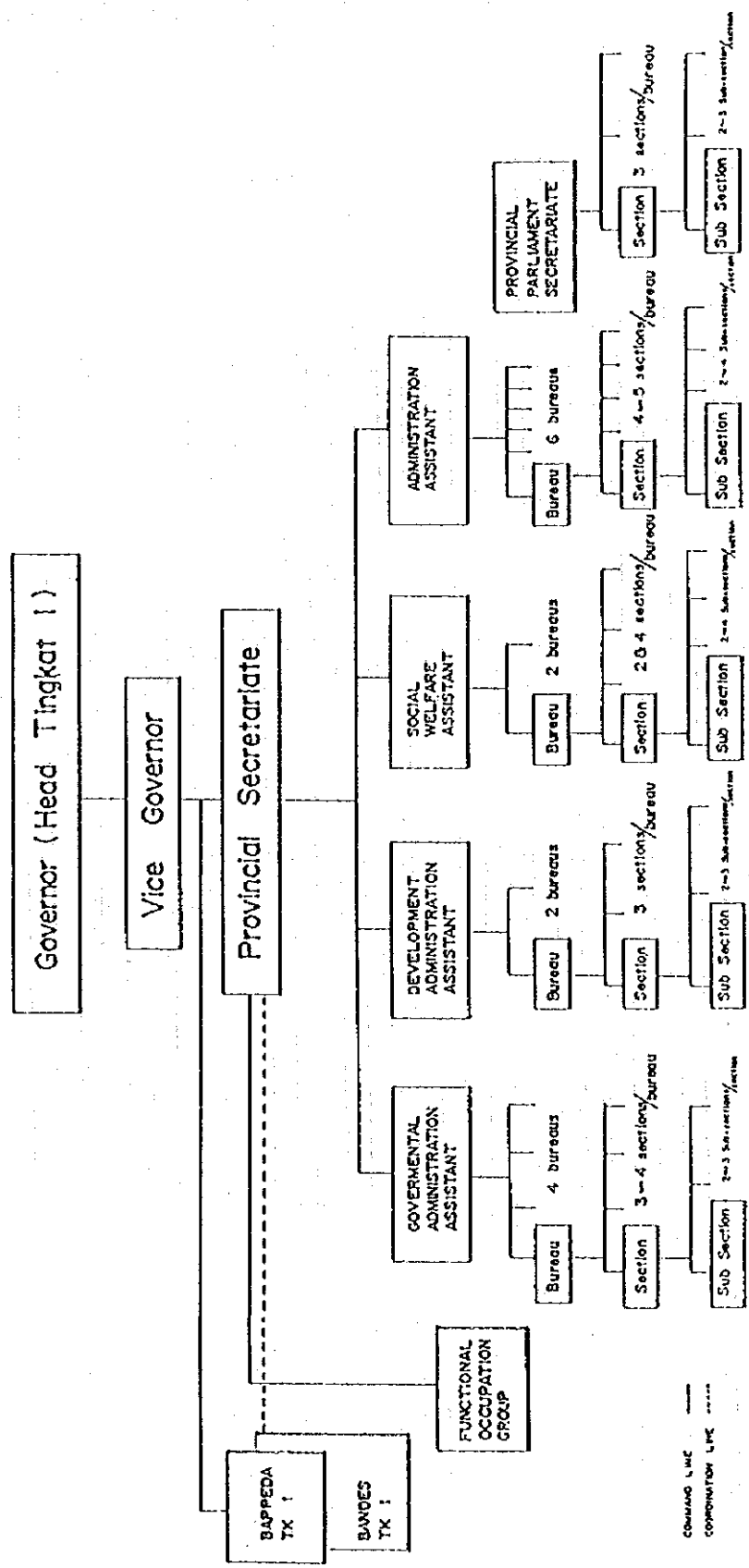


FIG. 2.2.8 Organization Chart of DATI I in South Sulawesi (1)

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

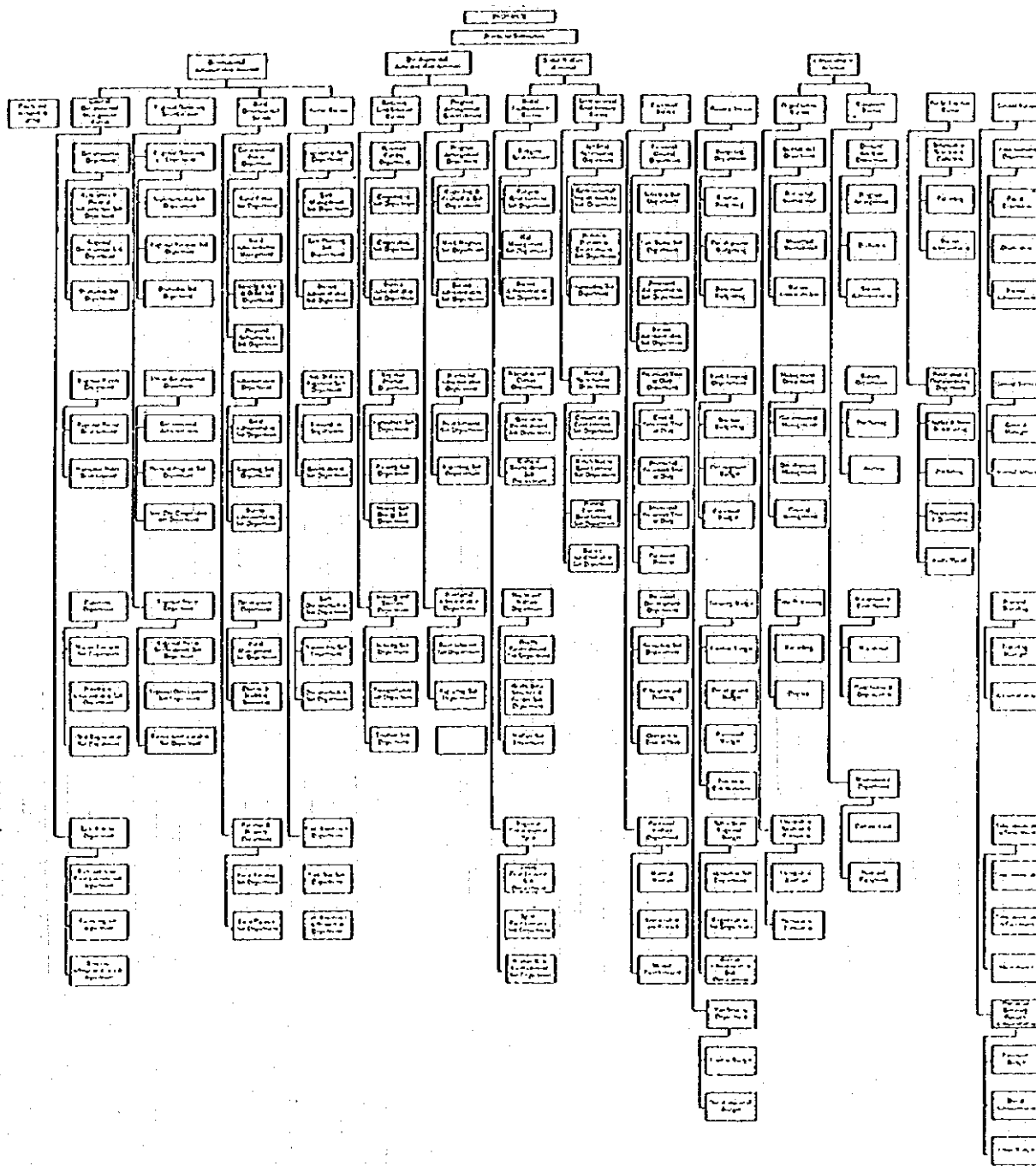


FIG. 2.2.9

Organization Chart of DATI I in South Sulawesi (2)

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE  
MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

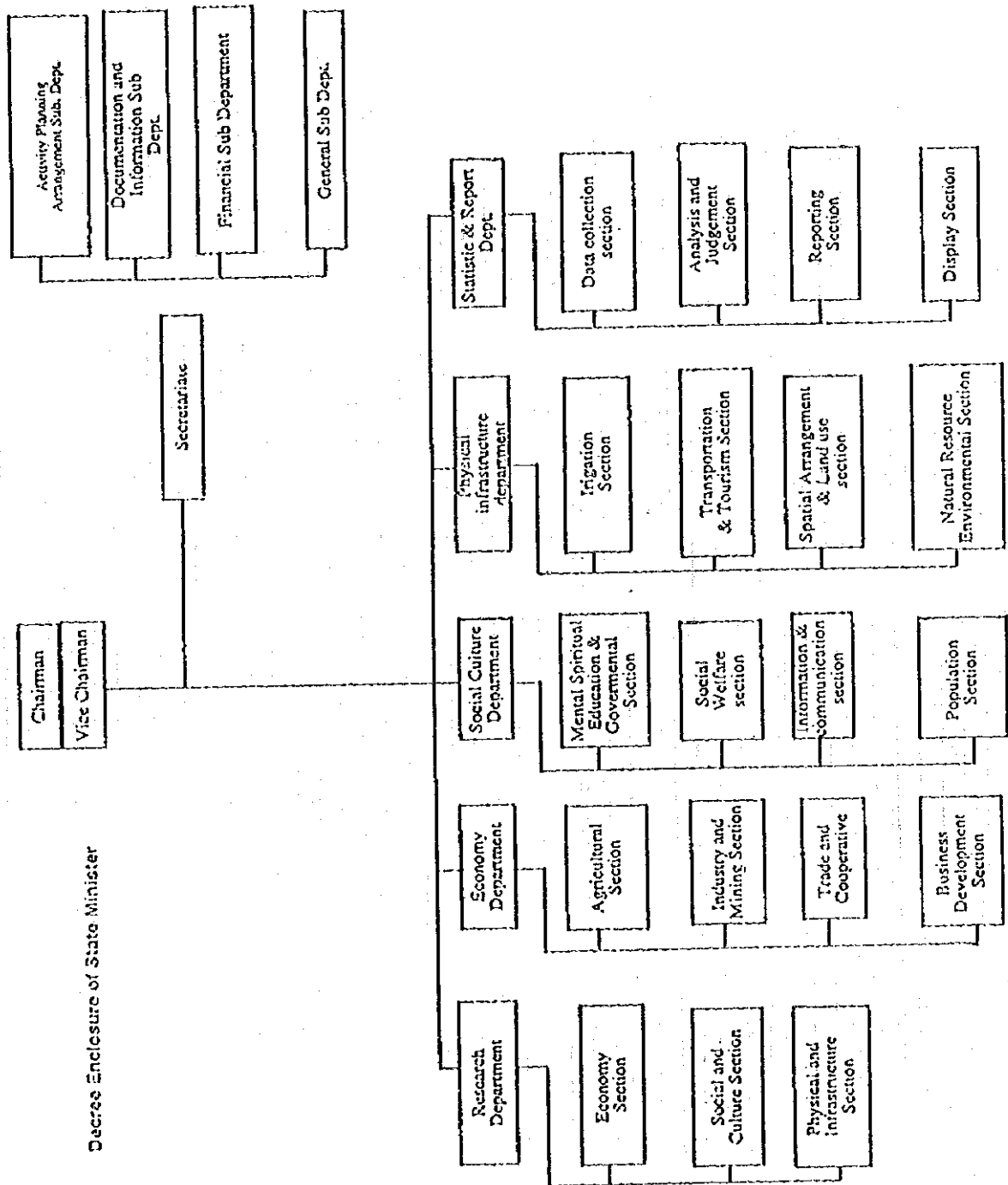


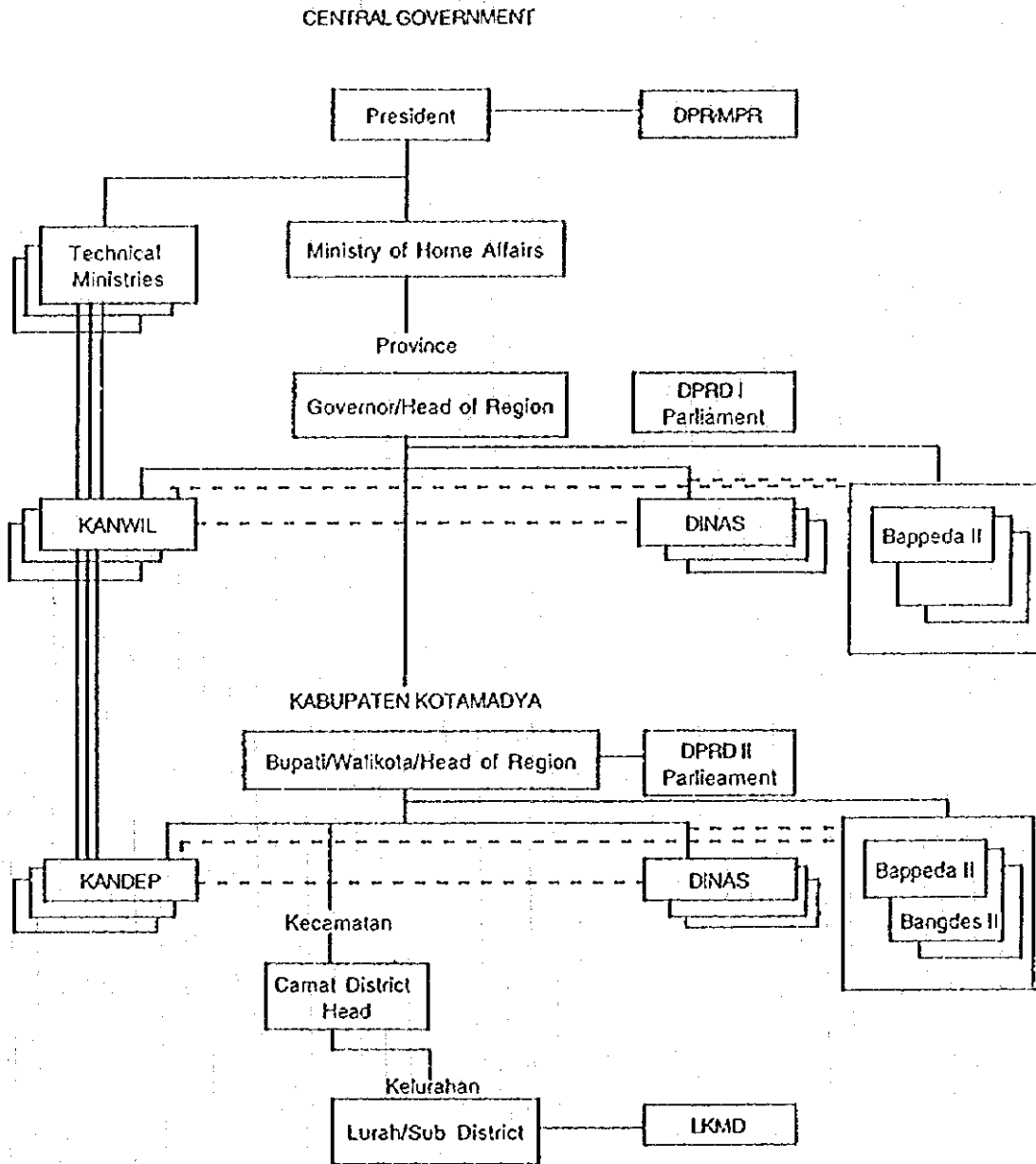
FIG. 2.2.10

Organization Structure and Work Management of Provincial Planning Development Board

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

Deconcentration

Decentralization



SOURCE : Nick Devas, ed., Financing Local Government in Indonesia, p.5 and Modification by JICA Study Team

- Remarks :
- (1) Kandep (Kantor Departemen/Ministerial office) are only four (4) such as for Education, Religion, Commerce and Information
  - (2) Lines ——— Order/Command  
..... Coordination

FIG. 2.2.11

Structure of Deconcentration and Decentralization in Development among the Governments

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

# REGIONAL GOVERNMENTAL SYSTEM

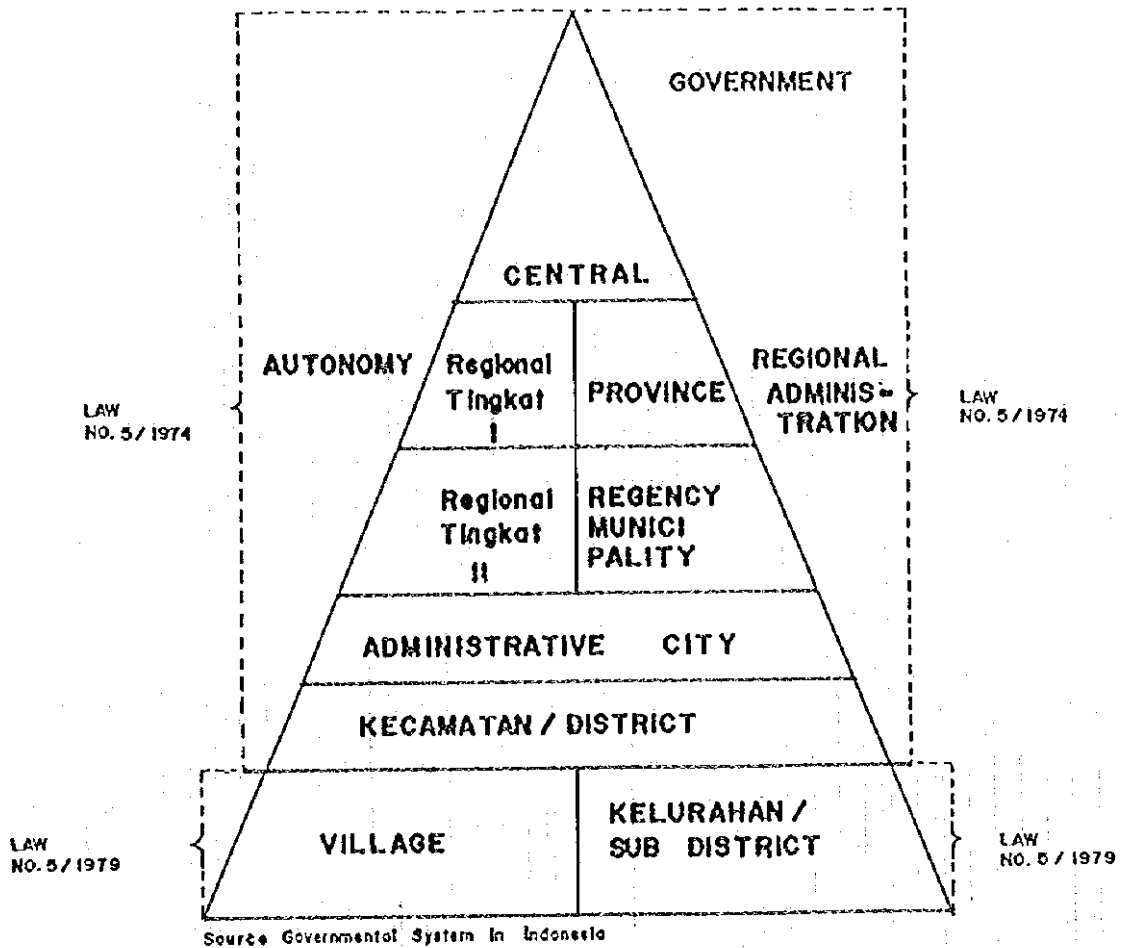


Fig.B.II

**FIG. 2.2.12      Regional Governmental System**

**MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA**

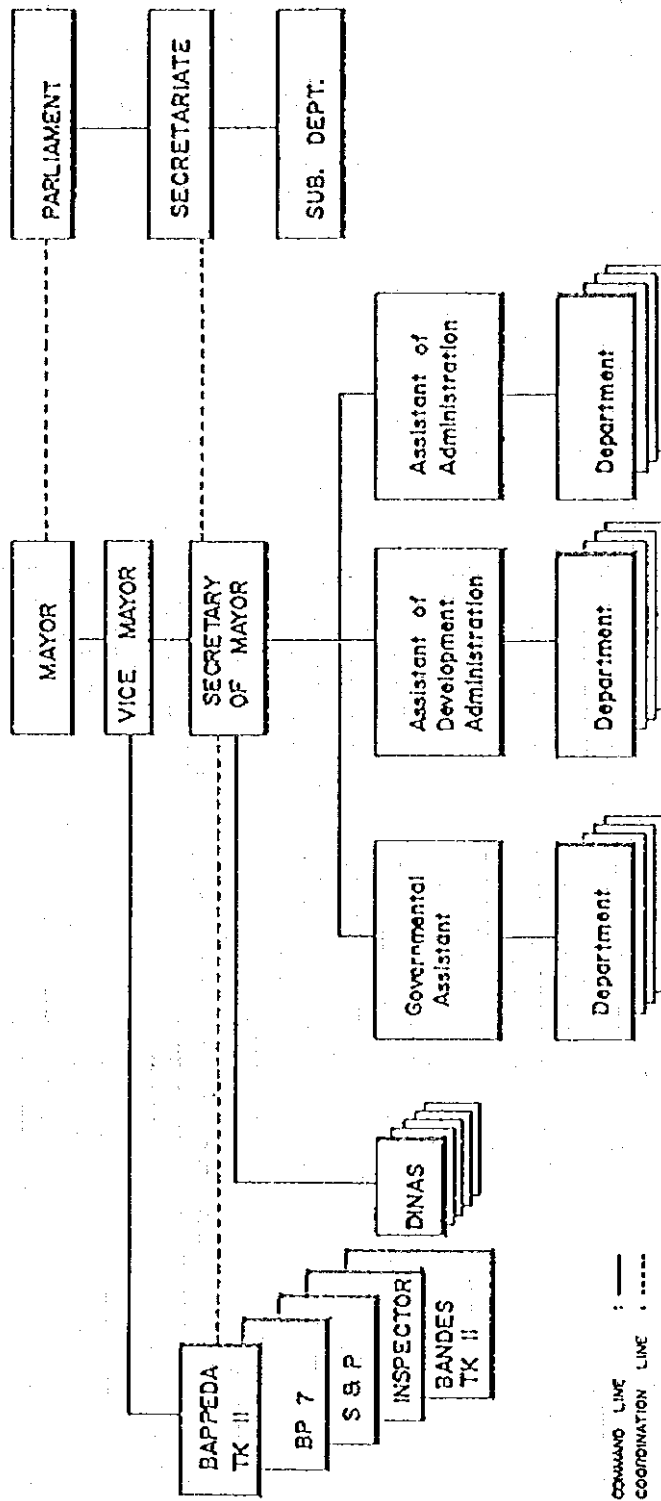


FIG. 2.2.13 Organization Chart of KMUP (1)

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA



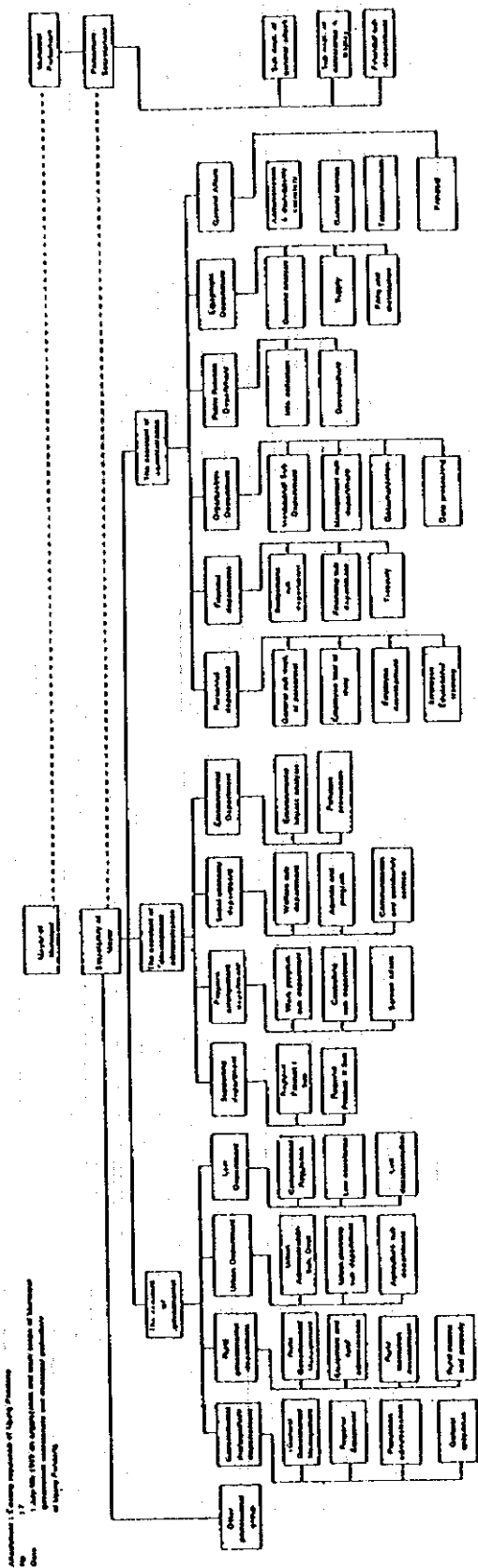


FIG. 2.2.14 Organization Chart of KMUP (2)

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

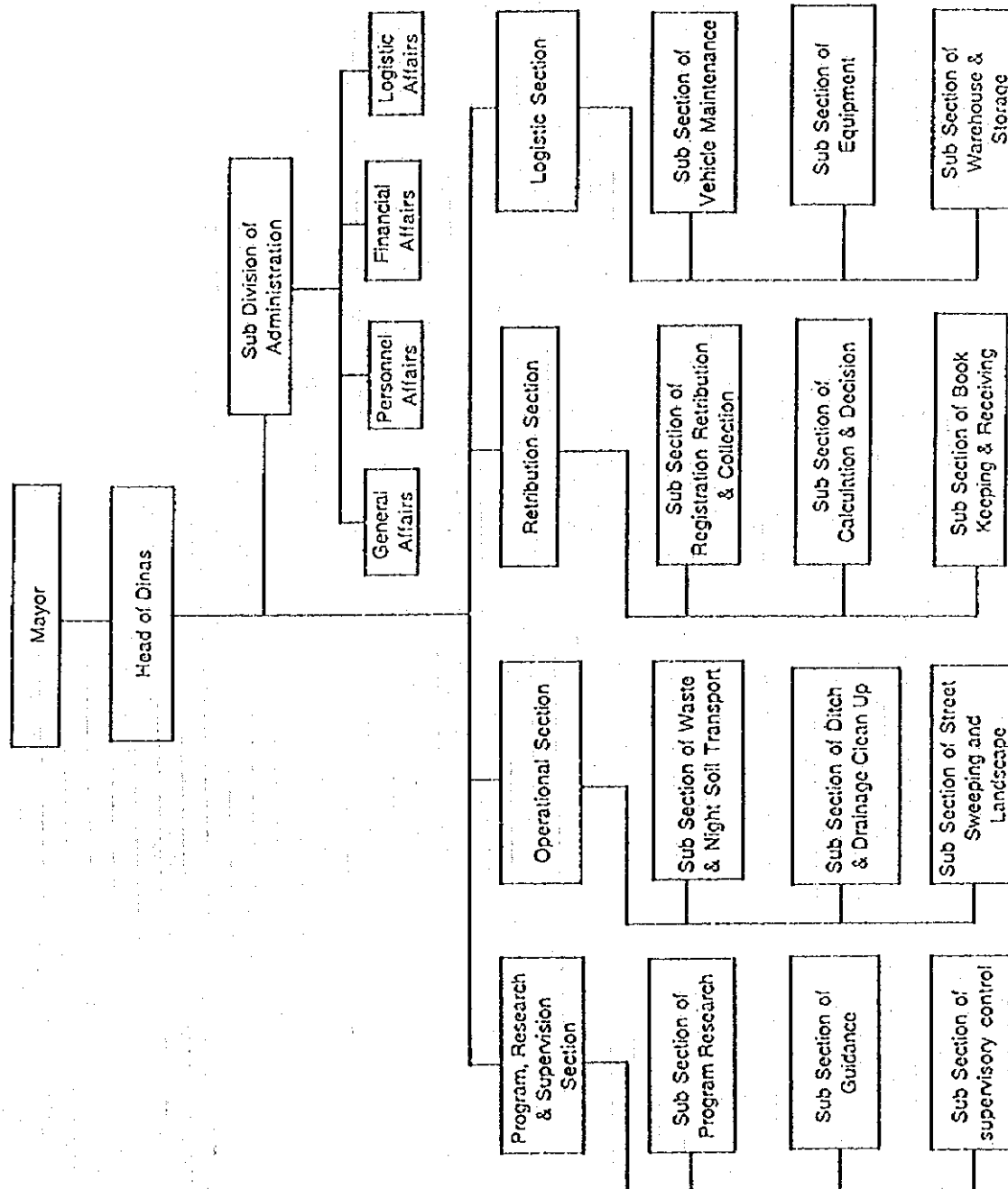
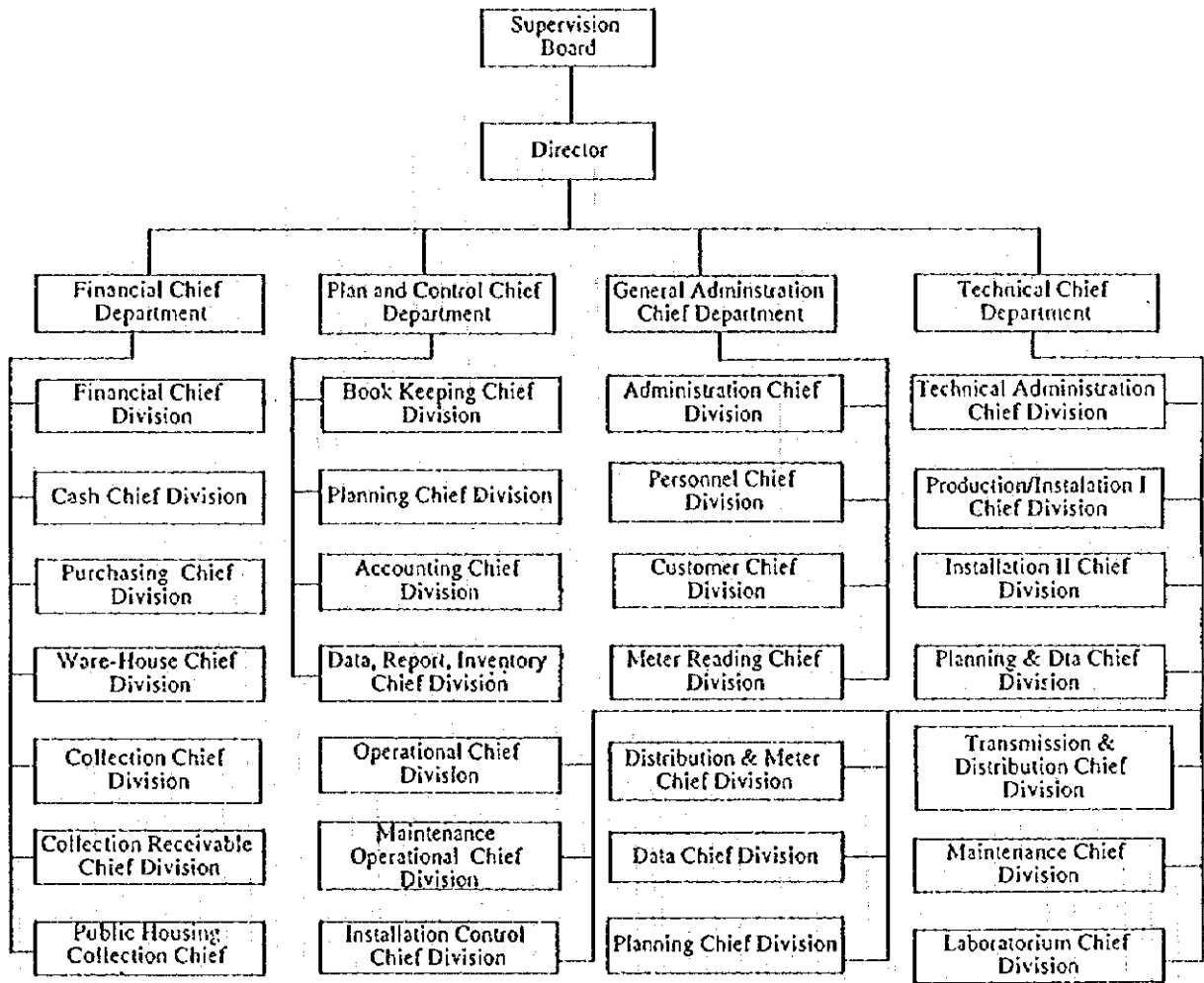


FIG. 2.2.15

Organization Chart of Dinas Kebersihan

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA



- 1 SK. No. 110/S.Kep/E/II/83 tanggal 1 September 1983
- 2 SK. No. 99/S.Kep/AN/81 tanggal 16 MEI 1981
- 3 SK. No. 188/B.3a/VU/81 tanggal 6 JULI 1981
- 4 SK. No. 016/B.3a/1/83 tanggal 13 JAN. 1983

NC Work management Referred to Accounting System from Unisystem

**FIG. 2.2.16 Organization Chart of PDAM in 1983**

**MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA**

DECREE OF UJUNG PANDANG MAYOR  
 NO. : 170/A/SKEP/B21/29/PAM/85  
 DATE : JULY 1 1985

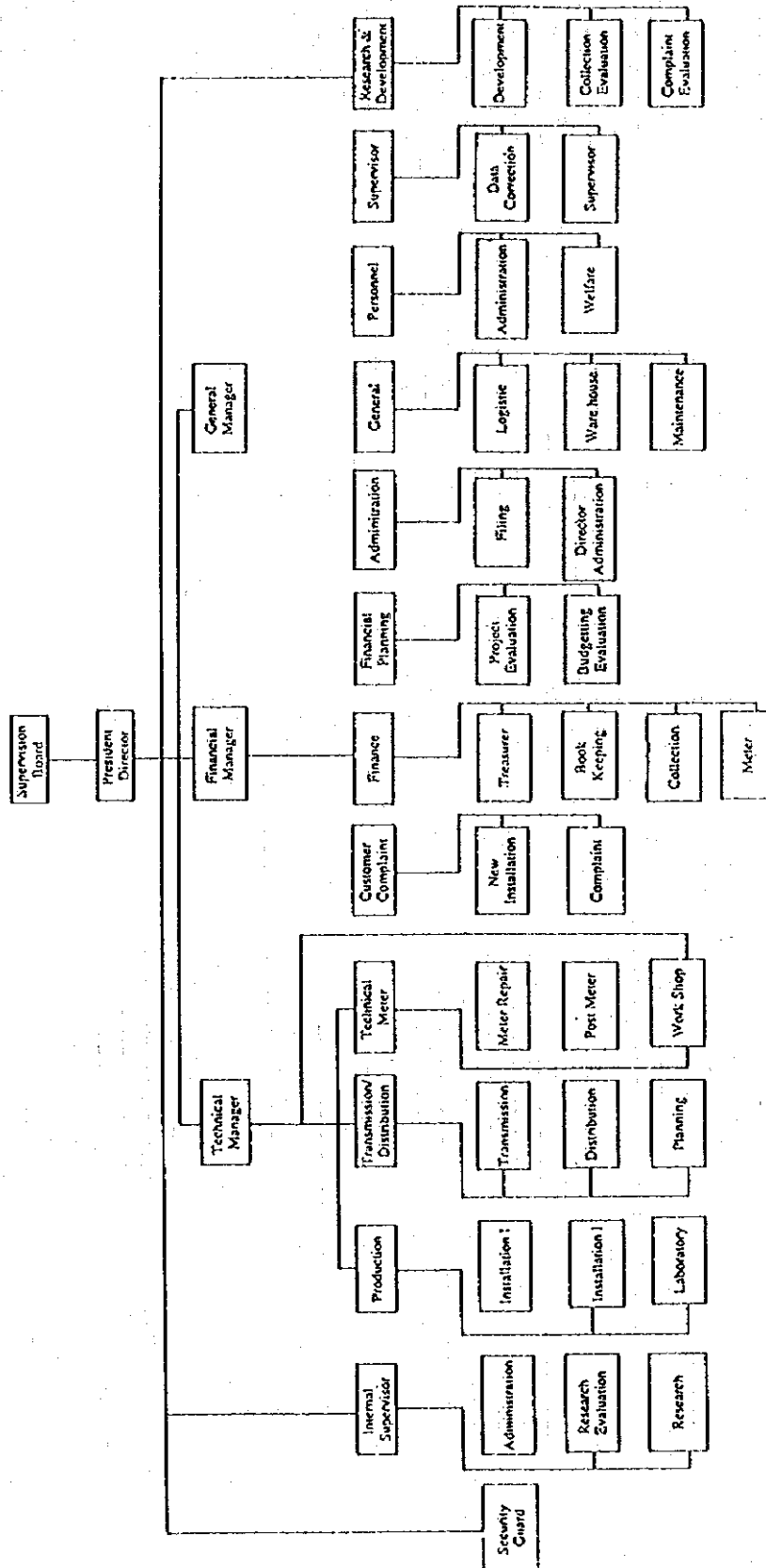


FIG. 2.2.17

Organization Chart of PDAM in 1985

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

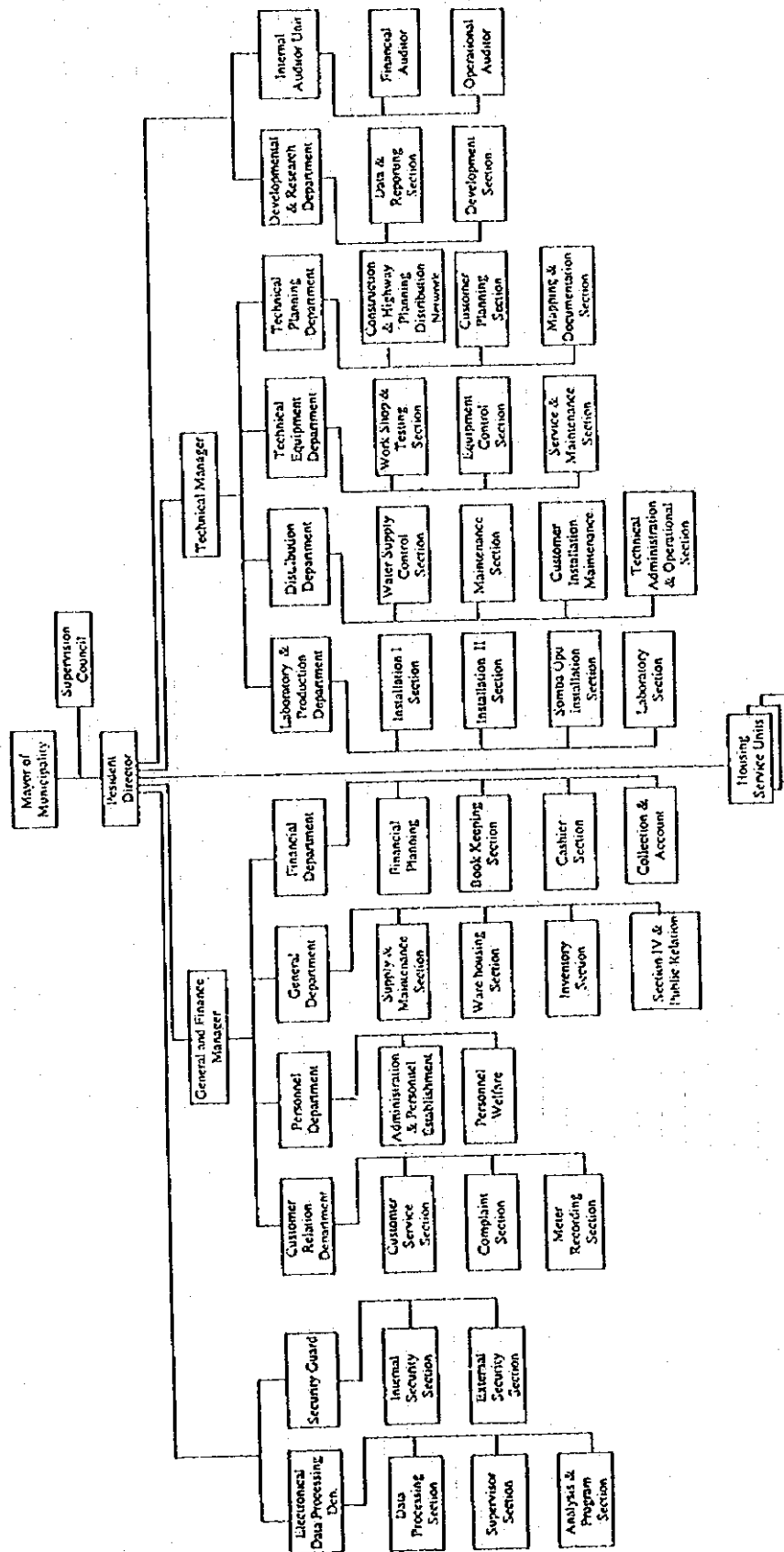


FIG. 2.2.18

Organization Chart of PDAM in 1992

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

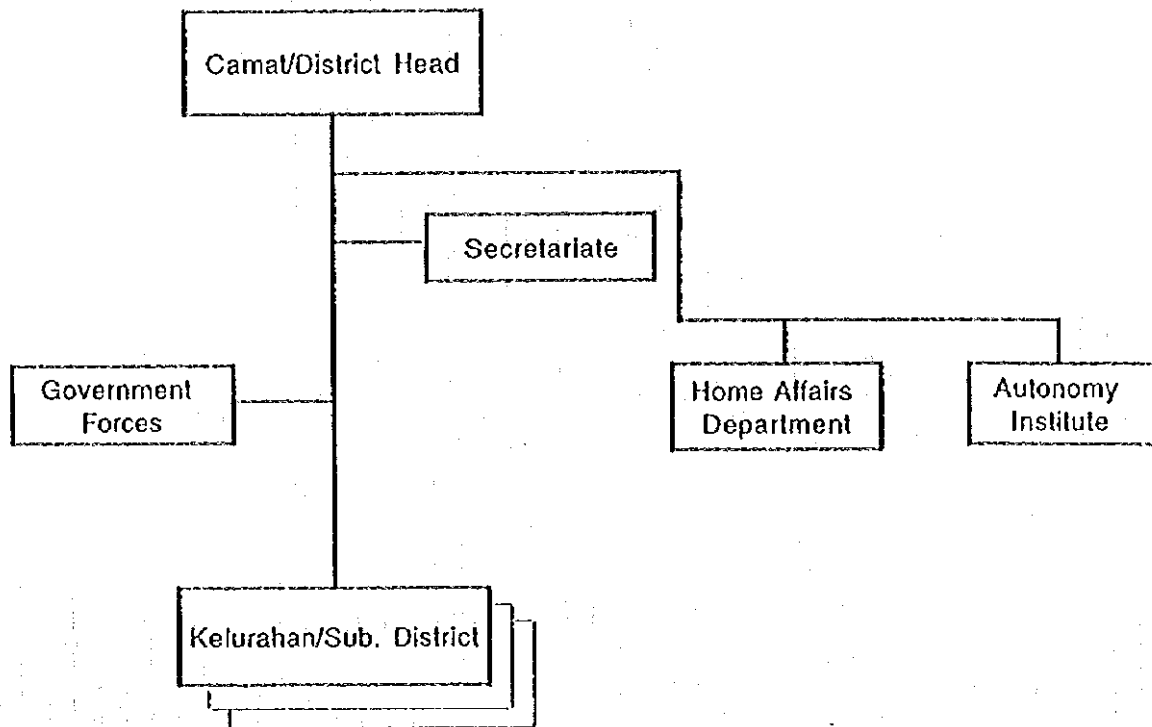


FIG. 2.2.19

Organization Chart of Kecamatan (1)

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

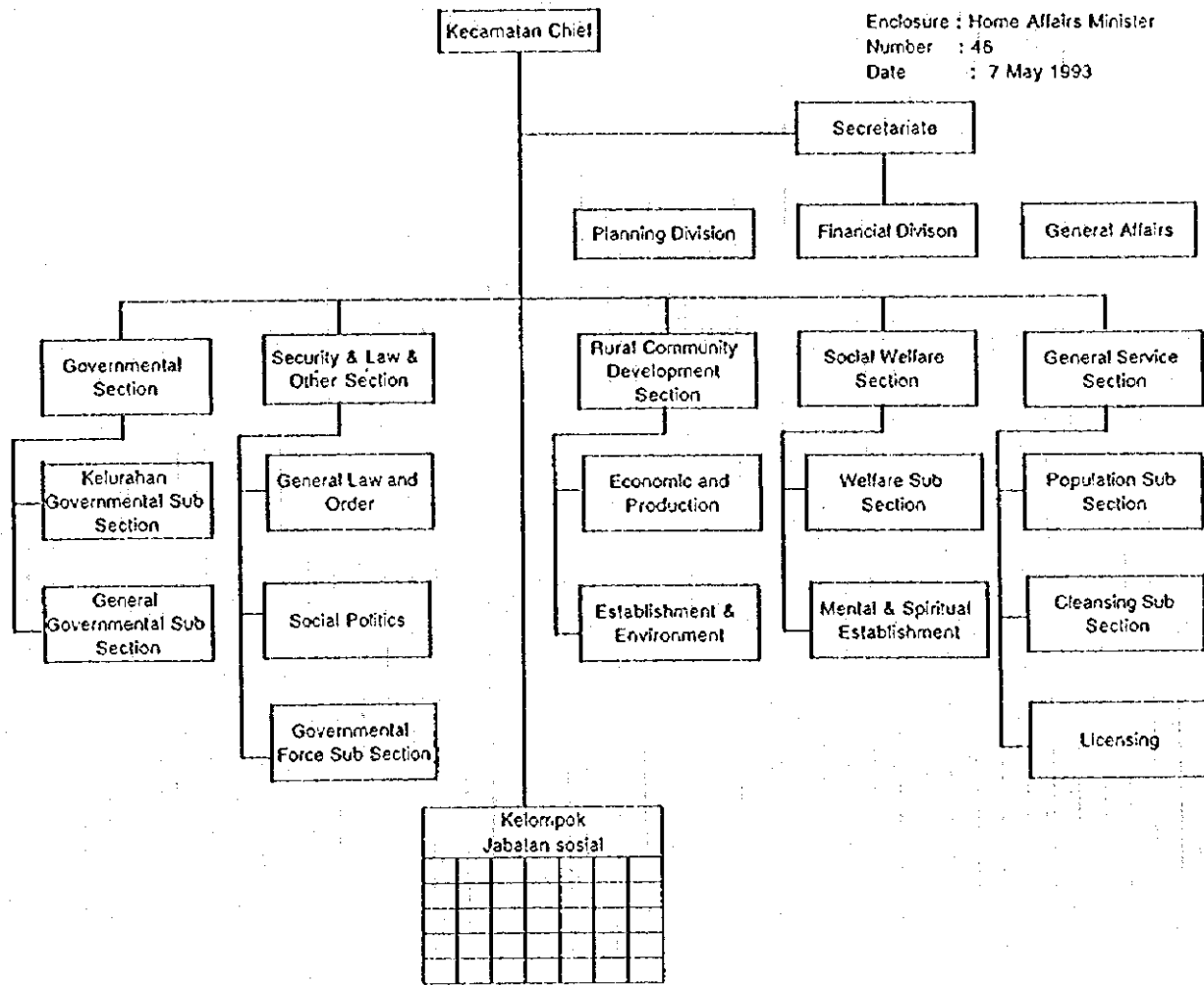


FIG. 2.2.20

Organization Chart of Kecamatan (2)

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

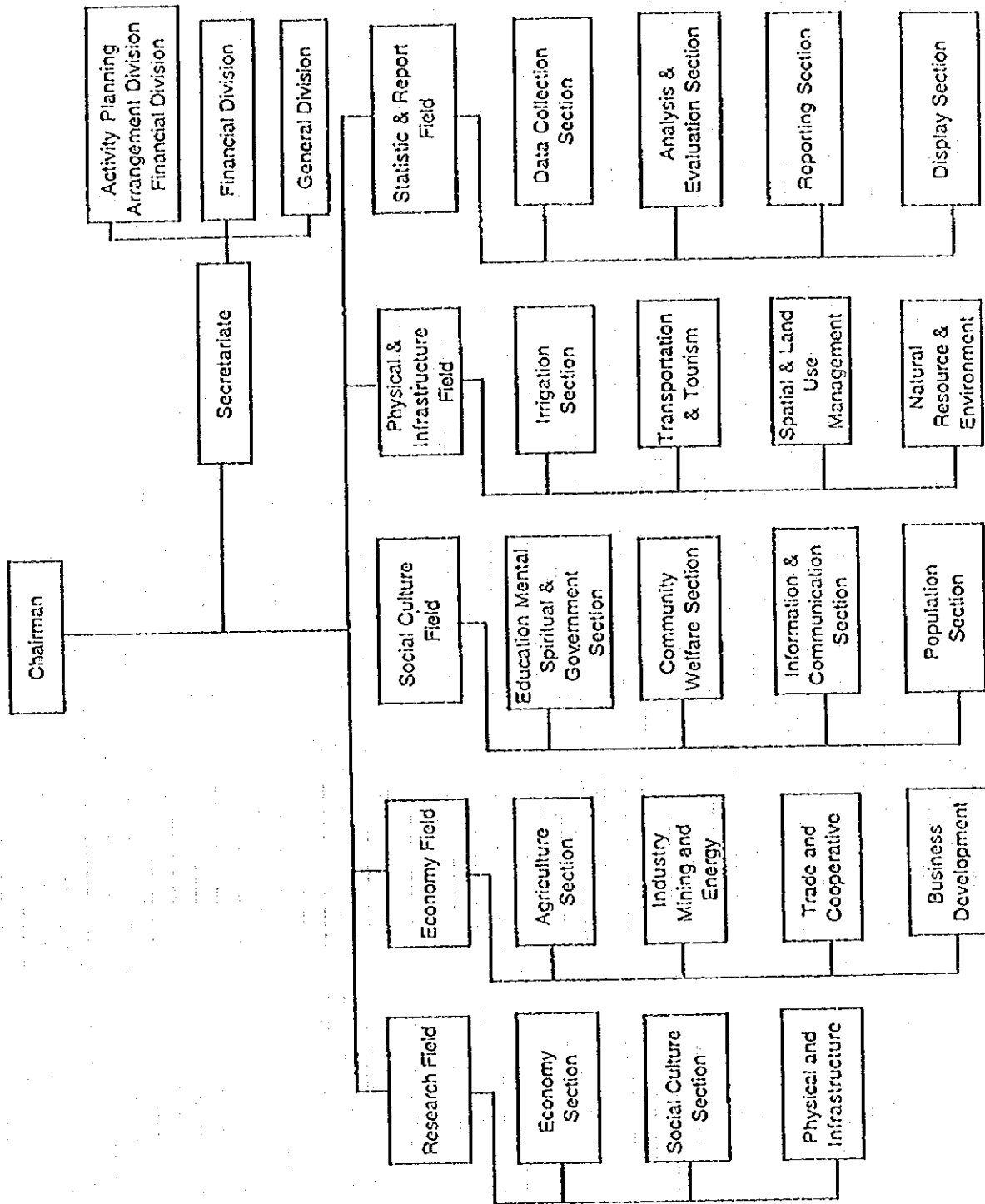


FIG. 2.2.21

Organization Chart of BAPPEDA II

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA



Keputusan Menteri Dalam Negeri  
 Nomor 80 tahun 1993  
 Tanggal 8 Oktober 1993

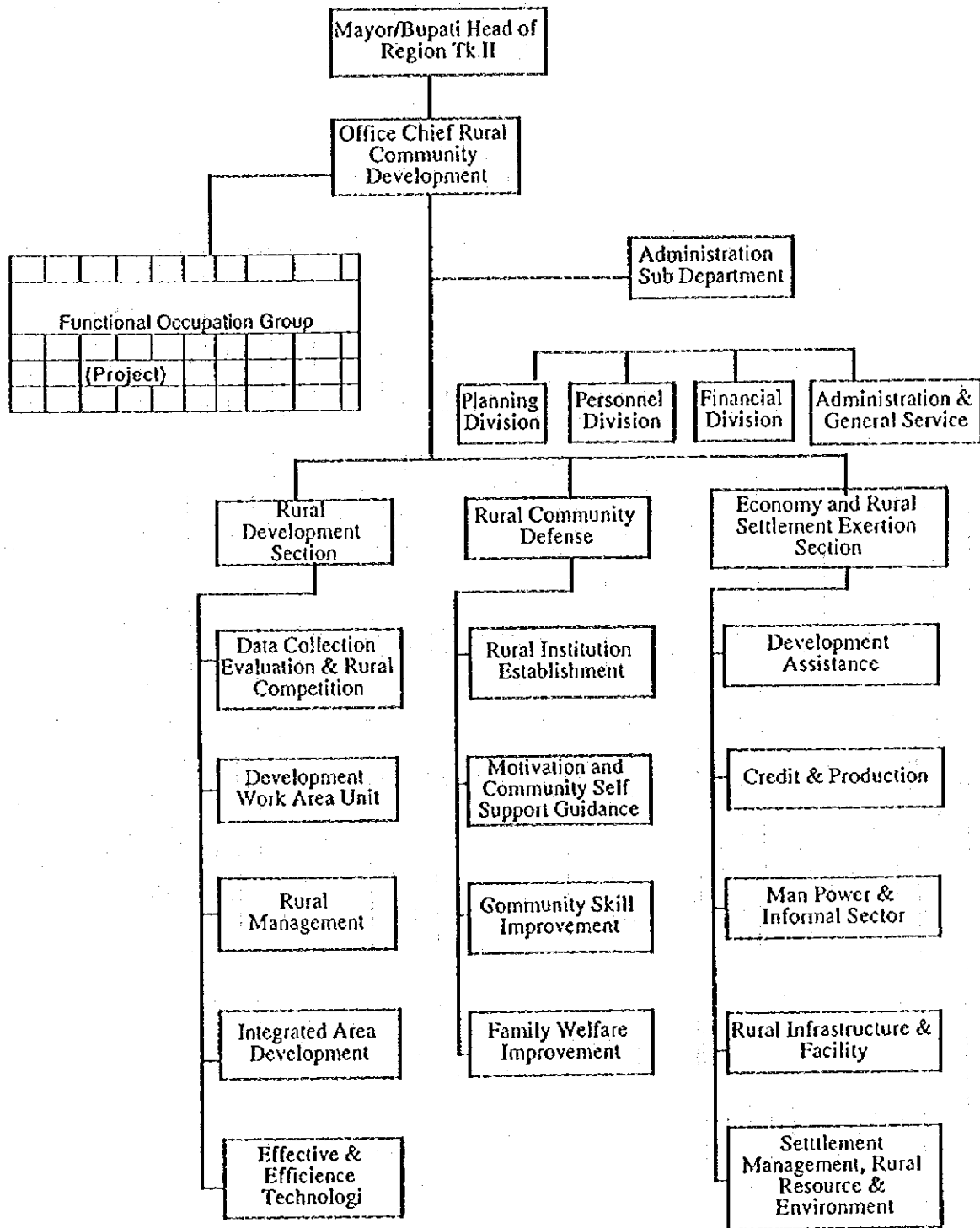
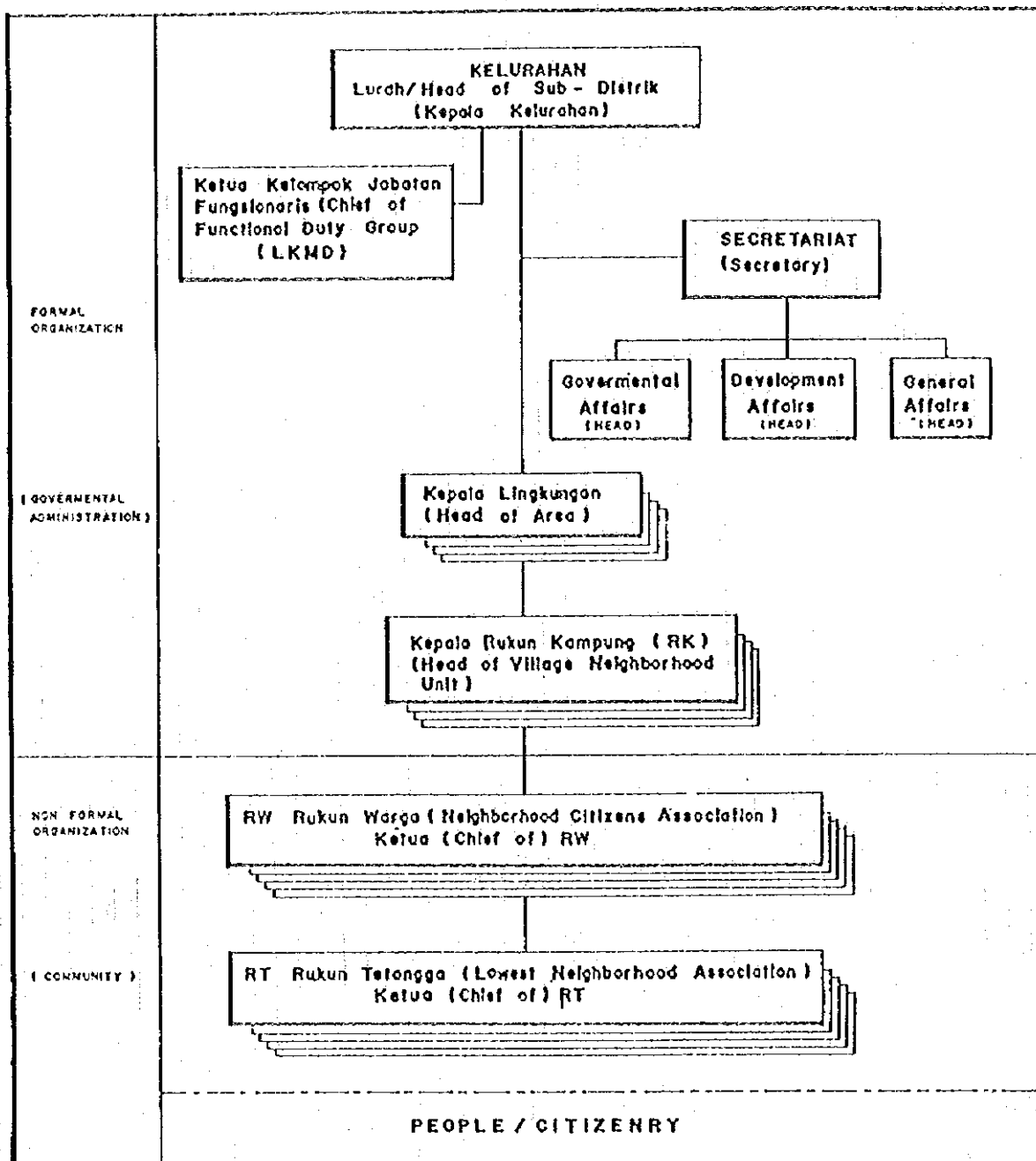


FIG. 2.2:22 Work Management & Organization of Rural Community Development (BANDES)

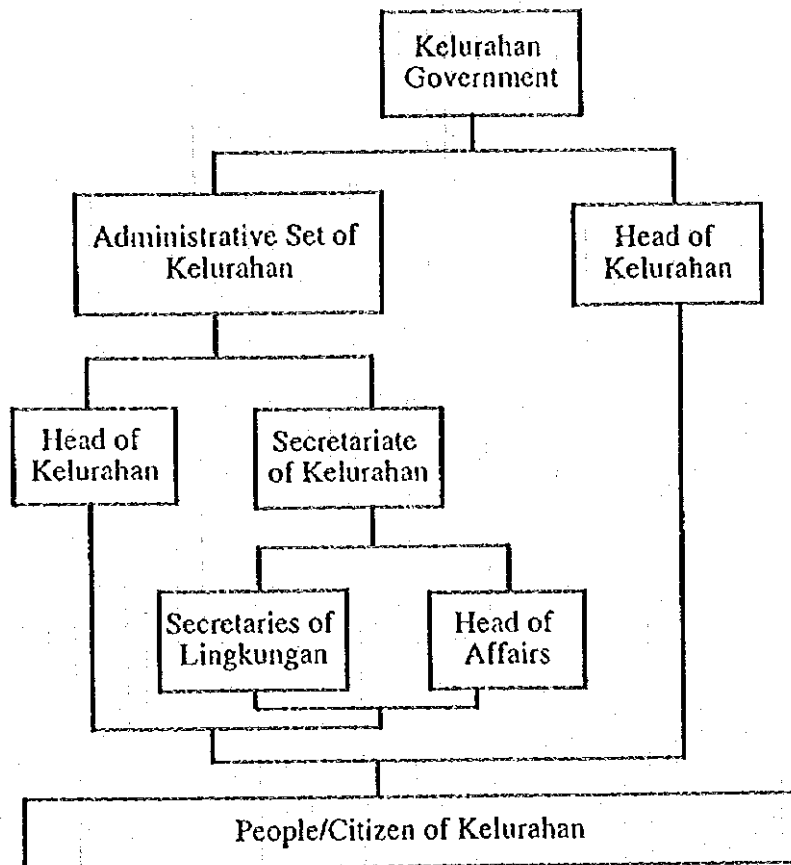
MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA



Source: JICA Study Team

FIG. 2.2.23 Structure of Formal and Non-Formal Organization at Kelurahan

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

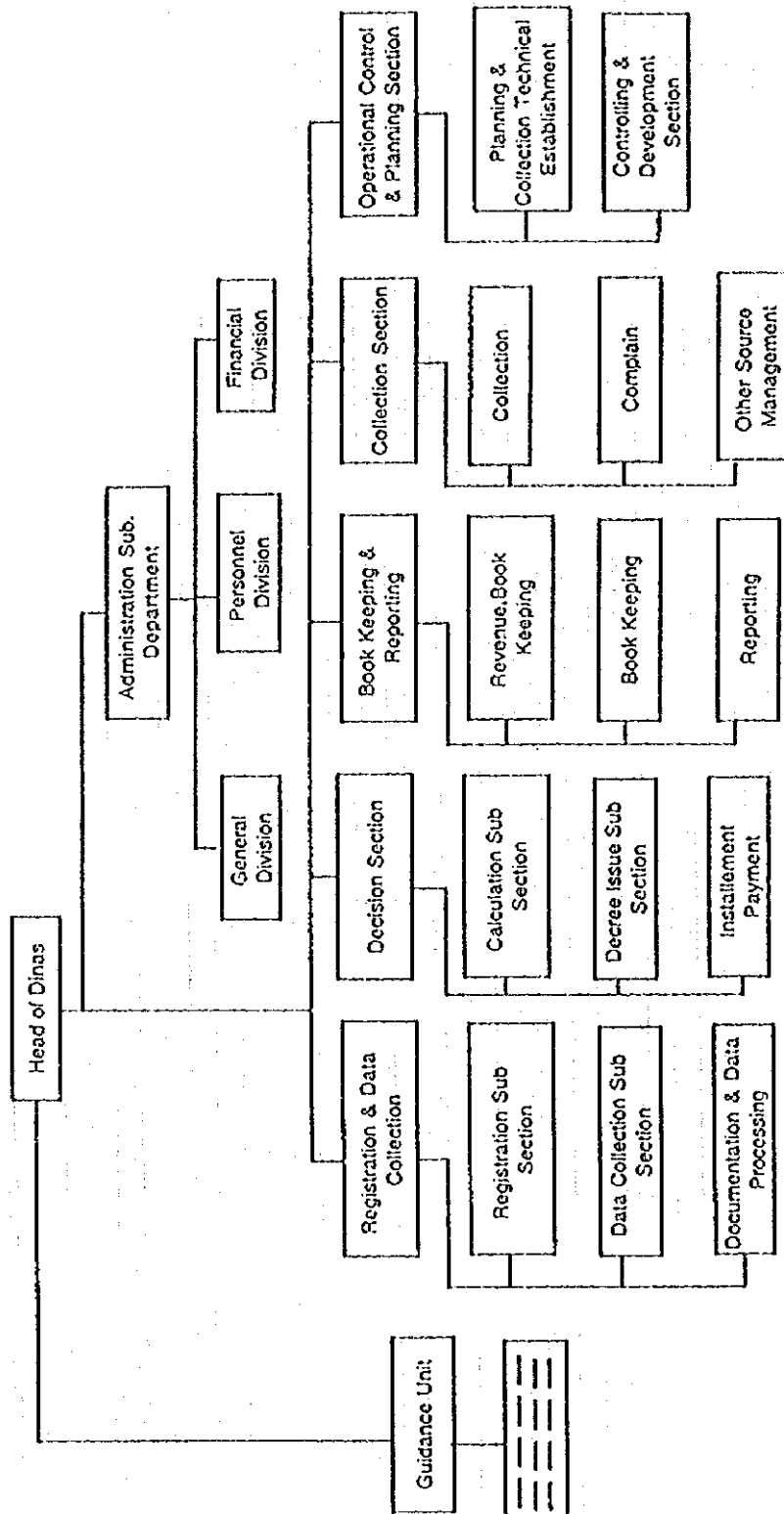


(Institutional Organization of Kelurahan Government according to the Law 5/1979)

Source : Dimension of DESA (Village) Government, Drs Taliziduhu Ndraha, PT. Bina Aksara 1981

FIG. 2.2.24 Functional Chart of Kelurahan

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA



Source : Himpunan Peraturan Daerah  
Kolamadya Ujung Pandang Page 285

FIG. 2.2.25

Organization Chart of Regional Revenue Agency

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE  
MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

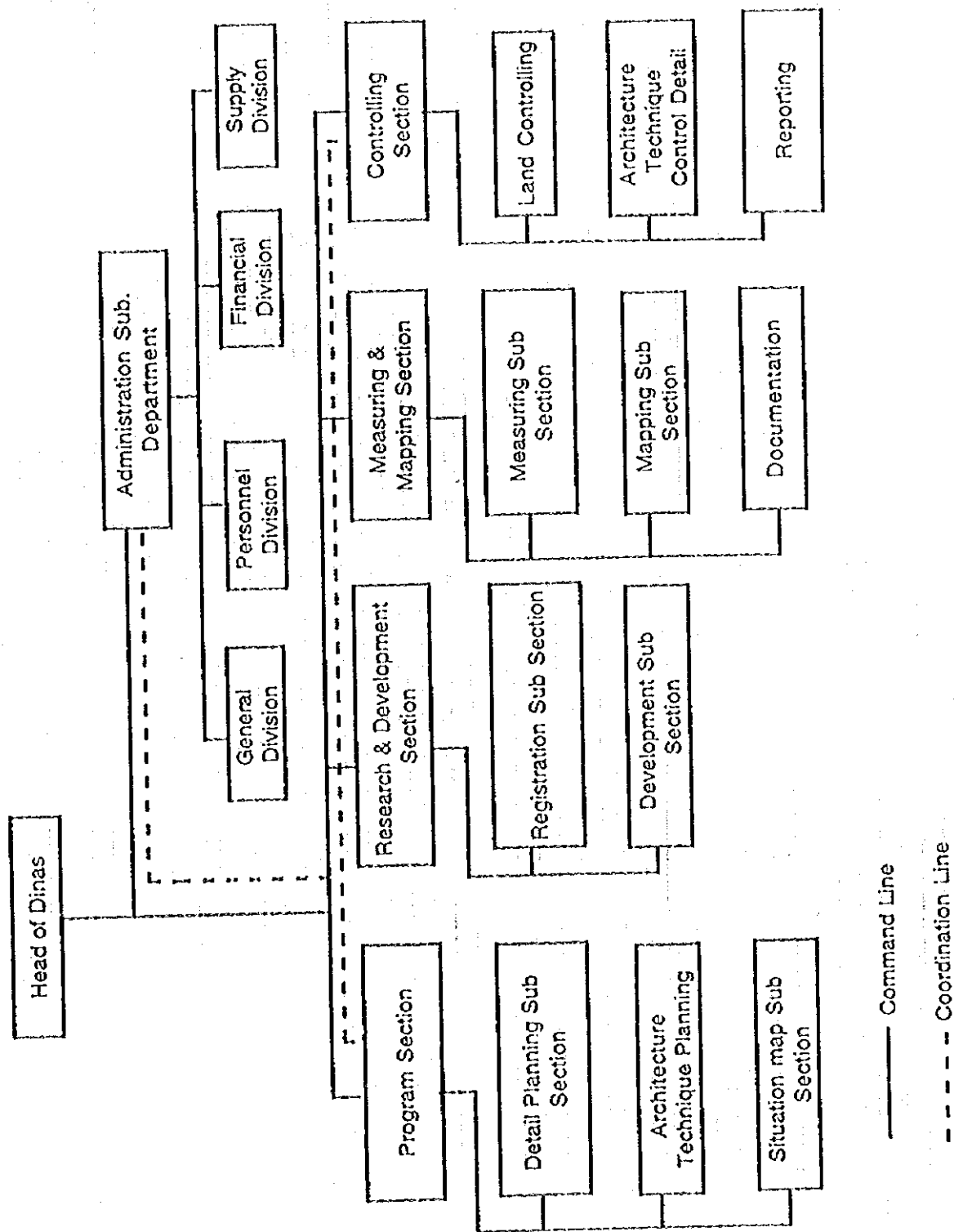


FIG. 2.2.26 Organization Chart of Urban Management Agency

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

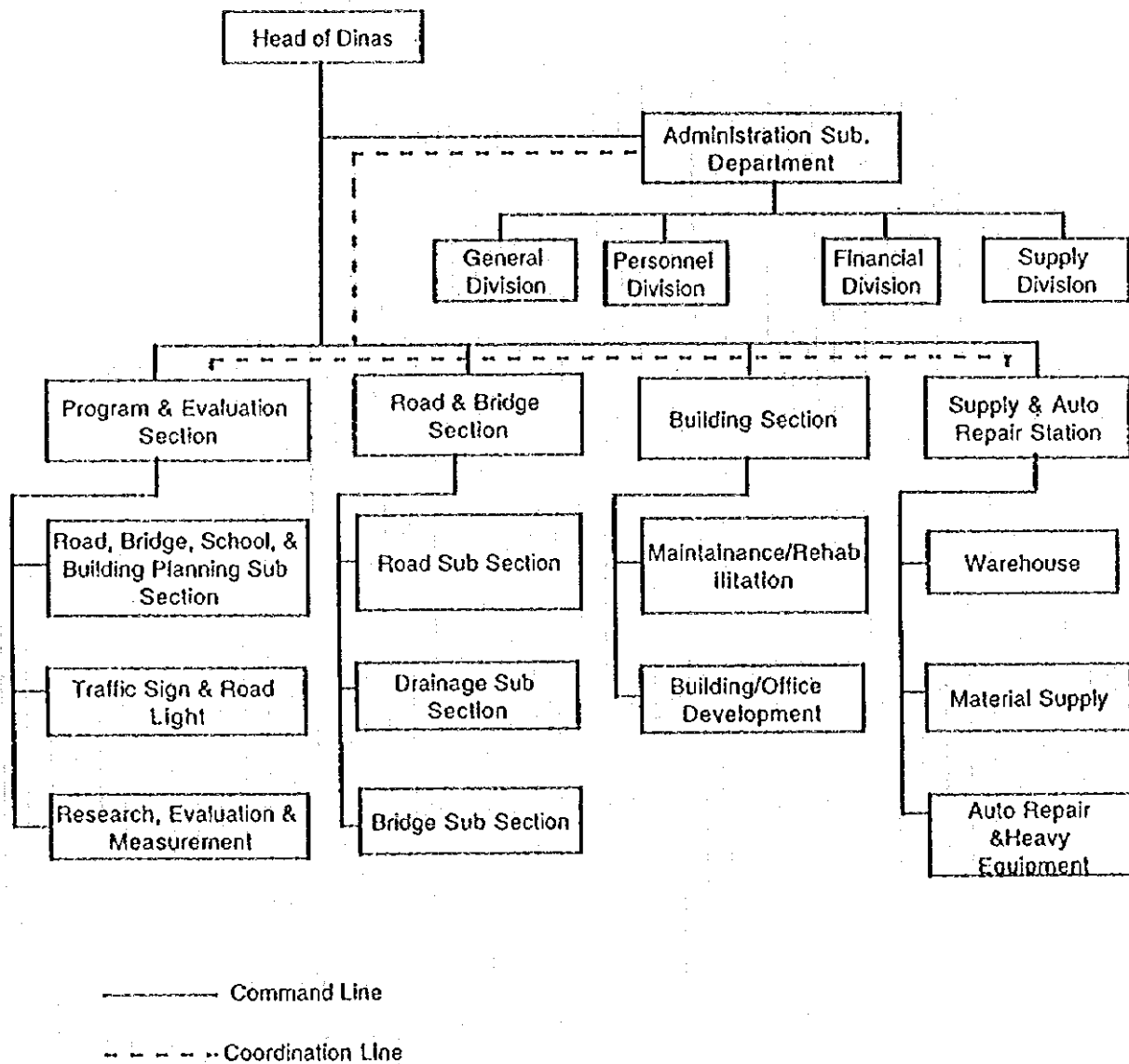


FIG. 2.2.27

Organization Chart of Public Work Agency II

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

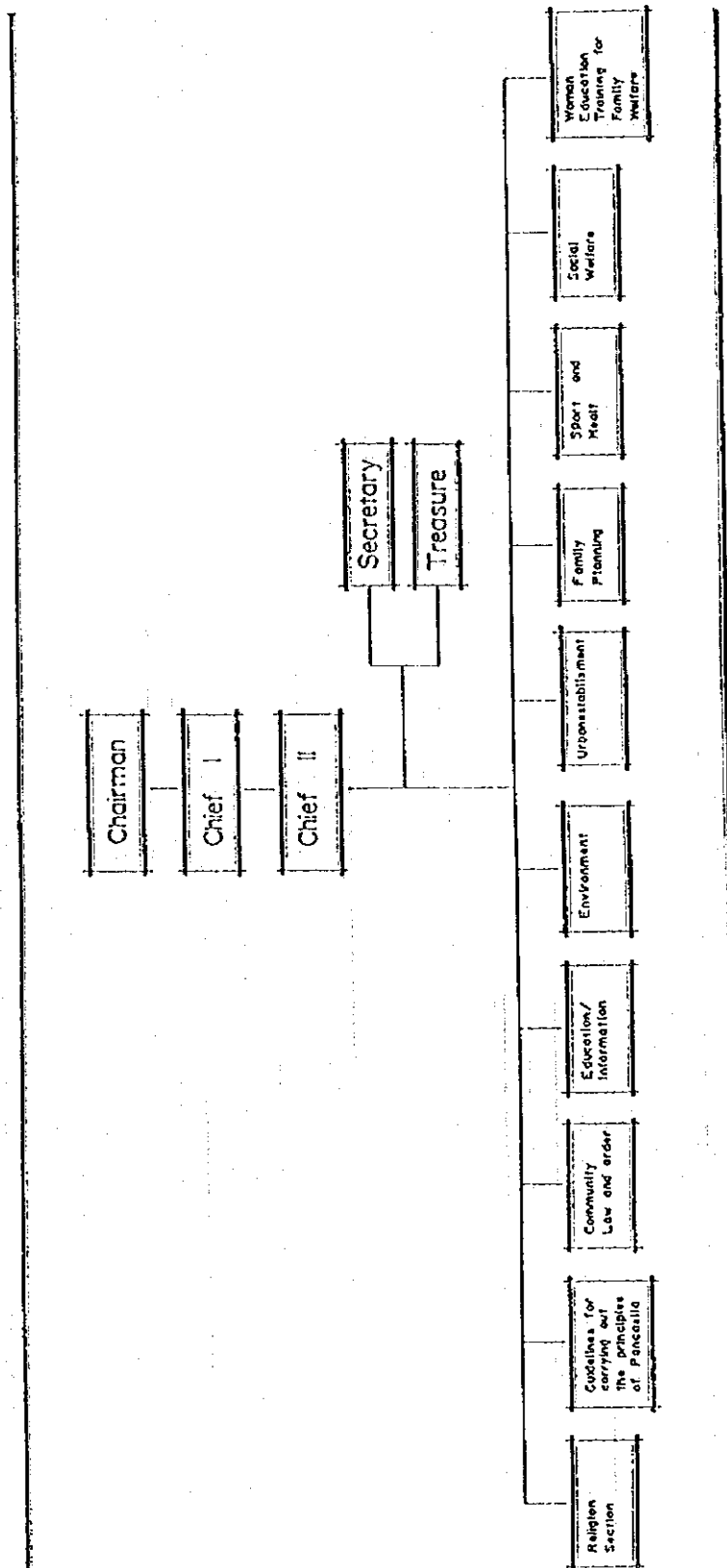


FIG. 2.2.28

Structure of LKMD

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA

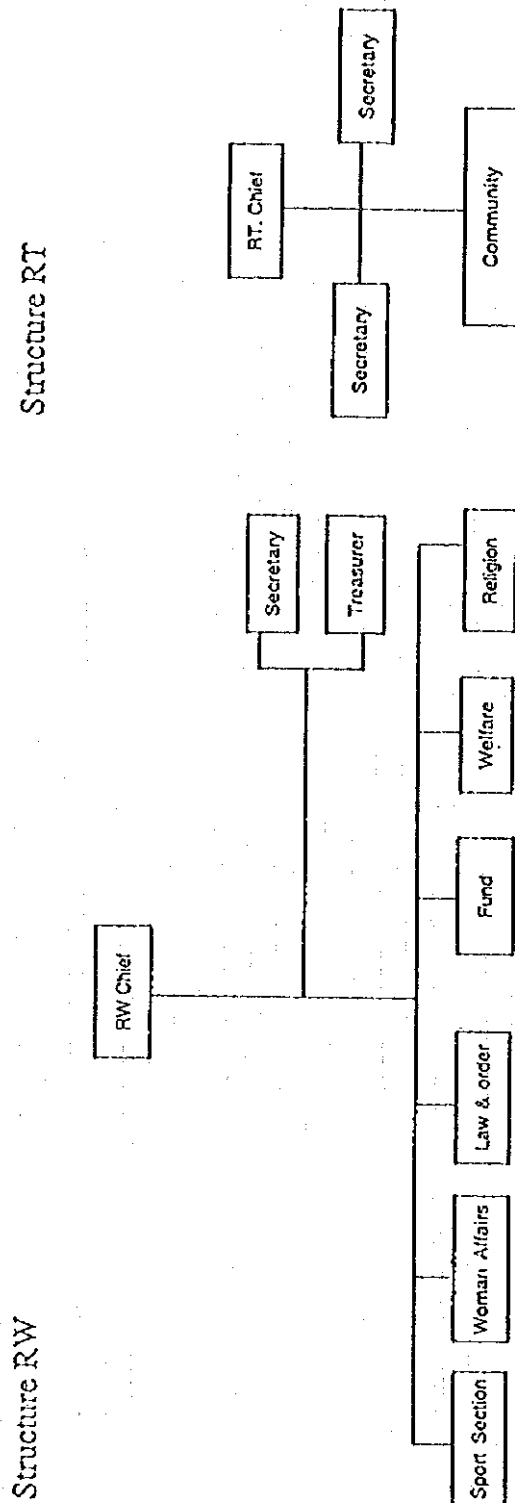


FIG. 2.2.29

Structure of RW and RT

MASTER PLAN AND FEASIBILITY STUDY ON WASTEWATER AND SOLID WASTE  
MANAGEMENT FOR THE CITY OF UJUNG PANDANG IN THE REPUBLIC OF INDONESIA