

## 5 Implementation Program and Action Plan

### 5.1 General

The proposal of JICA Study Team for the water resources management of the Brantas can be summarized in six items as shown below :

- A. Establishment of water resources management system
  - A.1: Establishment of MPW administrative line
  - A.2: Clarification of sector responsibility through delegation
  - A.3: Establishment of BWRMC
  - A.4: Consolidation of PKB, PGKS and PJT
- B. Development of corporate management
  - B.1: Transformation from Perum to Persero
  - B.2: Internal managerial reform of PJT:
    - B.2.1: Strengthening of human resources development
    - B.2.2: Establishment of water charge system
    - B.2.3: Establishment of assets management system
    - B.2.4: Improvement of MIS
    - B.2.5: Organizational reform of PJT

Out of the above, items of group A are related to the overall water resources management and those of group B to the corporate management of PJT. Although both of them is important, WRM related matters are recognized to be more urgent. It means that daily O&M jobs and the development works envisaged in the long term are priority. These items of group A are recommended to be completed before PJT shifts to Persero in this implementation program.

For carrying out the implementation program, it is recommended to build a "Management Development Unit" under the President Director. Some details of this Unit will be explained later.

Regarding the budget, all of these proposals is not appropriate to be incorporated in project budget but recognized suitable to be incorporated in annual operation budget for each year. The major budget items may include expenditures for hiring local consultants for task survey, cost of the hardware of MIS, cost for office preparation accompanied by consolidation and expenditures for secretariat of BWRMC for which PJT is assumed to be the secretary.

## 5.2 Implementation Program

The implementation program of organization and management sector is proposed as shown below.

Implementation Program of Organization and Management Sector

Items	Phase I			Phase II		
	1999	2000	2001	2002	2003	2004
A. Establishment of WRM system						
A.1 Establishment of MPW line						
A.2 Clarification of sector responsibility						
A.3 Establishment of BWRMC						
A.4 Preparation for Consolidation						
B. Development of corporate management						
B.1 Preparation for Persero						
B.2 Internal managerial reform						
B.2.1 HRD strengthening						
B.2.2 Water charge system						
B.2.3 Assets management						
B.2.4 MIS improvement						
B.2.5 Reform of organization						

According to the master schedule that

- the New PJT after the consolidation of PKB, PGKS and PJT will start from 2002 and
- the Persero Jasa Tirta will start from 2005,

two phases are assumed as shown below:

Phase I : 1999-2001 Period for preparation for the consolidation

Phase II: 2002-2005 Period for preparation for Persero shifting

As stated earlier, the establishment of water resources management system is priority matters. It is to be completed before PJT is transformed to Persero.

Regarding the preparation for Persero shifting, it has to be completed by the end of 2004. As for the internal managerial reform, the reform of organization is the base of the whole reforms. It should be studied in detail based on the clear perspectives of the future PJT. The human resources development should be emphasized most among all the future programs. It will take long time before getting the fruits and so it is scheduled starting in the first year and last for six years with the concentration in the first three years. Other reform items e.g. MIS improvement, assets management and water charge system are required to be completed according to these sequences. The arrangement for cost allocation has to forgo before building the water charge system.

### 5.3 Action Plan

#### 5.3.1 Management Development Unit

As suggested earlier in this sub-section, "Management Development Unit" (MDU) is recommended to be built under the President Director. The Unit has major three purposes: (i) to prepare for the establishment of WRM system, (ii) to prepare for the establishment of managerial development of PJT and (ii) to monitor the achievement of the Comprehensive Plan for WRM in the Brantas. For the third purpose, the Unit may continue to exist even after 2005 with a smaller scale staffs. The component of the Unit is as shown hereunder.

Component of Management Development Unit

Items	Component of Management Development Unit						
	B. of Corp. Plan	B. of Tech Plan	Div. of O&M	S. of Legal	B. of HRD	S. of MIS	S. of Finance
A. Establishment of WRM system							
A.1 Establishment of MPW line		⊙		○			
A.2 Clarification of sector responsibility		⊙	○	○			
A.3 Establishment of BWRMC		○	⊙	○			
A.4 Preparation for Consolidation	○	⊙		○	○		
B. Development of corporate management							
B.1 Preparation for Persero	⊙			⊙			⊙
B.2 Internal managerial reform							
B.2.1 HRD strengthening		○			⊙		
B.2.2 Water charge system							
B.2.3 Assets management						○	⊙
B.2.4 MIS improvement						○	⊙
B.2.5 Reform of organization						⊙	○

Note: ○ : Division/Bureau/Section member of the Management Development Unit  
 ⊙ : Primary responsible member of the MDU for the corresponding item

As shown in the above, seven management units of PJT will consist of the Unit. Preparatory works for each item will be carried out under the task force of these management units. For example, staffs of the Bureau of Technical Planning and the Section for Legal Affairs will be jointly responsible for the preparatory works of the establishment of MPW administrative line. In this case, the Bureau of Technical Planning will be primary responsible for the work. As a matter of natural, four Directors including those for Technical Affairs, Infrastructure, Business Development and Administration and Finance are all responsible for each field and are requested to control and/or give advise to task force of the MDU. The MDU is finally responsible for the President Director.

#### 5.3.2 Preparation for Establishment of WRM System

##### (1) Establishment of MPW Administrative Line

The major preparatory works will include the following:

- 1) To scrutinize all the WRM related tasks being done by agencies related to WRM in the Brantas
- 2) To scrutinize all the WRM related Decrees/Regulations to find which agency should do what tasks

- 3) To prepare a matrix of current WRM tasks vs related agencies
- 4) To prepare a matrix of desirable WRM tasks vs related agencies in which the administrative line of MPW-PJT is clearly established
- 5) To have discussion meetings among the related agencies including MPW, Provincial Government Offices and PJT
- 6) To prepare draft Decrees/Regulations required for implementing the WRM under the administrative line of MPW-PJT

Major elements thereof will be as follows:

- MPW should be finally responsible for WRM in the Brantas.
- This authority is delegated to PJT in daily operations of WRM.
- Based on this delegation, PJT can further delegate its responsibility of implementing daily operation to other related agencies with the approval of MPW.
- Water usage rights should be clearly defined and its licensing authority should be endowed to Director of PPSDA (Directorate of Water Resources Utilization and Control)..

**(2) Clarification of Sector Responsibility through Delegation**

Following the work item (1), the major preparatory works shown below will be needed:

- 1) Delegation of responsibility for implementation will be made from PJT to BRLKT sub-division Brantas and DPKT Dati II for watershed management sector and to BAPEDALDA for water quality management sector.
- 2) For other sectors than the above two, PJT will be directly responsible.
- 3) The demarcation of tasks in the above two sectors between PJT and the two responsibility-delegated agencies has to be clearly defined. The draft agreements should be prepared by MDU and be discussed to reach the mutual consent.
- 4) Finally, inter-ministerial agreement among MPW, Ministry of Forestry and Ministry of Environment would be necessary.

**(3) Establishment of BWRMC**

The major preparatory works of building the Basin Water Resources Management Committee will include the following:

- 1) The establishment of BWRMC should be discussed and recommended at the meeting of PWMC.
- 2) The Decree on the establishment of BWRMC including its scope of tasks should be drafted by MDU and be approved by MPW.
- 3) The member agencies of the BWRMC should be selected. They should include

watershed-related agencies and related offices of Dati II in addition to the member agencies of PWMC.

#### **(4) Consolidation of PKB, PGKS and PJT**

The major preparatory works for the consolidation of PKB, PGKS and PJT will include the following:

- 1) The major requirements for the development, rehabilitation and land rehabilitation and prevention works in the Brantas should be projected for the long term up to 2020.
- 2) Based on the projection, the manpower requirement for both PKB and PGKS is to be projected.
- 3) Taking this opportunity, a task survey which aims to decide the appropriate number of staffs for each task of PJT is recommended to be conducted.
- 4) A proposal of the number of manpower transferring to PKB and PGKS to PJT is to be prepared to submit to MPW for approval.
- 5) At the same time, another proposal for transferring the manpower to other government/private organizations is to be prepared for their re-employment.
- 6) The necessity of moving offices of PKB and PGKS should be studied for decision.
- 7) The necessary procedures and resulted influences for the change of employment status between the government officials and non-government officials should be Investigated.

#### **5.3.3 Development of Corporate Management**

##### **(1) Transformation from Perum to Persero**

The major preparatory works for the transformation from Perum to Persero will include the following:

- 1) To increase the number of staff of the Directorate for Business Development, including those of Bureau of Corporate Management and Bureau of Marketing. To strengthening these staffs is also required.
- 2) In the Bureau of Corporate Planning, the identification of private sector projects and their feasibility study are required to be done. The design thereof is also required with cooperation of Bureau of Design. To search for the fund source of projects is another job of the Bureau.
- 3) In the Bureau of Corporate Management, the operation and management of the completed projects are required to be done. The Bureau will be also responsible for sub-contract arrangement of management to outside companies.
- 4) In the Bureau of Marketing, identification of new projects and exploitation of new market are required.
- 5) Accompanied by the change of the company status, some accounting principles may be changed. The current managed assets will be changed into owned assets of PJT. Some

changes in preparation of financial statements like P/L and B/S may be required. (refer to the Action Plan in "Finance and Budget Planning")

## **(2) Organizational Reform of PJT**

The following four work items in the internal managerial reform of PJT are not explained herein but will be explained in Action Plan of each sector.

- Strengthening of human resources development
- Establishment of water charge system
- Establishment of assets management system
- Improvement of MIS

The organizational reform of PJT is proposed in Figure A12-9 in this chapter. The major objectives thereof are the following:

- 1) The preparation for the consolidation of PKB, PGKS and PJT is already stated in 5.3.2 (4) in this chapter. The Division of Development is newly proposed to be established. In this division, two Sub-divisions of Water Resources and River Improvement will be established for the former PKB and the Sub-Division of Land Conservation will be established for the former PGKS. These three sub-divisions will be established in time for the start of New PJT in 2002.
- 2) Strengthening of environmental conservation will be considered by the new establishment of Division of Environment. In this division, three sub-divisions will be established: Sub-division of Water Quality, Sub-division of Watershed Management and Sub-division of River Environment. Accompanied by this strengthening of environmental area, some increase in the number of environment experts will be required, which is accounted for in the future manpower requirement in HRD sector in this report.
- 3) Strengthening of legal matters and PR sector will be considered by the new establishment of Section of Legal Affairs and Section of Public Relations in the Bureau of Administration. The Section of Legal Affairs will play an utmost important role in every aspects of establishing WRM system as well as development of corporate management. The Section of Public Relations will be responsible for new areas of community and beneficiaries' participation and the communication between water service clients and PJT.
- 4) The Section of MIS will be newly established in the Bureau of Finance. The management finance has been so far nominal in the PJT organization. This new section of MIS will cover not only the area of management finance but also that of personnel data base and information.

- 5) The preparation for the transformation from Perum to Persero will be done in time for the start of Persero Jasa Tirta in 2005. The Directorate for Business Development will be established in conformity with the internal managerial reform which is scheduled in the initial stage of the Action Plan. However, the number of the staff thereof will not be required so many before 2002. The preparation for Persero shifting will be start essentially after 2002.

Table A12-1 Organizations related to the Water Resources Management in the Brantas(1/3)

	Name of Organization			Year of Estab.	Main Tasks & Responsibilities
1	DGWRD (MPW)	Direktorat Jenderal Pengairan	Directorate General of Water Resources Development (M. of Public Works)	1945	-Responsible for planning, developm't and managem't of water resources in the nation excluding ground water -Responsible for all river works and flood control in rural and urban areas and for drainage works in urban areas.
2	DFU Cipta Karya		Directorate General of Human Settlements (M. of Public Works)	1945	-Responsible for planning and developm't of human settlement in rural and municipal areas.
3	Kanwil PU	Kantor Wilayah PU Prop. Dati I. Jatim	East Java Representative Office of MPW	1950	-Give technical assistance to the related Provincial Gov't Units in the fields of MPW except irrigation.
4	PKB	Projek Pembangunan Wilayah Sungai Kali Brantas	Brantas River Basin Development Project	1961	-Responsible for planning, design and construction of river structures in the Brantas. -Responsible for river improvement works in the Brantas.
5	PGKS	Projek Pengendalian Lahar G. Kelud dan G. Semeru	Volcanic Disaster Prevention Project of Mt. Kelud and Mt. Semeru	1969	-Responsible for planning, design and construction of sabo facilities and maintenance works of tributary rivers in the Mt. Kelud area.
6	PJT	Perum Jasa Tirta	Jasa Tirta Public Corporation	1990	-Responsible for O&M of W.R. infrastructures, W.R. dealings, River basin management and Rehabilitation of W.R. infrastructures
7	DGRLR (M. of Forestry)		Directorate General of Reforestation and Land Rehabilitation (M. of Forestry)		-Responsible for soil conservation and land rehabilitation inside natural forest areas and production forest areas
8	Kanwil Kehutanan	Kantor Wilayah Kehutanan Prop. Dati I. Jatim	East Java Representative Office of M. of Forestry	1950	-Responsible for technical recommendation and guidance to watershed related agencies in the Province including long term planning (25 years) of land rehabilitation and soil conservation
9	BRLKT	Balai Rehabilitasi Lahan dan Konservasi Tanah	Agency of Land Rehabilitation and Soil Conservation, Surabaya	1950	-Responsible for middle term(5 years) planning of land rehabilitation and soil conservation based on the long term plan of Kanwil. Responsible for reforestation, construction of check dams and demonstration farms.
10	DPKT	Dinas Perhutanan Konservasi Tanah	Forestry and Soil Conservation Service, East Java		-Responsible for implementation of reforestation and soil conservation -Preparing annual program based on the middle term planning of BRLKT
11	Perum Perhutani		Forestry Public Corporation		-Responsible for the same activities as DPKT within the area in charge. -Implementing commercial forestry business.
12	Kanwil Pertanian	Kantor Wilayah Pertanian Prop. Dati I. Jatim	East Java Representative Office of M. of Agriculture	1950	-Responsible for guidance and monitoring of agriculture, horticulture, livestock and fishery productions. -Responsible for training and agricultural extension service.
13	Dinas Pengairan	Dinas PU Pengairan Daerah Prop. Dati I. Jatim.	Provincial Water Resources Service, East Java (Secretariat of W.M.C)	1945	-Responsible for development and O&M of irrigation facilities from primary to secondary canals. -Responsible for the same to the point of diversion for other users than irrigation.



Table A12-1 Organizations related to the Water Resources Management in the Brantas(2/3)

Name of Organization			Year of Estab.	Main Tasks & Responsibilities	
14	Dinas Pertanian	Dinas Pertanian Daerah Prop. Dati. I Jatim.	Provincial Agriculture Service, East Java	1945	-to identify problems, give guidance, carry out spatial mapping and to carry out planning on the utilization of land resources so as to be appropriate with agroecosystem -to provide reference for monitoring plant intruder organism.
15	PIJT	Projek Irigasi Jawa Timur	East Java Irrigation Project		-Irrigation development project managed directly by DGWRD -Major efforts are concentrated into village irrigation and rehabilitation of the existing irrigation facilities recently
16	PIAT	Projek Irigasi Air Tanah	East Java Ground Water Irrigation Project		-Irrigation development project using ground water development -Most of sub-projects are small scale of less than 50 ha of command area -Managed directly by DGWRD
17	DPERIKAN	Dinas Perikanan Daerah Prop. Dati. I Jatim.	Provincial Fishery Service, East Java	1945	-Responsible for regulation, controlling and assesment of fishery development -Responsible for maintenance of main canals (District Gov't is responsible for maintenance of 2ndary canals)
18	MIT	Kementerian Perindustri dan Perdagangan	Ministry of Industry and Trade	1945	-Responsible for managing and controlling of all industries and trade in Indonesia
19	DPRIND	Dinas Perindustri Daerah Prop. Dati. I Jatim.	Provincial Industry Service, East Java	1945	-To provide technical guidance to small industries in the field of production, marketing and environmental protection.
20	MME	Kementerian Pertambangan dan Energi	Ministry of Mining and Energy	1945	-Gives technical advice to provincial gov't -Oversees PT PLN activities in coordination with DGWRD which controls water licensing for hydro use. -Gives approval of G.W.
21	DISTAMB	Dinas Pertambangan Daerah Prop. Dati. I Jatim.	Provincial Mining Service, East Java	1945	-Determines the allocation and extraction schedules after getting approval of MME.
22	MOE	Kementerian Lingkungan Hidup	Ministry of Environment	1966	-Responsible for policy making of environmental prevention -Technical advice and support to related government agencies -Management of environmental programs to be implemented by government agencies
23	BAPEDAL	Badan Pengendalian Dampak Lingkungan	Environmental Impact Management Agency	1991	-To assist the President in managing environmental impacts including prevention of and control over pollution and environmental damage -To assist the President in rehabilitating environment quality
24	BAPEDALDA	BAPEDAL Daerah Prop. Dati I Jatim.	Provincial Agency for Environmental Impact Management	November 1997	-Had replaced BBLH -Responsible for monitoring, inspecting and controlling quality of water, air and soil. Coordinating for environmental damages
25	BBLH	Biro Bina Lingkungan Hidup Prop. Dati. I Jatim.	Bureau of Environmental Service, East Java	1945- Octo-ber 1997	-Responsible for coordination of implementing environmental programs at the provincial level as secretariate of the committee for controlling and overcoming environmental pollution in East Java -Had been reformed to BAPEDALDA
26	MOH		Ministry of Health		-Responsible for managing and controlling of public health services in Indonesia
27	Dinas Kebersihan		Sanitation Service, East Java		-Responsible for clean water demand in East Java Province

**Table A12-1 Organizations related to the Water Resources Management in the Brantas(3/3)**

Name of Organization			Year of Estab.	Main Tasks & Responsibilities	
28	MHA	Kementerian Dalam Negeri	Ministry of Home Affairs	1945	-Responsible for implementation of public services in Indonesia
29	BAPPEDA Local Govt.	Badan Perencanaan Pembangunan Daerah	Provincial Development Planning Agency (TK 1 & TK IIF)	1945	-Responsible for detailed land use planning at the provincial level.
30	PT PLN	Perusahaan Terbatas Persahaan Listrik Negara	State Electric Power Company	1945	-Responsible for power generation, transmission and distribution of electricity -Responsible for planning, construction and operation of power supply facilities
31	PDAM Surabaya and Sidoarjo	Persahaan Daerah Air Minum	Regional Drinking Water Supply Company (Surabaya and Sidoarjo)	1976	-Responsible for providing municipal and industrial water. -Surface water of the Brantas is withdrawn for Surabaya and Sidoarjo and mainly ground water is pumped up for other areas than these two.
32	Dam Safety Unit		Dam Safety Unit		-Responsible for preventing negative impact of dams in Indonesia
33	PWMC		Provincial Water Management Committee		-To assist Governor in coordinating water management of the Province -To give technical support and recommendation to Governor in relation to water coordination problems
34	SATKORLAK PB	Satuan Koordinasi Pelaksana Penanggulangan Bencana	Disaster Countermeasure Coordination Unit		-Be in charge of coordinating and controlling disaster countermeasure activities in East Java. -Functions are to perform coordination, advice, direction and guidance covering planning, implementation as well as evaluation.

**Other related (indirectly) Organizations**

35	DRK	Dinas Kebersihan Kotamadya Dasi II Surabaya	Public Cleansing Service, Kotamadya Surabaya		-Responsible for domestic and industrial wastes disposal, incinerator plant, night soil treatment plant, composting and recycling in the administrative area of Kotamadya Surabaya
36	BPPT	Badan Pengkajian dan Penerapan Teknologi	Technology Evaluation and Application Agency		-Preparing human resources to take innovative steps for future demand

Table A12-2 Tasks and Duties of Agencies related to W.R.M. in the Brantas (Present Status)(1/2)

● Signer & Implementing Agency    ○ Cooperating Agency  
 ★ Signaling Agency                      ☆ Coordinating Agency  
 ○ Implementing Agency                      △ Related Agency

Tasks and duties	Category of agency	Agencies related to W.R.M. in the Brantas River Basin																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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III 2.4	Industrial water																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 2.5	River maintenance water																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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III 3	Water resources																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 3.1	Existing surface waters																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 3.2	Existing ground waters																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 3.3	Water resources development plans																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 3.4	Management of implementation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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III 4.1	Present water balance																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 4.2	Mid term water balance																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 4.3	Long term water balance																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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III 5.1	Regulation of existing LWMS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 5.2	Rehabilitation plans																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 5.3	Expansion/Upgrading plans of LWMS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 5.4	Operation of LWMS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 5.5	Coordination of water allocation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
III 5.6	Regulation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

Table A12-2 Tasks and Duties of Agencies related to W.R.M. in the Brantas (Present Status)(2/2)

- Signaling Agency
- Consulting Agency
- ★ Signaling Agency
- ☆ Consulting Agency
- △ Engineering Agency
- △ External Agency

Tasks and duties	Agencies related to W.R.M. in the Brantas River Basin																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Category of Agency																							
<b>IV. WATER QUALITY MANAGEMENT</b>																							
<b>IV.1 River water</b>																							
IV.1.1	Regulations (Legislation)																						
IV.1.2	Water quality control																						
IV.1.3	Water quality monitoring																						
<b>IV.2 Domestic waste water</b>																							
IV.2.1	Regulations (Legislation)																						
IV.2.2	Water quality control (Treatment)																						
IV.2.3	Water quality monitoring																						
IV.2.4	Sludge and night soil control																						
<b>IV.3 Industrial waste water</b>																							
IV.3.1	Regulations (Legislation)																						
IV.3.2	Waste water quality control (Treatment)																						
IV.3.3	Waste water quality monitoring																						
IV.3.4	Sludge control (Disposal)																						
<b>V. RIVER ENVIRONMENT</b>																							
<b>V.1 Land use in river catchment area</b>																							
V.1.1	Regulations (Legislation)																						
V.1.2	Operation and maintenance																						
V.1.3	Control and plan																						
<b>V.2 Biot in the river area</b>																							
V.2.1	Regulations (Legislation)																						
V.2.2	Conservation activity																						
V.2.3	Control and plan																						
<b>V.3 Recreation in river space</b>																							
V.3.1	Regulations (Legislation)																						
V.3.2	Operation and maintenance																						
V.3.3	Control and plan																						
<b>VI. W.R.M. MASTER PLAN</b>																							
<b>VII. INSTITUTION</b>																							
VII.1	Water/river law																						
VII.2	Water right																						
<b>VIII. ORGANIZATION</b>																							
VIII.1	Management bodies																						
VIII.2	Community participation																						

Note: "Others" A: DKK (Public Cleaning Service, Kotamadya Surabaya)  
 B: BPPT (Technology Evaluation and Application Agency)  
 "Category of Agency": Refer to 1.1 Categories of Agencies

Table A12-3 Tasks and Duties of Agencies related to W.R.M. In the Brantas (Desirable Status) (1/3)

- Supervising Agency
- Cooperating Agency
- ★ Supervising Agency
- ☆ Coordinating Agency
- Implementing Agency
- △ Infused Agency

Tasks and duties	Agencies related to W.R.M. in the Brantas																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Category of agency	1 DIPONEGARA	2 DIPONEGARA	3 KAWALI PU	4 DIPONEGARA	5 KAWALI PU	6 KAWALI PU	7 KAWALI PU	8 KAWALI PU	9 KAWALI PU	10 KAWALI PU	11 KAWALI PU	12 KAWALI PU	13 KAWALI PU	14 KAWALI PU	15 KAWALI PU	16 KAWALI PU	17 KAWALI PU	18 KAWALI PU	19 KAWALI PU	20 KAWALI PU	21 KAWALI PU	22 KAWALI PU	23 KAWALI PU
Basin Water Management Committee																							
<b>I. WATERSHED MANAGEMENT (Mountainous area)</b>																							
I.1 Water conservation																							
I.1.1 Regulations (Legislation)																							
I.1.2 Land use inventory survey																							
I.1.3 Evaluation of land use																							
I.1.4 Land development plan																							
I.1.5 Implementation																							
I.1.6 Commercial forest management																							
I.2 Landslide and erosion prevention management																							
I.2.1 Regulations (Legislation)																							
I.2.2 Regular inspection survey																							
I.2.3 Landslide inventory survey																							
I.2.4 Landslide prevention plans																							
I.2.5 Implementation																							
I.3 Sediment control																							
I.3.1 Regulations (Legislation)																							
I.3.2 Sedimentation in rivers/reservoirs																							
I.3.3 Countermeasures of sedimentation																							
I.3.4 Implementation																							
I.4 G. Kelad debris control																							
I.4.1 Regulations (Legislation)																							
I.4.2 Sedimentation in the existing Sand pocket																							
I.4.3 Countermeasures of sedimentation																							
I.4.4 Implementation																							
<b>II. FLOOD MANAGEMENT (incl. River Management)</b>																							
II.1 Regulations (Legislation)																							
II.2 Flood control works																							
II.2.1 Existing flood control works																							
II.2.2 Flood forecasting and warning system																							
II.2.3 Rehabilitation plans																							
II.2.4 Flood control plans																							
II.2.5 Implementation																							
II.3 Flood damages management																							
II.3.1 Flood forecasting/warning operation																							
II.3.2 Reservoir operation rule																							
II.3.3 Rescue service																							
II.3.4 Flood damage report																							
II.3.5 Implementation																							
<b>III. WATER SUPPLY MANAGEMENT</b>																							
III.1 Regulations (Legislation)																							
III.2 Water supply																							
III.2.1 Domestic water																							
III.2.2 Irrigation water																							
III.2.3 Backfish fisheries water																							
III.2.4 Industrial water																							
III.2.5 River maintenance water																							
III.2.6 Hydro-electric power																							

Table A12-3 Tasks and Duties of Agencies related to W.R.M. in the Brantas (Desirable Status) (2/3)

- Supervising Agency
- Cooperating Agency
- ★ Supervising Agency
- ☆ Coordinating Agency
- Implementing Agency
- △ Informed Agency

Tasks and duties	Agencies related to W.R.M. in the Brantas																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Category of Agency	1 DODWRD	2 DPU Gopa Kerwa	3 DPT Jawa Tengah	4 DAS SPPU	5 DORL M. of Forest	6 DAN Kebudayaan (Forestry)	7 DAS Kebudayaan (Forestry)	8 DAS Kebudayaan (Forestry)	9 DAS Kebudayaan (Forestry)	10 DAS Kebudayaan (Forestry)	11 DAS Kebudayaan (Forestry)	12 DAS Kebudayaan (Forestry)	13 DAS Kebudayaan (Forestry)	14 DAS Kebudayaan (Forestry)	15 DAS Kebudayaan (Forestry)	16 DAS Kebudayaan (Forestry)	17 DAS Kebudayaan (Forestry)	18 DAS Kebudayaan (Forestry)	19 DAS Kebudayaan (Forestry)	20 DAS Kebudayaan (Forestry)	21 DAS Kebudayaan (Forestry)	22 DAS Kebudayaan (Forestry)	23 DAS Kebudayaan (Forestry)
<b>Basin Water Management Committee</b>																							
III.3 Water resources																							
III.3.1 Existing surface waters	★		○	○																			
III.3.2 Existing ground waters	★		○	○																			
III.3.3 Water resources development plans	★		○	○																			
III.3.4 Management of implementation	★		○	○																			
III.4 Water balance																							
III.4.1 Present water balance	★		○	○																			
III.4.2 Mid-term water balance	★		○	○																			
III.4.3 Long-term water balance	★		○	○																			
III.5 Low water management system (LWMS)																							
III.5.1 Regular inspection of existing LWMS	★		○	○																			
III.5.2 Rehabilitation plans	★		○	○																			
III.5.3 Expansion/Upgrading plans of LWMS	★		○	○																			
III.5.4 Operation of LWMS	★		○	○																			
III.5.5 Coordination of water allocation	★		○	○																			
III.5.6 Regulation	★		○	○																			
<b>IV. WATER QUALITY MANAGEMENT</b>																							
IV.1 Regulations (Legislation)																							
IV.1.1 River water	★																						
IV.1.2 Pollution sources																							
IV.2 Planning and coordination																							
IV.2.1 Control and plan	★																						
IV.2.2 Waste water quality control (Treatment)																							
IV.3 Water quality monitoring (reporting)																							
IV.3.1 River water	★		○	○																			
IV.3.2 Pollution sources (Waste water)																							
IV.4 Research and development																							
IV.4.1 River water																							
IV.4.2 Pollution sources (Waste water)																							
IV.5 Water quality test (sampling and analysis)																							
IV.5.1 River water	★		○	○																			
IV.5.2 Pollution sources (Waste water)																							
<b>V. RIVER ENVIRONMENT</b>																							
V.1 Land use in river area (and surroundings)																							
V.1.1 Regulations (Legislation)	★																						
V.1.2 Operation and maintenance	★																						
V.1.3 Control and plan	★																						
V.2 Biota in the river area																							
V.2.1 Regulations (Legislation)																							
V.2.2 Conservation activity																							
V.2.3 Control and plan																							
V.3 Recreation in river space																							
V.3.1 Regulations (Legislation)	★																						
V.3.2 Operation and maintenance	★																						
V.3.3 Control and plan	★																						

Table A12-3 Tasks and Duties of Agencies related to W.R.M. in the Brantas (Desirable Status) (3/3)

- Supervising Agency
- Cooperating Agency
- ★ Supervising Agency
- ☆ Coordinating Agency
- Implementing Agency
- △ Infused Agency

Tasks and duties	Agencies related to W.R.M. in the Brantas																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Category of agency	1 DGCWARD	2 DPU Cipta Karya	3 KAWALI PU	4 DPT (Jawa Timur)	5 DGRBK (K. of Forest)	6 KANAWI (Kebunhan Forestry)	7 DITK (K. of Health Agency)	8 DPRK (Perikanan/Agriculture)	9 DPRK (Perikanan)	10 DPERK (Perikanan)	11 DPRK (Perikanan)	12 DPRK (Perikanan)	13 DPRK (Perikanan)	14 DPRK (Perikanan)	15 DPRK (Perikanan)	16 DPRK (Perikanan)	17 DPRK (Perikanan)	18 DPRK (Perikanan)	19 DPRK (Perikanan)	20 DPRK (Perikanan)	21 DPRK (Perikanan)	22 DPRK (Perikanan)	23 DPRK (Perikanan)
Basin Water Management Committee																							
VI. W.R.M. MASTER PLAN	☆																						
VII. INSTITUTION																							
VII.1 Water river law	●																						
VII.2 Water right	●																						
VIII. ORGANIZATION																							
VIII.1 Management bodies	●																						
VIII.2 Community/beneficiary participation	●																						

Note: - "x" in the column of "BWMC" shows those work duties discussed at BWMC.  
 - "x" in the row of "BWMC" shows proposed member agencies of BWMC.  
 - For "Category of Agency", refer to I.1 Categories of Agencies.

Table A12-4 Major Indices of W.R.M. : POJ and PJT (1995)

		(Rp. million)	
	Items	POJ	PJT
<b>(1) Management Indices</b>			
1.	Business Income	32,167	18,765
2.	Business expense	25,191	16,389
3.	Non-business income	7,958	1,627
4.	Non-business expense	7,728	4
5.	Profit before tax	7,204	3,999
6.	Total asset	76,048	27,718
7.	Capital and reserve	53,801	19,291
8.	O & M Cost	3,872	7,832
9.	1997 Annual Budget	61,591	20,578
10.	Estimated value of managed assets	n.a.	1,711,440
11.	Number of Employees	3,015	436
	Academic background		
	-Technical	589	237
		19.5%	54.4%
	-Administrative	2,372	162
		78.7%	37.2%
	-Economic	54	37
		1.8%	8.5%
<b>(2) Efficiency Indices</b>			
12.	Profit per employee	2.39	9.17
13.	Profit per O & M Cost(times)	1.86	0.51
14.	O&M Cost to Managed Assets(%)	n.a.	0.46%
15.	Cost per Utilized Water(Rp/m3) (=9/18)	12	7
<b>(3) Physical Aspects</b>			
16.	Catchment Area	11,000 km <sup>2</sup>	11,800 km <sup>2</sup>
17.	Number of Dams	1	6
18.	Utilized water (mil.m3/year)	5,300	2,831

Note:

POJ: Perum Otoritas Jatiluhur (Jatiluhur Authority Public Corporation)

PJT: Perum Jasa Tirta (Jasa Tirta Public Corporation)



Table A12-5 Data on Rivers in Jawa Island

Name of River	Code of River Basin	River Basin	Population	Basin Area(km <sup>3</sup> )	Density
Ciujung-Cilimin	2011	Labuhan Merak	1,163,880	2,474	470
	2012	Ciujung	1,198,345	2,499	480
			<b>2,362,225</b>	<b>4,973</b>	<b>475</b>
Cisadane-Ciliwung	2020	Cisadane-Ciliwung	<b>2,308,986</b>	<b>4,012</b>	<b>3297</b>
Cisadeg-Cikuningan	2030	Cisadeg-Cikuningan	<b>4,579,189</b>	<b>10,121</b>	<b>452</b>
Citarum	2041	Citarum Hulu	5,321,014	4,073	1306
	2042	Citarum Hilir	6,817,067	7,994	853
			<b>12,138,081</b>	<b>12,067</b>	<b>1006</b>
Cimanuk	2051	Cimanuk	2,897,001	4,341	667
	2052	Cisanggarung	3,041,132	2,573	1182
			<b>5,938,133</b>	<b>6,914</b>	<b>859</b>
Ciwulan	2060	Ciwulan	<b>3,933,323</b>	<b>6,510</b>	<b>604</b>
Citanduy	2070	Citanduy	<b>3,339,505</b>	<b>5,226</b>	<b>639</b>
Pemali Comal	2080	Pemali Comal	<b>4,843,237</b>	<b>4,936</b>	<b>981</b>
Serayu	2091	Serayu	3,062,524	3,769	813
	2092	Lululo Dulang	2,754,415	3,681	748
			<b>5,816,939</b>	<b>7,450</b>	<b>781</b>
Jratun Seluna	2101	Buyaran	3,395,668	3,113	1091
	2102	Serang Lusi	2,398,834	3,794	632
	2103	Geris Juana	2,542,573	3,558	715
		<b>8,337,075</b>	<b>10,465</b>	<b>797</b>	
Progo-Opak-Oyo	2111	Progo	2,353,692	2,762	852
	2112	Opak-Oyo	2,450,555	2,622	935
			<b>4,804,247</b>	<b>5,384</b>	<b>892</b>
Bengawan Solo	2121	Bengawan Solo-hulu	7,908,103	10,010	790
	2122	Bengawan Solo-hilir	4,314,307	7,989	540
	2123	Grindulu Panggul	576,336	1,607	359
		<b>12,798,746</b>	<b>19,606</b>	<b>653</b>	
K.Brantas	2131	K.Brantas-hilir	7,983,782	6,275	1272
	2132	K.Brantas-hulu	4,442,857	5,830	762
	2133	Luminu Penguluran	1,766,030	3,073	575
		<b>14,192,669</b>	<b>15,178</b>	<b>935</b>	
Pekalen Sampean	2141	Pekalen Sampean	2,997,005	4,759	630
	2142	Bedadung	2,816,536	5,142	548
	2143	Bajulputih	2,230,428	5,068	440
		<b>8,043,969</b>	<b>14,969</b>	<b>537</b>	
Madura	2150	Madura	<b>3,163,719</b>	<b>5,669</b>	<b>558</b>

Source: JICA, 1993. "The Study for Formulation of Irrigation Development Program in The Public of Indonesia"

Table A12-6 Water Resources Management Tasks by PJT's Technical Sections / Groups in Charge (1/2)

Task	(B) Bureau Sections of PJT																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Tasks required for WRM</b>																				
<b>I. WATERSHED MANAGEMENT (Mountainous area)</b>																				
<b>I.1 Land use management</b>																				
I.1.1																				
I.1.2																				
I.1.3																				
I.1.4																				
I.1.5																				
I.1.6																				
<b>I.2 Land slide and erosion prevention management</b>																				
I.2.1																				
I.2.2																				
I.2.3																				
I.2.4																				
I.2.5																				
<b>I.3 Sediment control</b>																				
I.3.1																				
I.3.2																				
I.3.3																				
I.3.4																				
<b>I.4 G Reforestation control</b>																				
I.4.1																				
I.4.2																				
I.4.3																				
I.4.4																				
<b>II. FLOOD MANAGEMENT (incl. River Management)</b>																				
<b>II.1 Regulations (Legislation)</b>																				
<b>II.2 Flood control works</b>																				
II.2.1																				
II.2.2																				
II.2.3																				
II.2.4																				
II.2.5																				
<b>II.3 Flood damage management</b>																				
II.3.1																				
II.3.2																				
II.3.3																				
II.3.4																				
II.3.5																				
<b>III. WATER SUPPLY MANAGEMENT</b>																				
<b>III.1 Regulations (Legislation)</b>																				
<b>III.2 Water supply</b>																				
III.2.1																				
III.2.2																				
III.2.3																				
III.2.4																				
III.2.5																				
III.2.6																				
<b>III.3 Water resources</b>																				
III.3.1																				
III.3.2																				
III.3.3																				
III.3.4																				
<b>III.4 Water balance</b>																				
III.4.1																				
III.4.2																				
III.4.3																				
<b>III.5 Low water management system (LWMS)</b>																				
III.5.1																				
III.5.2																				
III.5.3																				
III.5.4																				

Table A12-6 Water Resources Management Tasks by PJT's Technical Sections / Groups in Charge (2/2)

Task	(A)	(B) Bureau/Section of PJT																				KCI
		1. Planning & Policy	2. Regulatory	3. Enforcement	4. Compliance	5. Monitoring	6. Research	7. Education	8. Outreach	9. Administration	10. Finance	11. Information	12. Legal	13. Public Affairs	14. Safety	15. Security	16. Maintenance	17. Construction	18. Operations	19. Support	20. Other	
Tasks required for WRM																						
III.55	Construction of water distribution																					
III.56	Regulation																					
<b>IV. WATER QUALITY MANAGEMENT</b>																						
<b>IV.1 River water</b>																						
IV.11	Regulation (Regulation)																					
IV.12	Water quality control																					
IV.13	Water quality monitoring																					
<b>IV.2 Domestic waste water</b>																						
IV.21	Regulation (Regulation)																					
IV.22	Water quality control (Treatment)																					
IV.23	Water quality monitoring																					
IV.24	Sediment and silt control																					
<b>IV.3 Industrial waste water</b>																						
IV.31	Regulation (Regulation)																					
IV.32	Water quality control (Treatment)																					
IV.33	Water quality monitoring																					
IV.34	Sediment/Disposal																					
<b>V. RIVER ENVIRONMENT</b>																						
<b>V.1 Land use in river area and surroundings</b>																						
V.1.1	Regulation (Regulation)																					
V.1.2	Operation and maintenance																					
V.1.3	Control and plan																					
<b>V.2 Bank in the river area</b>																						
V.2.1	Regulation (Regulation)																					
V.2.2	Conservation activity																					
V.2.3	Control and plan																					
<b>V.3 Recreation in river space</b>																						
V.3.1	Regulation (Regulation)																					
V.3.2	Operation and maintenance																					
V.3.3	Control and plan																					
<b>VI. WRM MASTER PLAN</b>																						
<b>VII. INSTITUTION</b>																						
VII.1	Water service																					
VII.2	Water right																					
<b>VIII. ORGANIZATION</b>																						
VIII.1	Management bodies																					
VIII.2	Community participation																					

Note: 1) Denotation for (A) is as shown below.  
 ● Supervising & Implementing    ○ Coordinating  
 \* Supervising    ⊕ Coordinating  
 ⊙ Implementing    △ Informal  
 2) Denotation for (B) and (C) is as shown below.  
 A. Being implemented  
 B. Partly implemented  
 C. Not implemented

Revised from Table B1.5.2 in Interim Report.

**Table A12-7 Responsibilities of Directors, Bureaus and Divisions of PJT (1/3)**

<b>I. PRESIDENT DIRECTOR</b>
<ul style="list-style-type: none"><li>- Effective and efficient management of the company under the guidance of the Minister of Public Works</li><li>- Official duties as required by Government Laws</li></ul>
<b>II. DIRECTOR FOR TECHNICAL AFFAIRS</b>
<ul style="list-style-type: none"><li>- Setting targets and strategy of the company assisting President Director</li><li>- Conducting research and development activities</li><li>- Conducting planning, work program arrangement, work plans and company budget</li><li>- Conducting implementation control, rehabilitation of legal aspects and publication</li><li>- Conducting other tasks determined by Board of Directors</li></ul>
<b>A. Bureau of Research and Development</b>
<ul style="list-style-type: none"><li>- Formulating Long term plan of the company</li><li>- Formulating River basin master plan</li><li>- Formulating Water pollution prevention master plan</li><li>- Conducting studies:<ul style="list-style-type: none"><li>-Management development</li><li>-Technology</li><li>-Preservation/optimization of water resources</li></ul></li><li>- Making system procedure and management information system (MIS)</li><li>- Legal matters</li><li>- Making seminar materials and publication</li><li>- Improving the corporate image</li><li>- Technical guidance of laboratory.</li></ul>
<b>B. Bureau of Planning and Controlling</b>
<ul style="list-style-type: none"><li>- Preparing Work Plan and Company Budget</li><li>- Preparing Quarterly Work Program for each unit</li><li>- Designing construction works and giving technical recommendation</li><li>- Managing equipment of FFWS, telecommunication and main computer</li><li>- Supervising and controlling the implementation of quarter/annual programs</li><li>- Reporting the evaluation on company operation</li><li>- Making O&amp;M manuals</li></ul>
<b>C. Bureau of Corporate Development</b>
<ul style="list-style-type: none"><li>- Making the details of business development and working area</li><li>- Procuring company funding and business partners</li><li>- Establishing new business and marketing its product</li><li>- Preparing institutions</li><li>- Guiding small business and cooperatives</li><li>- Studies<ul style="list-style-type: none"><li>-Working area development</li><li>-Business development</li></ul></li></ul>
<b>D. Counterpart Unit</b>
<ul style="list-style-type: none"><li>- Acting as the counterpart of the consultants studying in Perum Jasa Tirta</li></ul>

**Table A12-7 Responsibilities of Directors, Bureaus and Divisions of PJT (2/3)**

**III DIRECTOR FOR OPERATION**

- Setting targets and strategy of the company assisting President Director
- Managing river basin, water resources infrastructures and company assets.
- Dealing with tourism assets, consulting service, construction service, equipment and other independent units
- Conducting other tasks determined by Board of Directors

**A. Division of Water Service (U/S and D/S)**

- Performing O&M of water and water resources infrastructures
- Monitoring and control of water supply
- Monitoring and control of water quality
- Marketing, distribution, measurement, observation of water service sales to customers
- Monitoring retribution payment
- Preserving water resources and conducting public campaign/Prokasih
- Securing the state assets both owned and managed by the company

**B. Division of Non Water Service**

- Preparing the bidding/contract document for contracting and consulting service jobs and also for equipment rental
- Performing Operation and maintenance of equipment
- Preparing the equipment to support the other division activities
- Implementing the contracting and consulting service jobs
- Implementing equipment rental
- Building and managing independent unit/autonomy and tourism section

**C. Quality Management Unit**

- Conducting the maintenance and rehabilitation in the application of quality system for the consistency of its implementation.
- Performing the improvement to the valid or existing quality system.
- Giving presentations, training and motivating all unit members and the related institutions.
- Reporting the performance of the quality system to the Director Board to be reinvestigated as the inputs for the Management Coordination Meeting and as the basis of the improvement of quality management.

**IV DIRECTOR FOR ADMINISTRATION AND FINANCE**

- Setting targets and strategy of the company assisting President Director
- Conducting operational management and giving the guidance in the field of administration and finance covering fields of finance, staffing and organization, housekeeping, equipment, liaison officers in Jakarta
- Conducting other tasks determined by Board of Directors

**A. Bureau of Finance**

- Making budget and optimizing the fund utilization
- Performing accounting and verification works
- Supervising the utilization of resources, land and equipment
- Preparing financial report and management report

**Table A12-7 Responsibilities of Directors, Bureaus and Divisions of PJT (3/3)**

**B. Bureau of Human Resources and General Affairs**

- Preparing the organization concept and scope of works as well as preparing new institutions
- Recruiting, placing, guiding/developing and discharging the staffs
- Preparing concept and the implementation of official compensation (pension) and administration
- Conducting secretarial and housekeeping matters
- Executing tasks of representative office in Jakarta
- Arranging documentation of company activities
- Conducting the goods procurement, storage, dismissal and administration
- Arranging company's building and land documents and recording state-owned assets
- Security rehabilitation
- Library management

**C. Internal Supervision Unit**

- Assisting President Director to supervise the implementation of Board of Directors' policy by inspecting organization units on:
  - The obedience to the valid stipulation and procedures
  - The completeness and naturalness of financial reports
  - Securing company/state assets in administration and physical aspects
- Assisting President Director to evaluate:
  - Systems and procedures of all the company's activities
  - Fluency of services to customers
- Giving information and data to the Board of Directors in making decision for company management

Source: Decision of PJT Board of Directors No. KP.059/KPTS/DA96 on the Reformation of PJT Organization Structure. 15 May 1996.

**Table A12-8 Responsibilities of Sections / Sub-Divisions of PJT (1/4)**

<b>I. Bureau of Research and Development</b>
<b>A. Coordinator I</b>
<ul style="list-style-type: none"> <li>- Preparing corporate long-term plan.</li> <li>- Preparing river basin master plan.</li> <li>- Conducting studies covering :             <ul style="list-style-type: none"> <li>-Management development</li> <li>-Working area development</li> <li>-Corporate development</li> <li>-Technology and tariffing</li> <li>-Water resources protection</li> </ul> </li> <li>- Making procedure system and MIS</li> <li>- Preparing manual of O&amp;M, seminar, publication and effort to improve the corporate image</li> </ul>
<b>B. Coordinator II</b>
<ul style="list-style-type: none"> <li>- Preparing water pollution prevention master plan</li> <li>- Making the concept of legislation, terms of contract and legal dispute handling.</li> <li>- Preparing manual of O&amp;M, seminar, publication and effort to improve the corporate image</li> <li>- Conducting studies covering :             <ul style="list-style-type: none"> <li>-Management development</li> <li>-Working area development</li> <li>-Corporate development</li> <li>-Technology and tariffing</li> <li>-Water resources protection</li> </ul> </li> </ul>
<b>II. Bureau of Planning and Controlling</b>
<b>A. Section of Planning and Program Control</b>
<ul style="list-style-type: none"> <li>- Composing and reviewing the company budget, quarterly work program and the plan of resource allocation</li> <li>- Arranging the program of physical work package for both contracted and self-managing</li> <li>- Composing the environmental conservation program comprising pollution prevention, protection and restoration</li> <li>- Supervising and controlling the quarterly program after its completion</li> <li>- Supervising and controlling the use of manpower and equipment</li> <li>- Monitoring and evaluation of program implementation quarterly and yearly</li> <li>- Arranging report and suggestions based on the result of the above-mentioned evaluation</li> </ul>
<b>B. Section of Planning and Technical Control</b>
<ul style="list-style-type: none"> <li>- Conducting survey, investigation and research for the company operation</li> <li>- Designing civil construction and water construction</li> <li>- Checking and revising, if necessary, drawings</li> <li>- Preparing construction calculation</li> <li>- Preparing reservoir operation pattern and flood warning guidelines</li> <li>- Publishing recommendation on water usage and waste dumping (technical recommendation) and on environmental protection operationally and conceptually</li> <li>- Supervising and controlling environmental conservation programs</li> <li>- Monitoring and composing evaluation report of all the technical/operational activities of the company</li> <li>- Evaluating and studying the plan to transfer water construction from PLN, Ministry of Public Works and other authorized institutions to the company</li> <li>- Monitoring and evaluating the handling of water quality conducted in both laboratory and field</li> <li>- Monitoring and evaluating industrial waste</li> </ul>
<b>C. Computer and FFWS Unit</b>
<ul style="list-style-type: none"> <li>- Developing system design and program in the field of technique, administration and maintenance.</li> <li>- Implementing operation and maintenance of FFWS and telecommunication instrument.</li> <li>- Implementing computer operation and management at head office and for data processing.</li> </ul>

**Table A12-8 Responsibilities of Sections / Sub-Divisions of PJT (2/4)**

**III. Bureau of Corporate Development**

- A. Coordinator I**
- Collecting data on water resources potential within the working area of the company and in other river basins as well as preparing corporate development plan with the priority sequence.
  - Preparing initial study (pre-study) and feasibility study both for working area development and for corporate development of clean water and raw water.
  - Preparing to get business partner and alternative funding source.
  - Preparing the institution type for developing working area and/or preparing the cooperation type with business partner.
  - Preparing detailed design to construct means/infrastructures and assisting in realizing the establishment of new business with its product marketing.
  - Monitoring and evaluating the plan and the realization in corporate development.
  - Preparing materials for presentation and/or proposal on management in other river basins and for other corporate development.

- B. Coordinator II**
- Inventorying the corporate potential (tourism, land, sand mining etc.) and preparing the development plan as well as the priority scale.
  - Preparing feasibility study and analysis on corporate development/ new investment in the field of water resources and land utilization, tourism etc.
  - Seeking business partners and preparing the concept of cooperation with them and preparing anything dealing with the establishment and operation of the company.
  - Following up and realizing the establishment of new corporate units according to the cooperation contract already stated to be feasible.
  - Monitoring and preparing the reports dealing with the above activities:
    - Making the program of building small business and cooperatives for further building in the following
    - Preparing Director's Decree on fund allocation and legalization of building small business and cooperatives for related year.
    - Preparing cooperation contract with public service institution of the appointed university in the frame of building small business and cooperatives within the working area of Jasa Tirta Public Corporation.
    - Coordinating with local Government within the working area of Jasa Tirta Public Corporation and related institution ( industry office, Ministry of Cooperatives and Small Business Building) to select candidates of built partners for getting working capital loan and training conducted by public service institution of the appointed university.
    - Making the quarterly/annual report on realization of small business and cooperative building.
    - Monitoring the progress of built partners in the framework of working capital utilization given by Ja

**IV. Division of Water Service (U/S and D/S)**

- A. Sub-Division of Water and Water Resources**
- Planning raw water management allocation for power plant, industries and so on.
  - Identifying new water users and possible improvement of current users.
  - Conducting public campaigns on the environmental awareness.
  - O&M of water resources development infrastructures.
  - Water distribution to users based on the water allocation plan.
  - Monitoring the water use of customers.
  - Water quality control
  - Building good relationship and cooperation with regional government, the related institutions.
  - Determining raw water volume for industries.
  - Executing the measurement/river sedimentation cross section, climatological observation of river flow and main dams.
  - Managing utilization of land, reservoir, and type-C excavation materials to give revenue to the company.
  - Conducting protection programs.
  - Carrying out attempts of flood prevention.



**Table A12-8 Responsibilities of Sections / Sub-Divisions of PJT (3/4)**

**V. Division of Non Water Service**

**A. Sub-Division of Equipment Service and Maintenance**

- Searching and developing market range to the available equipment.
- Transferring equipment to users in accordance with the allocation plan.
- Preparing operators, mechanics and trained employees.
- Recording and evaluating the performance (utilization and availability) of all equipment.
- Managing equipment mobilization and demobilization on the field demand and condition.
- Arranging the need of spare parts.
- Managing the available spare parts storage.
- Managing the implementation of equipment treatment/maintenance and repair in line with the company policy.
- Arranging the storage and security of stand-by equipment.

**B. Sub-Division of Construction and Consulting Services**

- Seeking and developing the market of construction and consulting services.
- Formulating the marketing strategy for construction and consulting services.
- Formulating the market analysis and evaluation including those of competitors.
- Composing the technical and price bidding for construction projects.
- Providing specialists to meet the qualification in TOR to carry out consultation tasks.
- Monitoring the progress of service payment and take necessary action if the activity is stuck.
- Carrying out agreeable service works with service users.
- Preparing specialists to perform consulting services under the lead firm.
- Monitoring the performance of specialists assigned to carry out consulting services.
- Preparing the required resources for the implementation of construction services.
- Managing the construction service in a position as a sub-contractor in accordance with the contract.
- Monitoring the progress of construction service, consulting service, other works and their expenses and taking action if the sign of deviation occurs.

**C. Autonomous Unit**

- Managing the Unit covering :
  - Implementation service and financial management
  - Maintenance of facilities (simple one)
  - Monitoring progress
- Marketing for tourism to improve condition for future
- Preparing monthly cash flow of the Unit
- Administration of the unit.

**VI. Bureau of Finance**

**A. Section of Financial Accounting**

- Recording and analyzing accounting data.
- Conducting bookkeeping in accordance with accounting principles.
- Composing report of activities , income and cost as set in the existing provisions.
- Managing arrangement of company financial position report.
- Managing the arrangement of State-owned Company's Fund Placement Report and tax report for Directorate General of State-owned Company Rehabilitation.
- Composing financial reports of monthly, quarterly and annually for both analysis and evaluation.

**B. Section of Budget**

- Planning income and expenditures (cash flow plan).
- Income and expenses management.
- Monitoring income and expenses to maintain the company liquidity position.
- Processing the note of charge letter and its verification also monitoring the execution of charging.
- Calculating all type of debt taxes and carrying out the payment on time.
- Inspecting the order of goods procurement related to the fund naturalness and necessity.
- Inspecting the down payment request considering the fund position and its urgency.
- Verifying the completeness and the validity of income and expenses document.

**Table A12-8 Responsibilities of Sections / Sub-Divisions of PJT (4/4)**

- Administration and income-payment document storage.
- Conducting down payment monitoring and controlling.
- Monitoring the budget realization of all work units and reporting the result of the evaluation.

**C. Section of Management Accounting**

- Calculating the amount of fixed assets depreciation in the year.
- Supervising and controlling the use of company assets.
- Composing periodical management reports (monthly, quarterly and annual) including company performance analysis and profit center units.

**VII. Bureau of Human Resources and General Affairs**

**A. Section of Human Resources Development**

- Composing the organization concept and scope of works.
- Arranging human resources plan comprising the number, qualification and composition.
- Recruiting and developing human resources in accordance with the need starting from the recruitment, selection, placement, training and each personnel's tasks.
- Official administration covering the assessment of achievement, shifting, demotion, disciplinary punishment and so on.
- Calculation and payment of official compensation such as salary, achievement bonus, production service, duty trip expenses and so on.
- Executing the official administration for the government civil officers.
- Medical and work safety service.
- Administration of manpower assignment to the other institutions.
- Conducting the pension procedures for the officers who meets the requirements.

**B. Section of Housekeeping and Secretary**

- Executing secretarial tasks such as recording, scheduling, typing, sending, filing and distributing the incoming and outgoing letters.
- Managing the secretarial tasks in Director Board level.
- Arranging documents/books multiplication and binding.
- Managing the tasks of liaison officers in Jakarta.
- Carrying out the maintenance and repair of company owned buildings.
- Carrying out the maintenance of office home stay and its garden.
- Arranging the preparation of official meeting room both in the office and outside the office.
- Arranging the room landscape and its equipment.
- Managing the use, maintenance and repair of the cars in Jakarta Office.
- Providing drinking water and snacks for the employees.
- Carrying out the payment of electricity, telephone, telex and water use both in the office and in the home stay.
- Arranging the official guest welcome party on behalf of the company.
- Managing the documentation (photo, video, new, clipping and so on) for the sake of company image improvement.

**C. Section of Logistics**

- Performing the goods procurement based on the necessity plan.
- Preparing the goods procurement contract in line with the existing provisions.
- Completing the contract administration with the contractor and consultant letters.
- Management of company goods and equipment.
- Arrangement of company vehicle documents.
- Arrangement of building/land documents owned and /or managed by the company.
- Inventory management of company assets.

Source: Decision letter (draft) of Board of Directors on the Transformation/completion of Official Job Description in PJT.

**Table A12-9 Job Description (Summary) of Bureaus / Divisions of  
New PJT in 2002 and Persero Jasa Tirta in 2005**

Directorate/Bureau/Division	Job Description(summary)	Current Organization
I. President Director		
II. Directorate for Technical Affairs		
A. Bureau of Research & Development	-Research and development -Studies	Bureau of Research & Development Bureau of Research & Development
B. Bureau of Technical Planning	-Master plan -O&M manual -Work program for each unit	Bureau of Research & Development Bureau of Research & Development Bureau of Planning & Controlling
C. Bureau of Design	-Design of construction works -Survey	Bureau of Planning & Controlling Bureau of Planning & Controlling
D. Bureau of Monitoring System	-HWS -Monit. & cont. of W supply	Bureau of Planning & Controlling Division of Water Service
III. Directorate for Infrastructure		
A. Division of Development		
-Sub-Division of Water Resources	-Construction & Rehabilitation -Equipment rental	PKB / Division of Non Water Service Division of Non Water Service
-Sub-Division of River Improvement	-River improvement	PKB
-Sub-Division of Land Conservation	-Land prevention & control	PKKS
B. Division of O & M		
-Sub-Division of Up Stream	-O&M of WR Infrastructures	Division of Water Service
-Sub-Division of Down-Stream	-O&M of WR Infrastructures	Division of Water Service
C. Division of Environment		
-Sub-Division of Water Quality	-Monit. & cont. of W quality	Division of Water Service
-Sub-Division of Watershed Management	-Watershed management	New
-Sub-Division of River Environment	-River environment	New
IV. Directorate for Business Development		
A. Bureau of Corporate Planning	-Long term plan -Management development	Bureau of Research & Development Bureau of Research & Development
B. Bureau of Corporate Management	-Business development plan -Tourism development -Consulting service	Bureau of Corporate Development Division of Non Water Service Division of Non Water Service
C. Bureau of Marketing	-Marketing -New business marketing -Monitoring payment	Division of Water Service Bureau of Corporate Development Division of Water Service
V. Directorate for Administration & Finance		
A. Bureau of Administration		
-Section of General Affairs	-General affairs -Quality management (ISO) -Secretarial & housekeeping matters	Bureau of Human Resources & General Affairs Quality Management Unit Bureau of Human Resources & General Affairs
-Section of Legal Affairs	-Legal matters	Bureau of Research & Development
-Section of Public Relations	-Corporate image -Public campaign(Prokasih)	Bureau of Research & Development Division of Water Service
B. Bureau of HRD	-HR planning & management -Career planning -Salary computation -Organizational matters	Bureau of Human Resources & General Affairs Bureau of Human Resources & General Affairs Bureau of Human Resources & General Affairs
C. Bureau of Finance		
-Section of Finance	-Financial accounting -Annual budget and Work Plan -Management of state/company assets	Bureau of Finance Bureau of Planning & Controlling Division of Water Service
-Section of MIS	-Building & managing MIS -Managing main computer	Bureau of Research & Development Bureau of Planning & Controlling

**Table A12-10 Tasks of W.R.M. by Management Unit of New PJT (Proposed) (1/2)**

Tasks required for WRM	(A)	(B) Management Unit of New PJT														
		Secy of WRM	Director of Planning	Director of Finance	Director of HRD	Director of Public Relations	Director of Legal Affairs	Director of General Affairs	Director of Administration	Director of Investigation & Prosecution	Director of Marketing	Director of Corporate Management	Director of Business Development	Director of River Conservation	Director of Water Quality	Director of Environmental
<b>I. WATERSHED MANAGEMENT (Mountainous area)</b>																
I.1 Land use management	○															
I.1.1 Regulations (Legislation)	○															
I.1.2 Land use inventory survey	○															
I.1.3 Evaluation of land use	○															
I.1.4 Land development plan	○															
I.1.5 Implementation	○															
I.1.6 Controversial forest management	○															
I.2 Land slide and erosion prevention management	○															
I.2.1 Regulations (Legislation)	○															
I.2.2 Regular inspection survey	○															
I.2.3 Landslide inventory survey	○															
I.2.4 Landslide prevention plans	○															
I.2.5 Implementation	○															
I.3 Sediment control	○															
I.3.1 Regulations (Legislation)	○															
I.3.2 Sedimentation in rivers/tri-sections	○															
I.3.3 Countermeasures of sedimentation	○															
I.3.4 Implementation	○															
I.4 G.R. and debris control	○															
I.4.1 Regulations (Legislation)	○															
I.4.2 Sedimentation in the existing Sand pocket	○															
I.4.3 Countermeasures of sedimentation	○															
I.4.4 Implementation	○															
<b>II. FLOOD MANAGEMENT (incl. River Management)</b>																
II.1 Regulations (Legislation)	○															
II.2 Flood control works	○															
II.2.1 Existing flood control works	○															
II.2.2 Flood forecasting and warning system	○															
II.2.3 Rehabilitation plans	○															
II.2.4 Flood control plans	○															
II.2.5 Implementation	○															
II.3 Flood damage management	○															
II.3.1 Flood forecasting/warning operation	○															
II.3.2 Reserve operation rule	○															
II.3.3 Rescue service	○															
II.3.4 Flood damage reports	○															
II.3.5 Implementation	○															
<b>III. WATER SUPPLY MANAGEMENT</b>																
III.1 Regulations (Legislation)	○															
III.2 Water supply	○															
III.2.1 Domestic water	○															
III.2.2 Irrigation water	○															
III.2.3 Brackish fisheries water	○															
III.2.4 Industrial water	○															
III.2.5 River maintenance water	○															
III.2.6 Hydro-electric power	○															
III.3 Water resources	○															
III.3.1 Existing surface waters	○															
III.3.2 Existing ground waters	○															
III.3.3 Water resources development plans	○															
III.3.4 Management of implement (incl. design)	○															
III.4 Water balance	○															
III.4.1 Present water balance	○															
III.4.2 Mid-term water balance	○															
III.4.3 Long term water balance	○															
III.5 Low water management system (LWMS)	○															
III.5.1 Regular inspection of existing LWMS	○															
III.5.2 Rehabilitation plans	○															
III.5.3 Expansion/Upgrading plans of LWMS	○															

Table A12-10 Tasks of W.R.M. by Management Unit of New PJT (Proposed) (2/2)

Tasks required for WRM	(B) Management Unit of New PJT												
	Section of OASIS	Section of Finance	B. of Finance	B. of HRD	Section of Public Relations	Section of Legal Affairs	Section of General Affairs	B. of Administration	B. of Administration & Finance	B. of Marketing	B. of Corporate Management	B. of Corporate Planning	Div. for Pollution Development
III.4 Operation of LWNS													
III.5 Coordination of water allocation													
III.6 Regulation													
<b>IV. WATER QUALITY MANAGEMENT</b>													
IV.1 Regulations (Legislation)													
IV.1.1 River water													
IV.1.2 Pollution sources													
IV.2 Planning and coordination													
IV.2.1 Control and plan													
IV.2.2 Waste water quality control (Treatment)													
IV.3 Water quality monitoring (reporting)													
IV.3.1 River water													
IV.3.2 Pollution sources (Waste water)													
IV.4 Research and development													
IV.4.1 River water													
IV.4.2 Pollution sources (Waste water)													
IV.5 Water quality test (sampling and analysis)													
IV.5.1 River water													
IV.5.2 Pollution sources (Waste water)													
<b>V. RIVER ENVIRONMENT</b>													
V.1 Land use in river area (and surroundings)													
V.1.1 Regulations (Legislation)													
V.1.2 Operation and maintenance													
V.1.3 Control and plan													
V.2 Bunk in the river area													
V.2.1 Regulations (Legislation)													
V.2.2 Cooperation activity													
V.2.3 Control and plan													
V.3 Reclamation in river area													
V.3.1 Regulations (Legislation)													
V.3.2 Operation and maintenance													
V.3.3 Control and plan													
<b>VI. WRM MASTER PLAN</b>													
<b>VII. INSTITUTION</b>													
VII.1 Water law													
VII.2 Water right													
<b>VIII. ORGANIZATION</b>													
VIII.1 Management bodies													
VIII.2 Community participation													

Note: 1) Denotation for (A) is as shown below.  
 (A) Implementing (A) Cooperating (Other agency than New PJT is implementing)  
 Referred from Table 3

2) Denotation for (B) is as shown below.  
 (B) Implementing (B) Leading management unit for implementation in New PJT

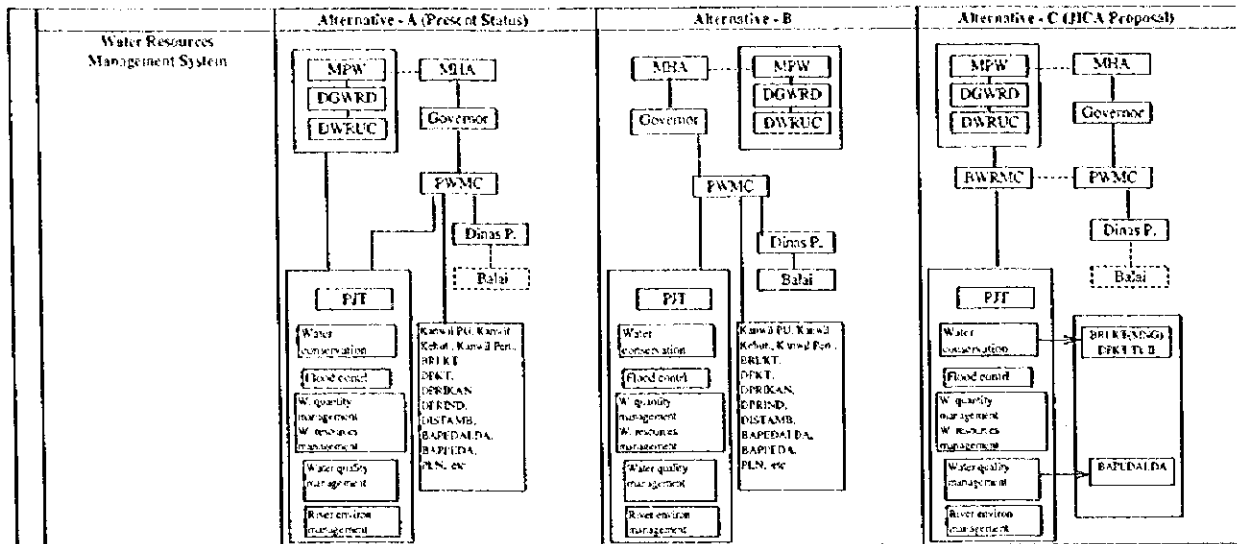
3) Dir. : Directorate  
 B. : Bureau  
 Div. : Division

**Table A12-11 Comparison of Perum and Persero**

Items	Perum	Persero
1. Enterprise status	Public corporation (State owned)	Limited corporation (State owned)
2. Liability	Unlimited liability	Limited liability
3. Management direction	social > profit socio-economic welfare with some profit	social = profit profit oriented subject to monopolized public works
4. Policy decision	MOF(*)	SGM(*)
5. Supervise daily operation	Delegated from MOF to MPW(*)	Delegated to MPW(*)
6. Approval of work plan and budget	Legalized by MOF(*) The authority can be delegated to MPW	Legalized by SGM
7. Appointment of Board of Directors	MOF suggested by MPW(*)	By SGM(*)
8. Legal foundation	G.R. No.5 of 1990 M.R. No. 56 of 1991	Notarial Act
9. Supervision to Board of Management	Supervisory Board	Commissioner(*)
10. Main tasks	O & M -Water dealings -River basin management -Rehabilitation -Construction	O & M -Water dealings -River basin management -Rehabilitation -Construction
11. Scope of work	-Provision of raw water -Tourism -Consulting service -Sand mining -Clean water supply -Waste water treatment	-Provision of raw water -Tourism -Consulting service -Sand mining -Clean water supply -Waste water treatment
12. Capital		
- Capital	Owned by Govt not divided into shares	Partly or wholly owned by Govt Divided into shares or one share
- Public offering of share	Unallowable	Allowable for subsidiary co.
- State asset management	Book Keeping required	Book Keeping required
13. Business operation		
- Joint operation	Allowable	Allowable
- Joint venture	Allowable(*)	Allowable
- Subsidiary company	Allowable(*)	Allowable
14. Distribution of profit		
- National developm't fund (including social fund)	55%	15-20% (negotiable)
- Social fund	5%	5%
- Reserve ratio	25%	40% possible
- Dividend	-	45% possible
- Income tax for Rp.50 mil. over	30%	30%
15. Financing		
- Foreign/domestic loans	by MOF/BAPPENAS approval	by MOF/BAPPENAS approval
- Issuing of bonds	MOF approval	MOF approval
- Equity finance	Government/private fund	Government/private fund
16. Tariff rate decision	MPW	MPW & MOF

Note: (\*) shows changes by new Government Regulations No.12 and No.13 enacted on January 17, 1998.  
 MPW : Minister of Ministry of Public Works  
 MOF : Minister of Ministry of Finance  
 BOC : Board of Commissioners (replaced by "Commissioner" in New GR 1998)  
 SGM : Shareholders General Meeting

**Table A12-12 Comparison of Alternatives for WRM System in the Brantas**



**Major Elements of Water Resources Management**

	Alternative - A (Present Status)	Alternative - B	Alternative - C (HCA Proposal)
1. Primary supervising agency	MPW/MHA	MHA	MPW
2. Responsible agency -Overall responsibility -WRM sector responsibility : -Watershed management -Flood control management -Water supply management -Water quality management -River environment management	Not clear  BRLKT(Malang),DPKT Tr-II,Kanwil Kehutanan, PKB,PGKS,PJT PJT,PKB,Dinas Pengairan, DPRIND, DISTAMB,PwMC BAPEDALDA,DPRIND,Kanwil PUPJT BAPEDALDA,Kanwil PUPJT	MHA-PJT  BRLKT(Malang),DPKT Tr-II,Kanwil Kehutanan, PKB,PGKS,PJT PJT,PKB,Dinas Pengairan, DPRIND, DISTAMB,PwMC BAPEDALDA,DPRIND,Kanwil PUPJT BAPEDALDA,Kanwil PUPJT	MPW-PJT  BRLKT(Malang) & DPKT Tr-II (delegated) PJT PJT BAPEDALDA (delegated) PJT
3. Water use right license	Governor	Governor	MPW
4. Demand control	Not being done.	Dinas Pengairan will do through PwMC.	PJT (DWRUC)
5. WRM Planning	Partly done by PJT	Planning will be done by Dinas Pengairan by collecting information from the WRM related Dinas offices and through PwMC.	PJT
6. Construction/rehabilitation	PKB, PGKS	PJT	PJT
7. O&M of river infrastructures	PJT	PJT	PJT
8. Environment control	Several agencies are involved.	Several agencies are involved.	Unified control can be realized.
9. "Balai" (Water Resources Management Bureau: PSDA)	Not existing as of December 1997.	Three (3) Balai will be set up in the Basin.	Assuming no Balai in the Brantas Basin.

**Problems / Evaluation**

	Alternative - A (Present Status)	Alternative - B	Alternative - C (HCA Proposal)	
1. Primary supervising agency	MPW/MHA : not clear demarcation.	C MHA : clear	A MPW : clear	A
2. Consistency of WRM(One river, one plan and one management)	May not be realized. Independent planning and independent action.	C May not be realized. Independent planning and independent action.	C May be realized. Unified river management.	A
3. Responsibilities	Not clear and may cause confusion.	C Not clear and may cause confusion. "Balai" will bring duplication of responsibility between PJT.	C Clear. Sector management be realized through delegation. "Balai" is to be considered only in the river basin where no management body is built yet.	A
4. Demarcation of tasks	Not clear. Plan and implementation done by each sector.	C Not clear. Plan and implementation done by sector.	C Clear through delegation.	A
5. Cost minimization	No agency is responsible.	B Duplication of tasks cannot be avoided.	B Minimized by consolidation of PKB/PGKS. Elimination of duplication promotes economy.	A
6. Decentralization	To be promoted by "Balai".	A To be promoted by "Balai".	A To be promoted by BWRMC.	B
7. Institution / regulation	Confusion.	C New regulation required.	B Consistent with MPW's.	A
8. Adaptability to change	Non-existence of leading agency brings confusion.	C Non-existence of leading agency brings confusion.	C Counter measures can be comprehensively planned under the sole responsible agency.	A
9. Overall evaluation		C	B	A

Notes : Denotation for evaluation is as shown below:

A : Effective      B : Partly effective      C : Of no effect

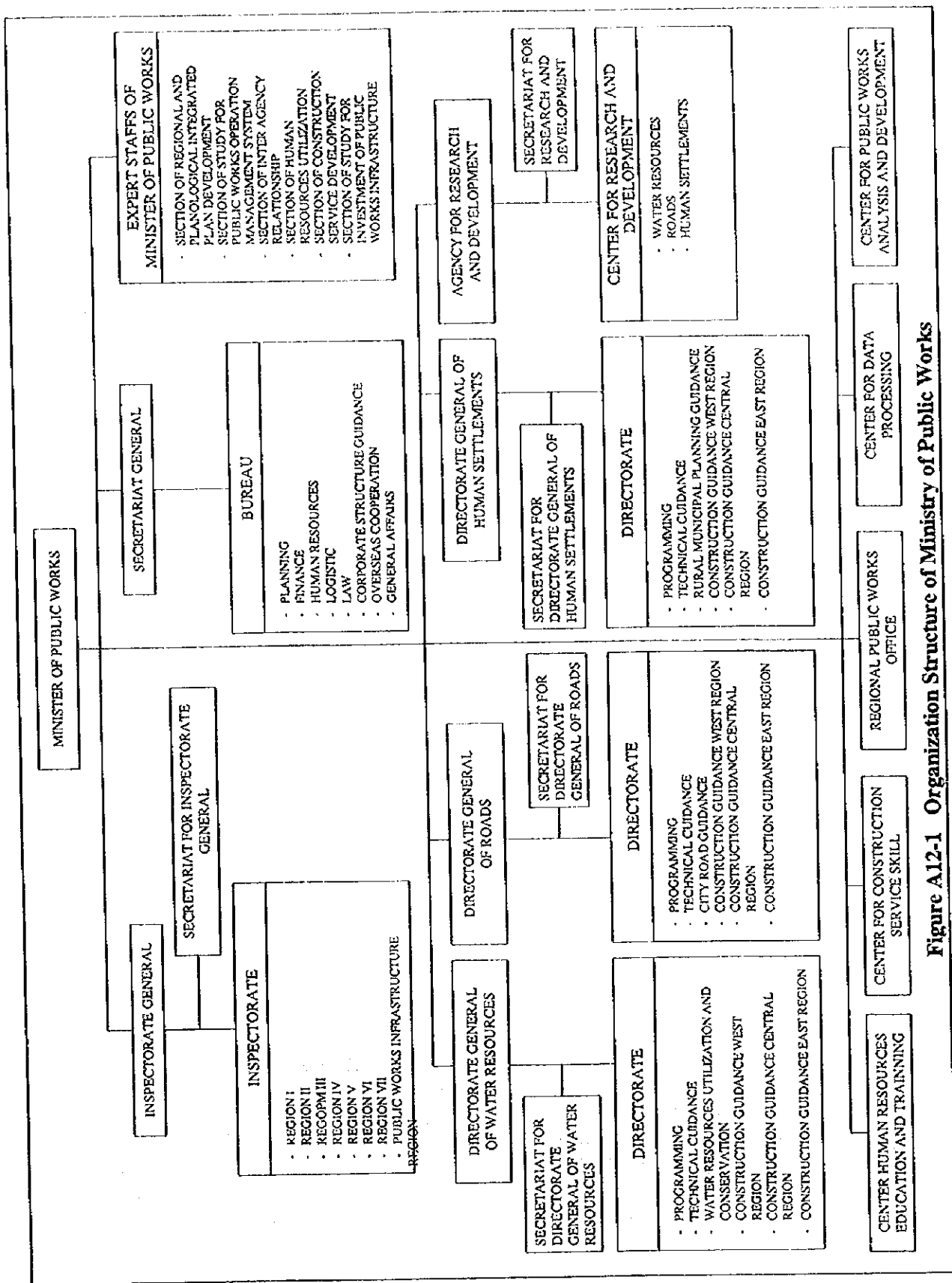


Figure A12-1 Organization Structure of Ministry of Public Works



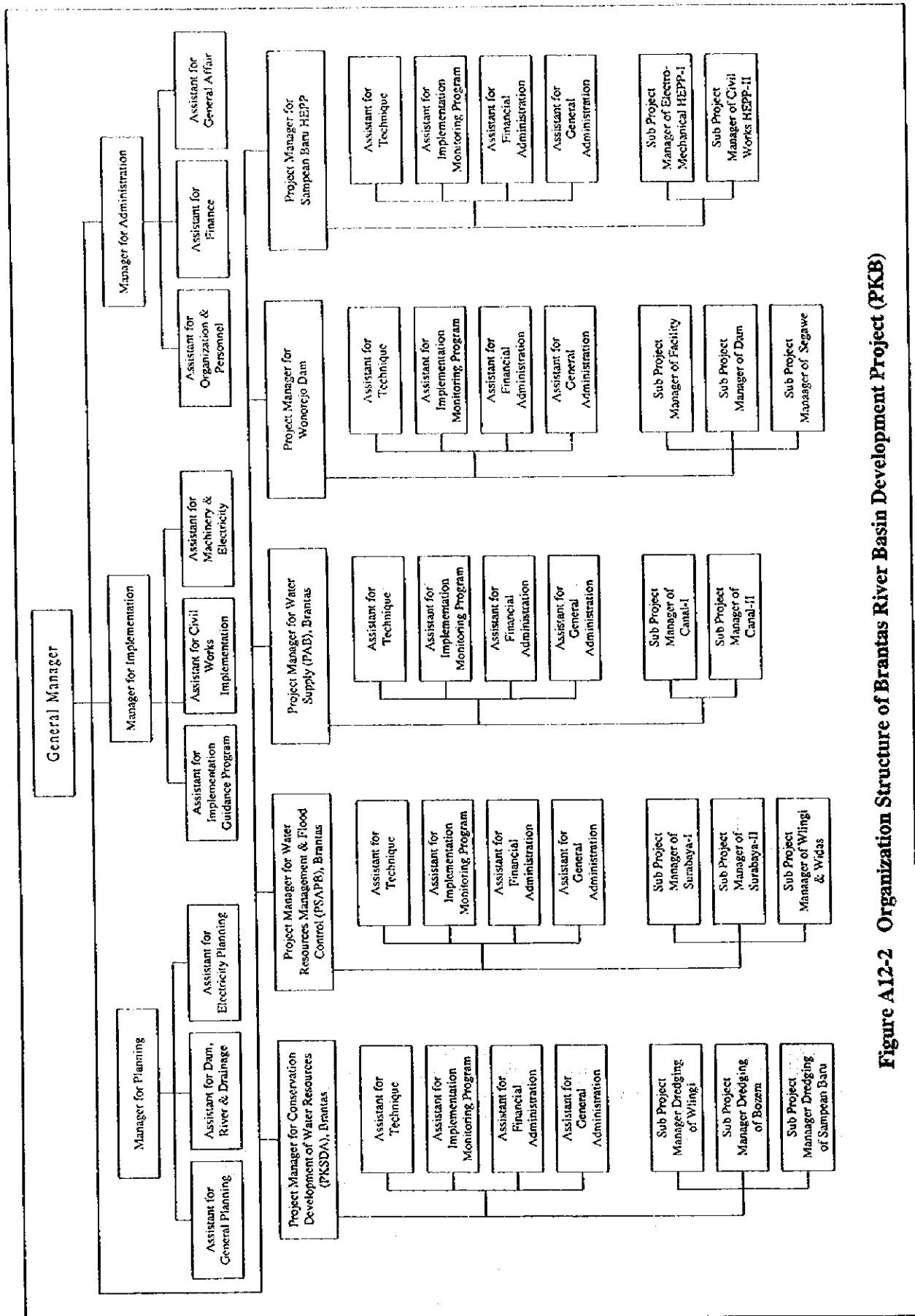


Figure A12-2 Organization Structure of Brantas River Basin Development Project (PKB)

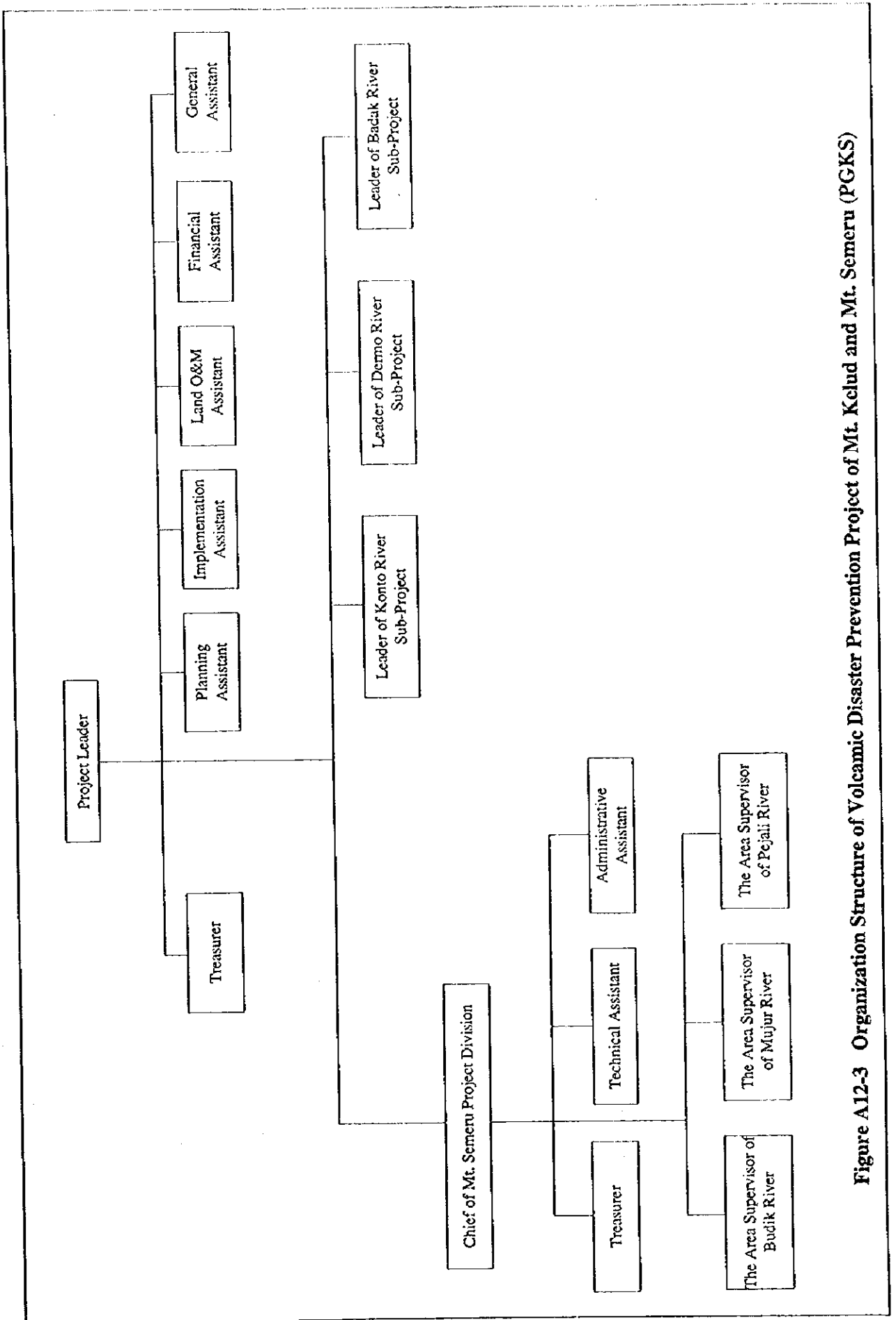


Figure A12-3 Organization Structure of Volcanic Disaster Prevention Project of Mt. Kelud and Mt. Semeru (PGKS)

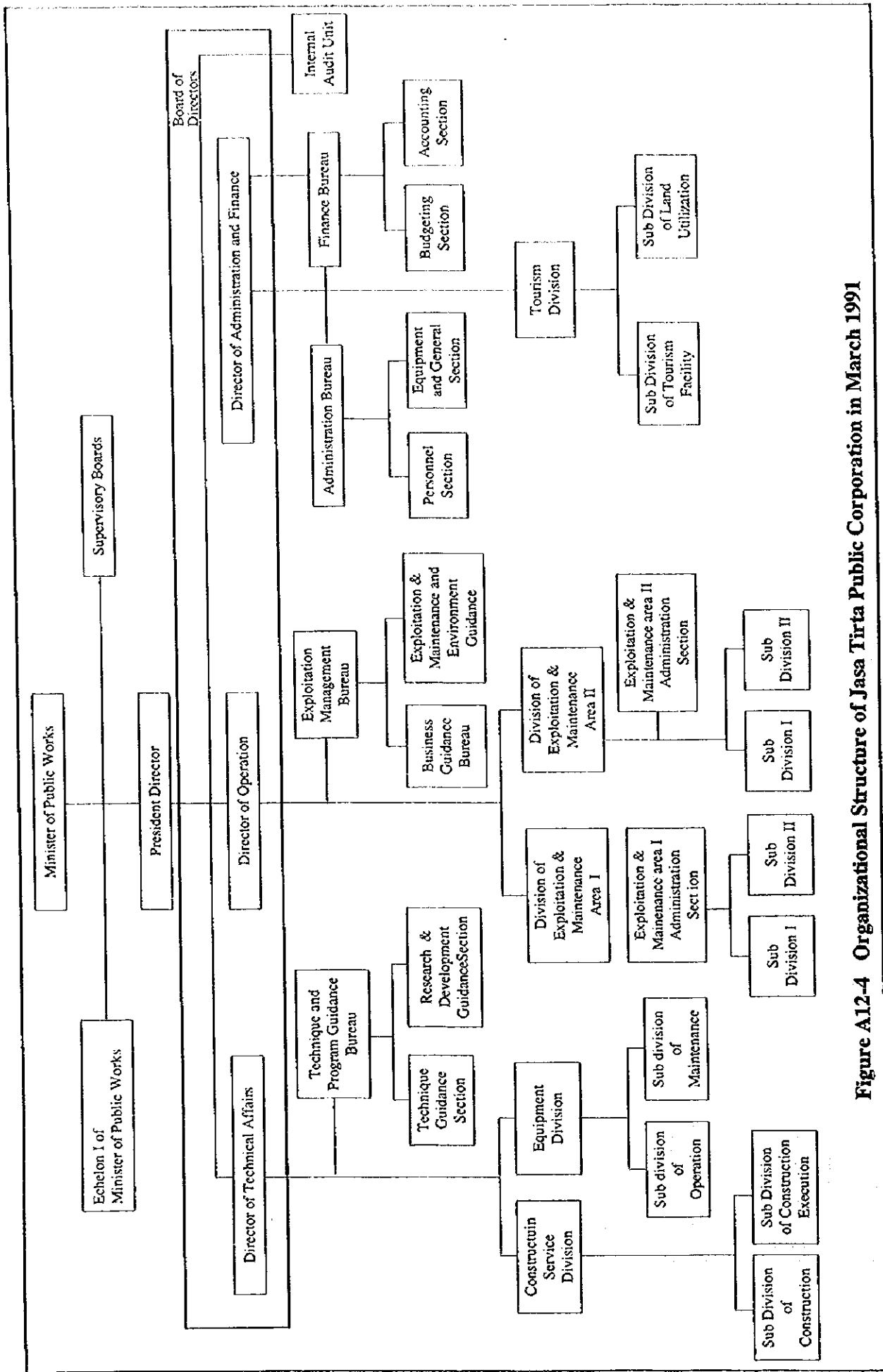


Figure A12-4 Organizational Structure of Jasa Tirta Public Corporation in March 1991

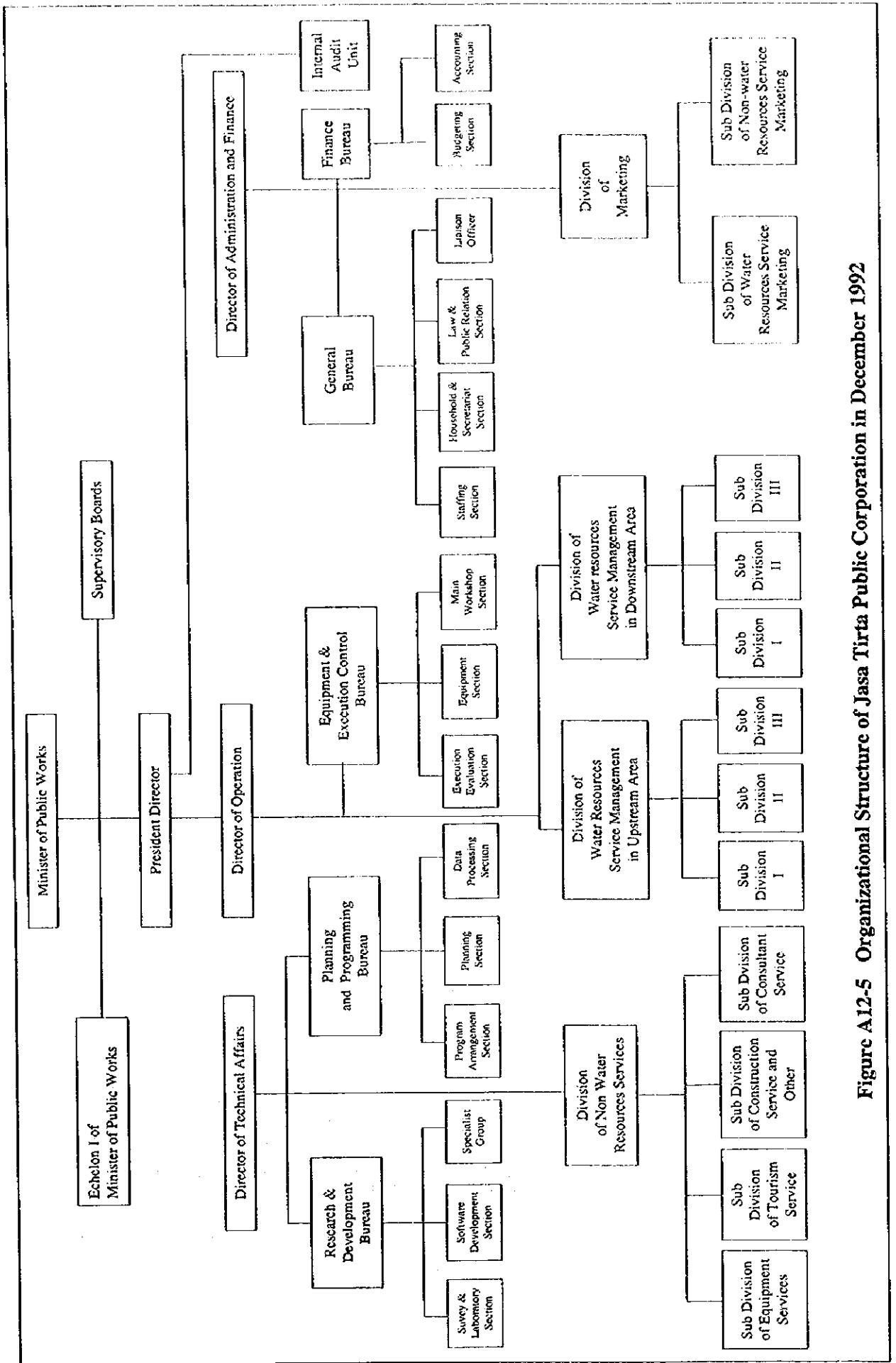


Figure A12-5 Organizational Structure of Jasa Tirta Public Corporation in December 1992

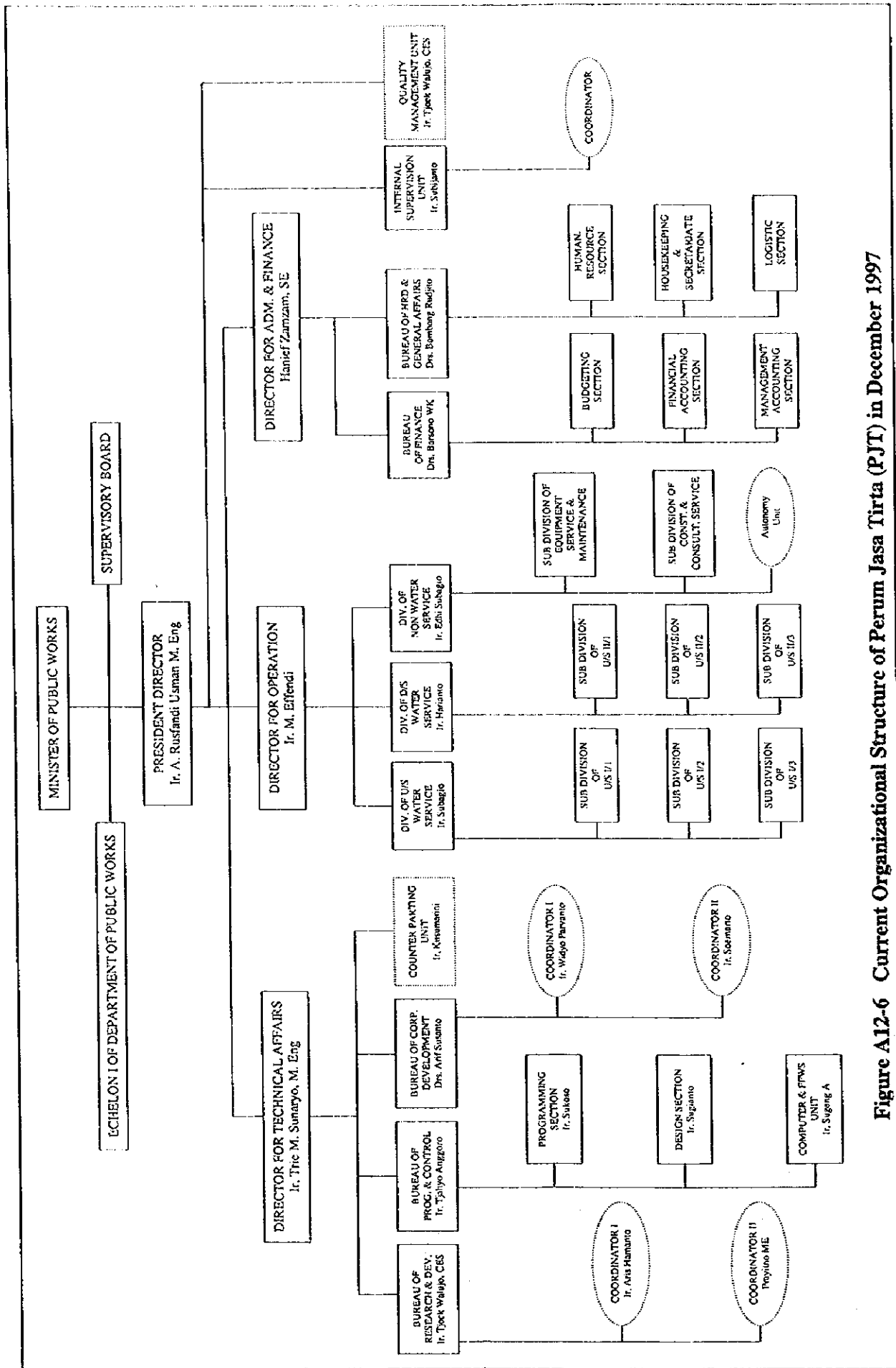
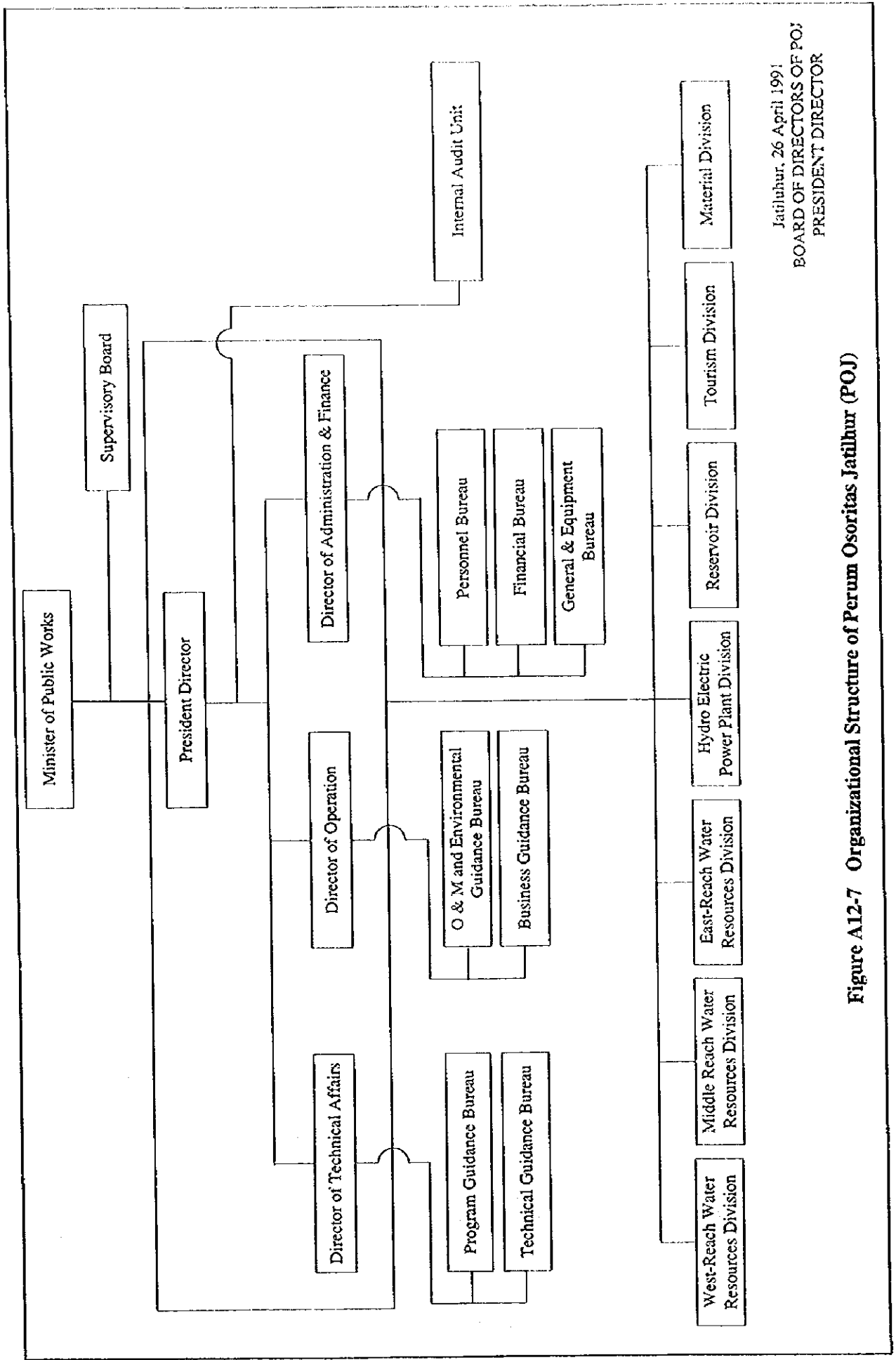
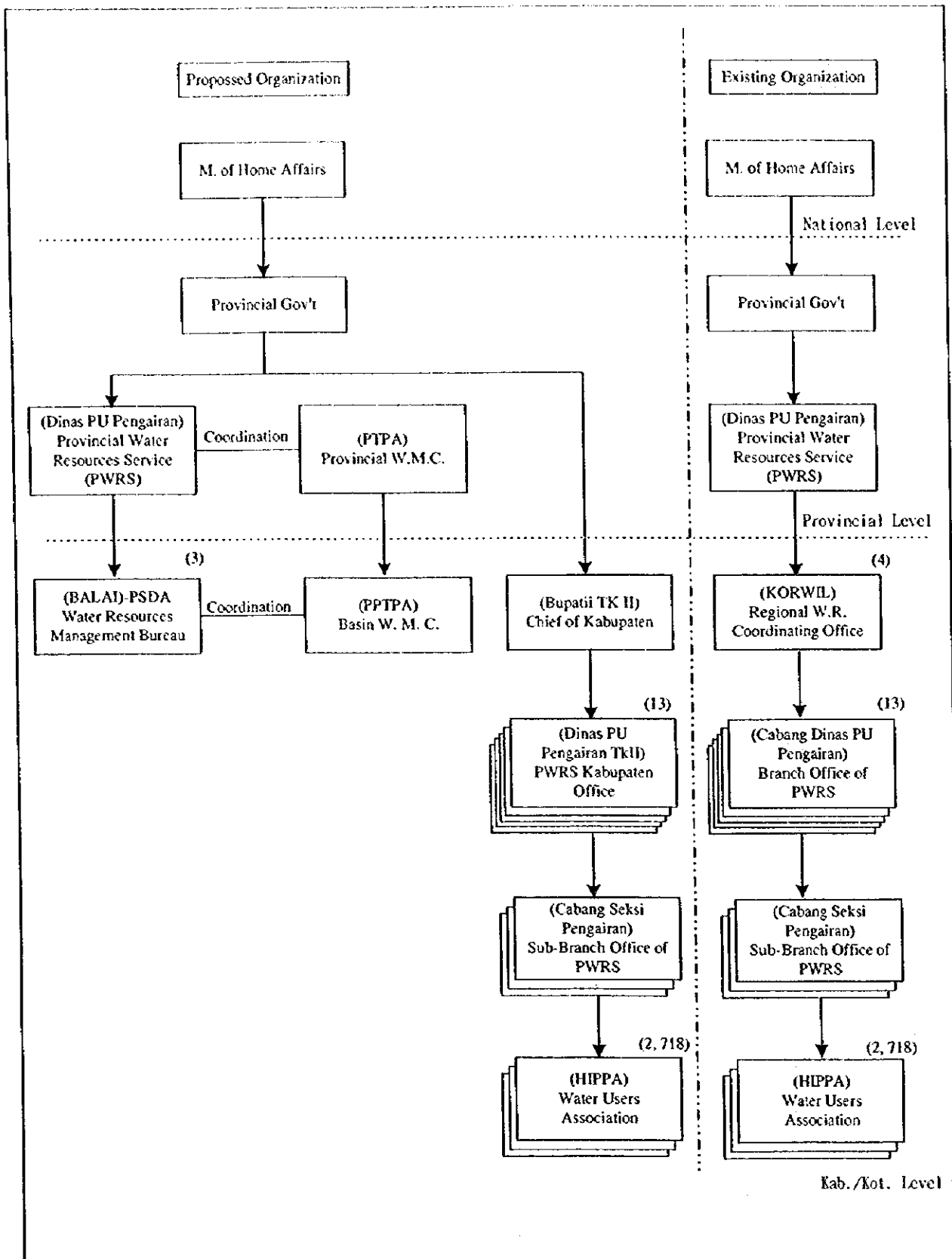


Figure A12-6 Current Organizational Structure of Perum Jasa Tirta (PJT) in December 1997



Jatiluhur, 26 April 1991  
 BOARD OF DIRECTORS OF POJ  
 PRESIDENT DIRECTOR

Figure A12-7 Organizational Structure of Perum Osoritas Jatiluhur (POJ)



**Figure A12-8 Organization of Proposed Basin Water Resources Service (new "Balai") in Brantas River Basin**

Note: Figures in parentheses show the total number of the agencies in Brantas River Basin.

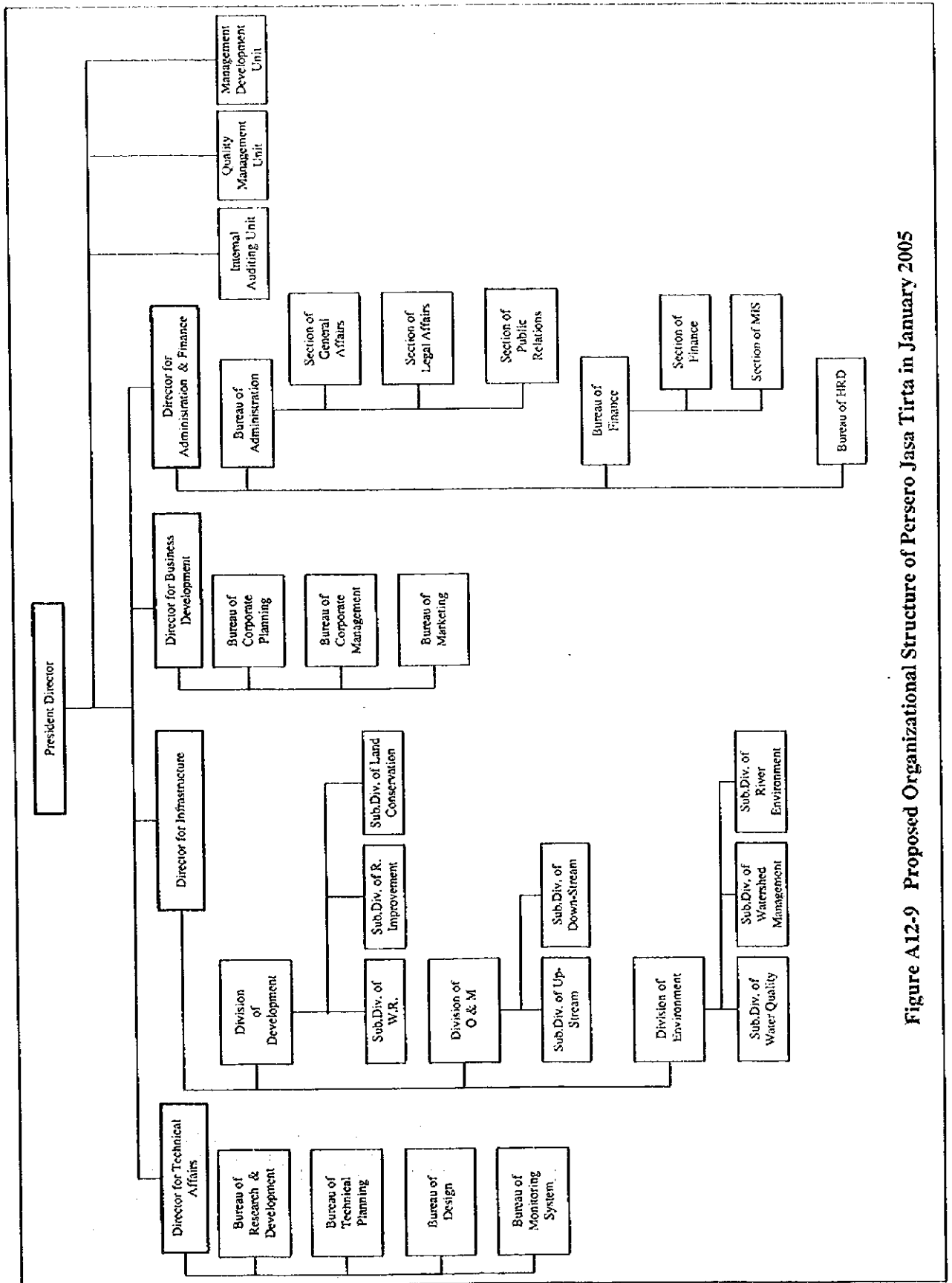


Figure A12-9 Proposed Organizational Structure of Persero Jasa Tirta in January 2005



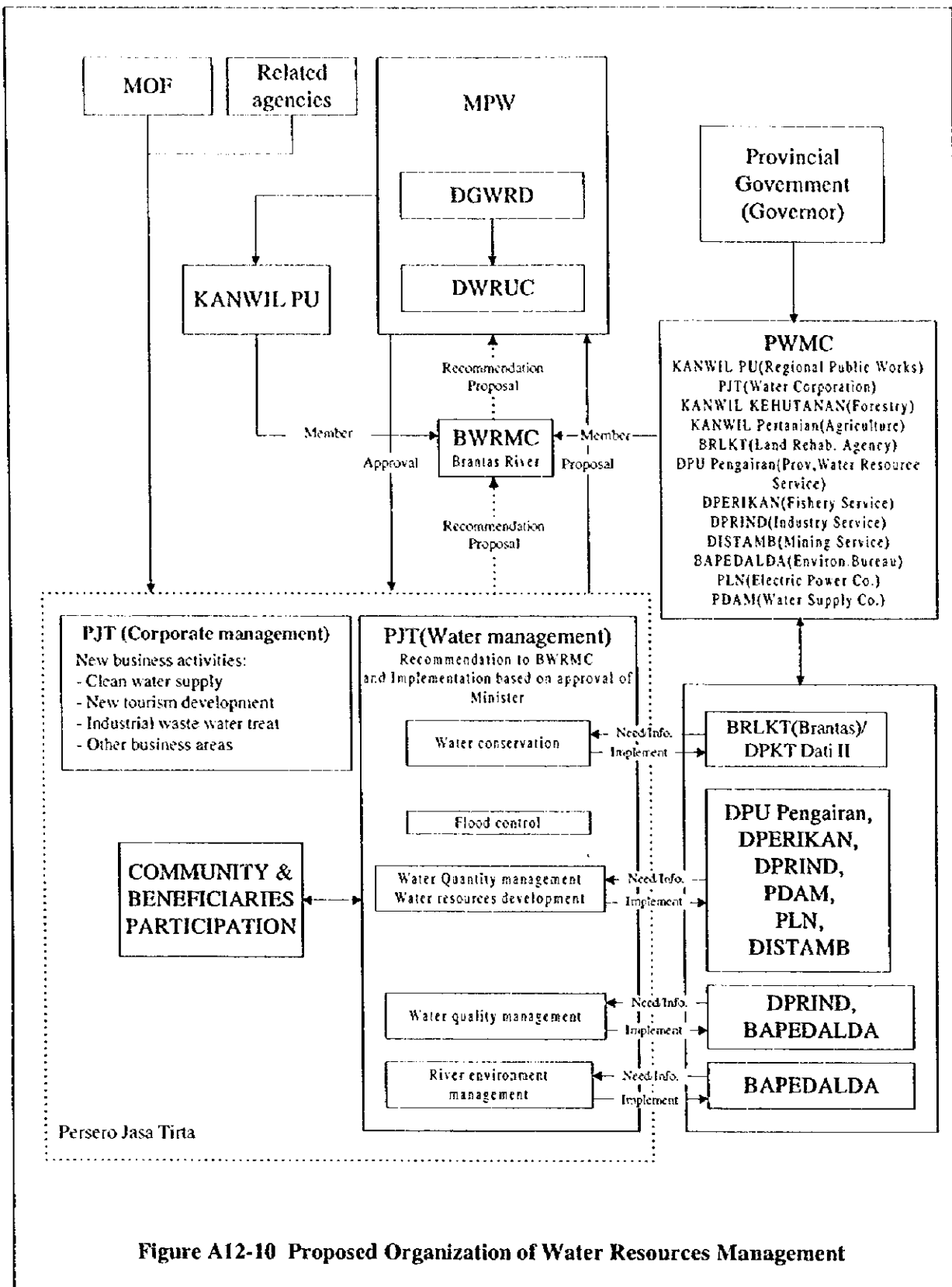
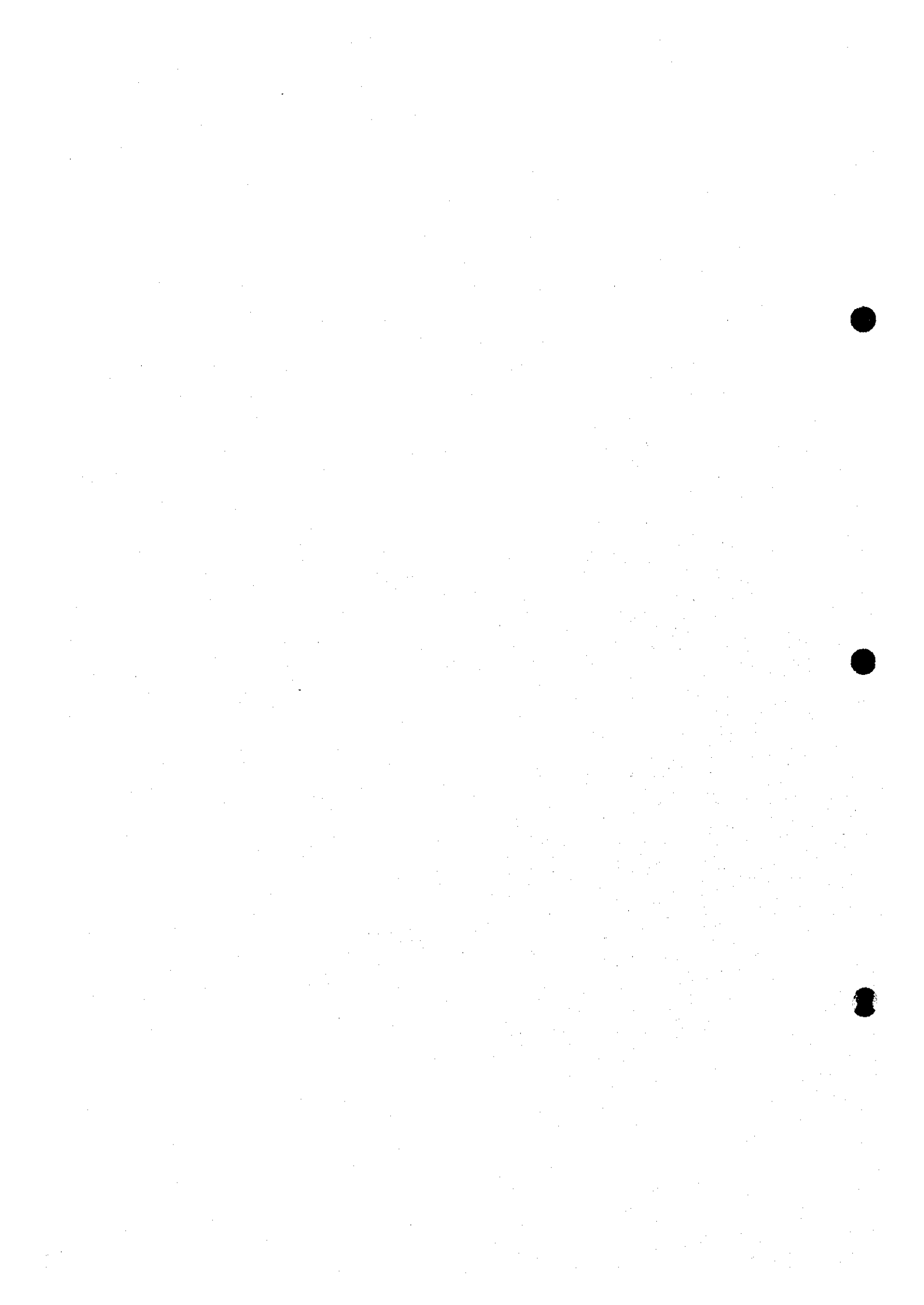


Figure A12-10 Proposed Organization of Water Resources Management

**ANNEX - 13**

**HUMAN RESOURCE DEVELOPMENT**



## ANNEX – 13 HUMAN RESOURCE DEVELOPMENT

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## **1 Present Condition of Manpower**

The present number of staff of PJT is 436 in total. A number of staff who is in charge of technical matters is 228 (53%), and a number of staff who is in charge of administrative matter is 208 (47%). Out of the present PJT staff, 393 staffs are from Brantas River Basin Development Project (PKB). There are two types of employment in PJT, an organic staff and a non organic staff. An organic staff is considered as a permanent who can be divided into a government official and non government official. A non organic staff is considered as non permanent staff who be divided into the staff with concrete contract period and staff without concrete contract period. 170 staffs are organic, including 145 government officials and 266 staffs are non organic.

The present number of staffs for PKB is 894 in total. Out of the present staff of PKB, 365(40%) of staffs are engaging in technical matters and 529(60%) of staffs are engaging in administrative matters. Approximately 70% of staff is government official and 30% of staff is local staff.

The present number of staffs for PGKS is 242 in total. Of them, 98 staffs (40%) belong to administration, 17 (7%) belong to Mount Kelud Project, and 127 staffs (53%) belong to Mount Semeru Project. For PGKS staff, 102 staffs (43%) are engaging in technical matters and 140 staffs (57%) are engaging in administrative matters. Approximately 55% of staff is government official and 45% of staff is local staff.

Note : Since the characteristics of government officials and local staffs for PKB and PGKS are similar to those of organic staffs and non organic staffs for PJT, respectively, the term "organic staff" is used for describing government officials or permanent staffs and "non organic staff" for locally hired staffs for PKB and PGKS.



## **2 Evaluation of Manpower**

Since consolidation of PJT, PKB and PGKS is planned in this Study, evaluation of staff was done for PJT, PKB and PGKS.

### **2.1 Evaluation by PJT, PKB and PGKS managers**

A matrix sheet, which shows breakdown of staff for each group in sections and character of staff (specialty, education level and job experience) was prepared for evaluation of manpower. Section chiefs or managers for administration evaluated the staff for the number, education level, and job experience by 3 ranking of A to C, in which A shows appropriate (satisfied), B shows not appropriate (not satisfied) but manageable and C shows causing trouble. The result of evaluation is summarized below.

#### **(1) Evaluation for PJT**

The evaluation was done by all the chiefs of bureaus and divisions. The result shows shortage of staff is a problem for engineering sectors. Overall quality of staff is acceptable in terms of education level and skill level, but skill development is necessary for executing tasks properly. Training is necessary for improving skills for sections that require new activities and activities that staff is not familiar. The result of evaluation is shown in Table A13.1.

#### **(2) Evaluation for PKB**

According to the chief of administration of PKB, overall performance of manpower for PKB is acceptable. One thing that should be pointed out for the manpower is that ratio of staffs who are responsible for administration, compared with the staff for technical sector, is large. The result of evaluation is shown in Table A13.2.

#### **(3) Evaluation for PGKS**

According to the Project Manager of PGKS, overall of performance of manpower is acceptable, and major manpower problems which affects the operation of PGKS cannot be seen. There is a shortage in the number of staff for some projects for PGKS, but that can be easily solved by transferring staffs from administration section to the projects. Technical assistant in G. Semeru has more staffs than actually needed. The result of evaluation is shown in Table A13.3.

### **2.2 Manpower Composition of PJT, PKB and PGKS**

#### **(1) Aging**

The aging problem is a concern for the manpower of PJT, PKB and PGKS. More than a half of staffs are older than 40 years of age. Since older staffs are experienced, their retirement may lead to lowering the quality of staff in the future. The age structure for PJT, PKB and PGKS is shown in Figure A.13.1~3.

## **(2) Education and Specialty Needed for New PJT**

About 80% of the total staff has the education level of high school or lower. Fourteen percent of total staff has the bachelor or higher degrees, and the rest has the diploma from universities. More than forty percent of staffs is not specialized in specific fields. There are enough staffs for civil engineering, mechanical engineering and electrical engineering, which shows some deviation in the composition of the staff specialty. The specialists and tasks necessary for New PJT are shown below.

- |                            |                                      |
|----------------------------|--------------------------------------|
| (i) Environmental engineer | : water quality management, ISO14000 |
| (ii) Biologist             | : river conservation                 |
| (iii) Accountant           | : MIS, asset management              |
| (iv) Legal expert          | : institutional aspects              |
| (v) Tourism expert         | : tourism development                |

Generally speaking, with the education level that the staffs have, the skill improvement of staffs for most sectors can be achieved by proper training, but an internal training may not be sufficient for such sectors as environment, biology, accounting, law and tourism. The recruitment should be considered for these sector specialists.

## **(3) Job Assignment**

Some imbalance of the allocation staff among departments can be seen in PJT. Because of changing responsibility of departments or new business development, the number of staff is not assigned properly, and some staffs are assigned to the tasks that they are not familiar.

Since staffs for PKB and PGKS are assigned by the projects, staff arrangement is organized relatively well. The problem for staff assignment for PKB and PGKS is that there are too many staff for administration compared to the staff for the technical sector.

## **2.3 Quality of Skills**

Low quality of skills can be seen in some sectors in PJT, which is caused by several reasons as stated below. Overall skill of staffs for PKB and PGKS is acceptable.

### **(1) Inexperience for assigned tasks**

The inexperience can be seen among site staffs who do not have enough working experiences in the sector, while there are older staffs who are assigned to the sections with which they are not familiar.

### **(2) Lack of basic knowledge**

Some staffs do not have basic knowledge of their assignments. Without the basic knowledge, up-grading or improvement of quality of works can hardly be achieved.

### **(3) Attitude problem of staffs**

There are some staffs who do not know the meaning of the tasks, so reliability of the job tends to be low. There is a tendency that once staffs gain some skills, they do

not share the skills with other staffs, and there is no transfer of skills.



### **3 Present Manpower Policy**

#### **3.1 General**

The manpower policy of PJT, PKB and PGKS is set by the government regulation. The treatment of organic staff and non organic staff is different. Organic staffs are treated as permanent staff and non organic staffs are treated as contract staffs, so that the salary, retirement age, health insurance and pension vary between organic staff and non organic staff.

After New PJT changes to Persero Jasa Tirta in 2005, the status of government official is no longer available. A new manpower policy for Persero Jasa Tirta should be established.

#### **3.2 Recruitment**

PJT, PKB and PGKS have a different recruitment policy for organic staffs and non organic staffs. Requirement criteria, such as education level and experience, are tougher for organic staffs than those for non organic staffs, so that the organic staffs presently employed by those agencies are well educated and highly skilled compared with non organic staffs.

It is possible for non organic staffs to change their status to organic if they are found to be able to perform responsible tasks.

PJT has a policy for not substituting any government officials, so the number of government officials is decreasing as they retire, and eventually government officials will become zero. PGKS has a recruitment policy called, "Zero Population Growth for Government Officials". This means absolute number of the staff stays the present level. Only added a new staff when there is an empty position caused by retirement, resignation, or some other reasons.

#### **3.3 Salary System**

A salary system for organic staffs and non organic staffs are also different. Salary for organic staffs consists of fixed salary and performance payment. Performance payment is considered as an incentive for employees, which is determined by job performances. Salary for non organic staffs, on the other hand, is determined by work hours and wage rate. Generally speaking, salary level for organic staffs is higher than that for non organic staffs.

## **4 Manpower Required for New PJT and PJT (Persero)**

### **4.1 General**

The basic principle of manpower development for the future PJT will be to increase labor efficiency by assigning appropriate number of staff to appropriate sections and provide intensive training for skill development.

The future manpower requirement for New PJT after the consolidation of PJT, PKB, and PGKS in the year 2002 is examined based on tasks that will be under PJT's responsibility in the overall W.R.M.

### **4.2 Methodology**

The manpower for 2002 is estimated by examining the number of staff needed for each task of W.R.M. allocated for each organization of New PJT. The estimation was done by sector experts of the Study Team for each W.R.M. sector. The evaluation of the current manpower done by the chiefs of sections of PJT is also taken into consideration.

The examination was done by using a matrix sheet as shown in Table 13.4, in which tasks required for WRM and organization of New PJT are listed.

Followings are the steps for manpower estimation.

- Examine the amount of work needed for tasks required for W.R.M. per year.
- Place the staffs to the appropriate sections of New PJT.

### **4.3 Conditions for Estimation of Manpower Requirement**

Followings are conditions that are made prior to examine the manpower needed for W.R.M.

- (a) Sub-contractors and consultants will be fully utilized for works, such as design and constructions.
- (b) Cooperasi (Cooperative) will be utilized for housekeeping works such as cleaning and maintenance of buildings, and supporting tasks such as securities and supplying drivers.
- (c) Administrative staffs will be assigned to project sites from Bureau of Administration as needed.
- (d) The responsibility for works for watershed management and water quality management will be delegated to respective agencies.
- (e) G. Kelud projects currently managed by PGKS will be continued and are included in the scope of New PJT. Semeru projects that are in Brantas River basin also are included in the scope of New PJT..
- (e) A part of staffs in Wonorejo Project, which is scheduled to be completed by the year 2001, is shifted to Division of O&M of New PJT as O&M staff.
- (f) It is hard to estimate the number of staff for water resources and river improvement

because future projects, except Beng Dam, are uncertain. The number of staff is estimated by assuming that staffs for one project in construction stage and one project in detail design would be adequate.

- (g) For New PJT, one staff is expected to perform more than one task as needed.

#### **4.4 Required Number of Manpower for New PJT in the Year 2002**

The result of estimation shows that staff needed for the year 2002 (after consolidation of PJT, PKB and PGKS) is 593.

The classification of staff is those 114 staffs for Directorate for Technical Affairs, 388 for Directorate for Infrastructure, 23 for Directorate for Business Development and 43 for Directorate for Administration and Finance. Besides these directorates, 5 staffs for Internal Auditing Unit, 12 staffs for Quality Management Unit, 7 staffs for Management Development Unit, attached to Board of Directors is required.

#### **4.5 Staff Arrangement Among PJT, PKB and PGKS**

Several sections of New PJT will become responsible for the tasks presently managed by PJT, PKB and PGKS. Namely, sections of New PJT that will manage the present works of PKB are Sub-division of Water Resources and Sub-division of River Improvement. Sections of New PJT that will manage the present works of PJT and PKB are Sub-division of Up-stream and Sub-division of Down-stream. Sections of New PJT that will manage the present works of PGKS are Sub-division of Land Conservation and Sub-division of Watershed Management.

As a condition for transfer of staffs, it is assumed that engineering staffs, especially those who are working at project sites have a priority for transferring to New PJT. The number of staff who will be transferred to New PJT is calculated by examining the work volume and manpower for the works that will be transferred to New PJT.

- (a) Number of staff from PJT and PKB

Sub-divisions of Up-stream and Down-stream will have the responsibility for the works that are presently PJT's scope and PKB's scope. Coordination of manpower between these agencies is needed.

Eighty-nine staffs in Sub-division of Up-stream and 72 staffs in Sub-division of Down-stream are transferred from ASA I (up-stream) and ASA II (down-stream) of PJT, respectively, who are presently managing the operation and maintenance.

Thirty-two staffs in Sub-division of Up-stream and 37 staffs in Sub-division of Down-stream, who are considered as O&M staffs for the facilities that are presently under PKB's management and expected to be completed by the year 2002, are transferred from PKB.

- (b) Number of staff from PKB

Forty-six staffs in Sub-division of Water Resources and 19 staffs in Sub-division of River Improvement, who are considered as staffs for on going projects that PKB manages and expected to be handed over to New PJT, are transferred from PKB.

(c) Number of staff from PGKS

Twenty-three staffs in Sub-division of Land Conservation and 25 staffs in Sub-division of Watershed Management, who are considered as staffs for continuing sabo works being constructed by PGKS to be handed over to New PJT, are transferred from PGKS.

	Total number of staff required for New PJT	PJT	PKB	PGKS
Sub-division of Water Resources	46		46	
Sub-division of River Improvement	19		19	
Sub-division of Land Conservation	23			23
Sub-division of Up-Stream	121	89	32	
Sub-division of Down-Stream	109	72	37	
Sub-division of Watershed Management	25			25
<b>Total</b>	<b>343</b>	<b>161</b>	<b>134</b>	<b>48</b>

The total number of staff required for these sections and proposal of staff arrangements for New PJT are listed in Table above. The total number of staff required, which is the result of manpower estimation, is including the staff for present scope of PJT, PKB, and PGKS that will be transferred to New PJT. Columns for PJT, PKB, PGKS shows the number of staff required for managing the works that will be transferred from respective agencies.

#### 4.6 Required Number of Manpower for Persero Jasa Tirta in the Year 2005

Required manpower for Persero Jasa Tirta in the year 2005 is considered the same as the manpower requirement of 2002 for the following reasons.

- Job requirement, composed of development projects, additional O&M, and area to be covered, except for water supply (drinking water) is not expected to change drastically from 2002 to 2005.
- Natural decrease (retirement) of staff is assumed to be supplemented as needed.
- As mentioned in the condition for estimation of manpower, O&M staffs for Wonorejo dam, are already included in the Division of O&M.

#### 4.7 Manpower Requirement for the Target Year (2020)

Business development and expansion is expected after changing status to Persero in 2005; however, manpower required for 2020 is expected to be same as manpower for 2002 because out sources are utilized and labor productivity will improve.

#### **4.8 Arrangement Criteria for Manpower Remaining in New PJT**

According to the manpower estimate, the number of staff whom New PJT will necessitate is rather limited. Not all staff currently employed by PJT, PKB and PGKS, can be shifted to New PJT. Below are the some criteria for arrangement of manpower.

- A number of securities and drivers currently employed by PJT will be transferred to Cooperasi.
- Organic staffs or government officials are priority staffs to be hired by New PJT since they are well educated and experienced. Contracts of non organic staff or contract staff will be terminated as necessary.
- The age balance will be one of criteria for arrangement of staff. It is beneficial to maintain younger staffs because they can be trained intensively and expected to utilize the skills for New PJT.
- The arrangement of staffs who will not be able to join New PJT is needed to be taken care of before the consolidation. Possibility of transferring to MPW Central Region Office, the central government offices, local government offices, private sectors, and the other options should be considered.



## **5 Manpower Training Program**

### **5.1 Training Concept**

The purpose of training is to develop general technical skills, technical skills for sector, as well as managerial skills. In order for the efficient and effective skill development, the training program should match with individual needs as well as organizational goals. Two types of training programs are provided to meet the demands for skill development: Intensive training program and routine training program.

#### **(a) Intensive training program**

The intensive training program focuses on the sectors that should be strengthened by 2001 for preparation of consolidation of organization. Three training programs are provided for intensive training.

- a. Training programs for laws and regulations, corporate management, including inter-agency information system that are mandated for all staff
- b. Programs targeting for technical sector: basic engineering skill development, sector training program for engineering staff
- c. Programs targeting for administrative sector: basic administrative skill development, sector training program for administrative staff

#### **(b) Routine training program**

Routine training program is characterized as training that will be carried out continuing basis. Three programs will be provided for routine training.

- a. Training for new employees
- b. Training for management
- c. Training for new tasks and modification and updating of systems

#### **(c) Training method**

The training method should be selected by considering the character of the training. Several methods of training are available: lecture, OJT at site, OJT abroad, attending seminar, training at other agencies. A lecture will be suitable for training for teaching basic knowledge. The OJT will be suitable for training for specific activities. The OJT abroad is effective for the training, which involves new activities that staffs have no experience.

#### **(d) Target for trainee**

Target for trainee differs by type of training. Generally speaking, the main target for trainees will be staffs for management position and staffs who have some experiences and will be able to instruct the rest of staff after they are trained. For training in some sectors which require actual activities such as sampling of water and operation of machines, all staffs will be the target for training.

(c) Selection of instructor

Instructors should also be carefully selected. Instructors outside of PJT (including from overseas), such as consultants and government officials, should be fully utilized. Consultants and government officials, who are from countries where water resources management is advanced, will be able to manage most engineering programs better than instructors from Indonesia since many programs will cover activities with which most PJT staffs are not familiar. Consultants and government officials from abroad have comprehensive knowledge about water resources management.

For training for administration, on the other hand, instructors may better be selected from Indonesian side, especially legal sector, where comprehensive knowledge of laws and regulations of Indonesia is required.

## 5.2 Laws and Regulations Related to W.R.M, and Corporate Management

### (1) Laws and regulations

(1) Sector	Laws and regulations							
(2) Objectives	To be familiarized with principle of water and river laws, water right as well as regulations related to Jasa Tirta, which will be utilized for present activities and new activities.							
(3) Target group	All sections of Persero Jasa Tirta Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method:	Lecture in groups by legal expert							
(5) Instructor	University professor, consultants, or government official who specialize in river laws							
(6) Training period	FY2000							
(7) Remarks	Water/river law and water right are important not only for routine river management, but also for new business development. Staffs in all sections should have basic knowledge on these matters.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Water/river laws		■		■			■	
2)Water right		■		■			■	
3)Regulations(No.5, No.56)		■		■			■	

(2) Corporate management

(1) Sector	Company management							
(2) Objectives	Preparation for integration and shifting status to Persero. Develop skills for corporate management							
(3) Target group	All sections of Persero Jasa Tirta Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method	Lecture in groups by management of Persero Jasa Tirta							
(5) Instructor	University professor, consultants who specialize in management and accounting							
(6) Training period	FY2000							
(7) Remarks	A strong organization is based on staff's awareness on company management, not only in administration, but also in a technical sector. PJT will shift its status to Perseo in 2005, thereafter the concept of company management, especially assets management will become important. This program focuses on teaching the concept on company management.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1) Concept on assets		■						
2) Concept on profit/loss		■						
3) Concept on running company		■						

(3) Inter-agency information system management

(1) Sector	Inter-agency information system management							
(2) Objectives	Develop skills for network and internetworking, and effective use of information							
(3) Target group	All staffs of sections of Persero Jasa Tirta are required to take training.							
(4) Training method	Manufacturer will do training for system development. PJT staffs who are already familiar with the system will do training for end user.							
(5) Instructor	University professor, consultants who specialize in management and accounting							
(6) Training period	FY2003-2004,2005-							
(7) Remarks	After developing system, all staff should be able to operate the system. Continuous training is required.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1) Development of system				■	■			
2) Use of system				■	■	■	■	■

■ Indicates training will be provided continuously for regular basis

### 5.3 Skills Development Program for Technical Sector

#### (1) Basic engineering skills development

To observe/evaluate and make proper judgment for operation and maintenance of river facilities are essential for sediment control, flood damage management, and water supply. All staffs who will be assigned for these sectors should have basic knowledge of hydrology and meteorology as well as knowledge of operation and maintenance of river facilities.

##### (a) Hydrology and meteorology

(1) Sector	Hydrology and meteorology							
(2) Objectives:	Develop basic knowledge and skills required for activities that are responsible for PJT and Persero Jasa Tirta							
(3) Target group:	All staffs in technical sector are required to take training							
(4) Training method	Lecture in groups by experts and on the job training at sites assisted by experts							
(5) Instructor	Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000							
(7) Remarks	Training is divided into lecture sessions and OJT sessions							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Basic concept of hydrology and meteorology		■						
2)Hydrological observation and data management/analysis, evaluation		■						
3)Meteorological observation and data management /analysis, evaluation		■						

##### (b) Operation and maintenance of river facilities

(1) Sector	Operation and maintenance of river facilities							
(2) Objectives	Develop skills for proper operation and maintenance and supervision of river facilities based on meteco-hydrological evaluation, which is developed in the previous training program							
(3) Target group	All staffs in technical sector are required to take training							
(4) Training method	On the job training at sites assisted by experts Training will be carried out through actual activities							
(5) Instructor	Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks								
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)O&M of river facilities (gate, communication)		■	■					
2)Supervision of O&M activities		■	■					

(2) Sector training program

(a) Watershed management

a. Land use management

(1) Sector	Land use management							
(2) Objectives	Develop skills for routine observation at sites, data management, and preparation of land use management plan							
(3) Target group	Staffs in Bureau of research and development, Bureau of technical planning, Bureau of design, Sub-division of watershed management Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method	Actual survey at sites assisted by experts (Training will be carried out through actual activities) Overseas training to get the idea of importance of management plan Attending seminar							
(5) Instructor	Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks								
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1) land use management plan		—						
2) Investigation of forest coverage, land use, soil condition, vegetation, runoff & soil erosion		—						

b. Land slide and erosion prevention management

(1) Sector	Land slide and erosion prevention management							
(2) Objectives	Develop skills for maintenance of sabo facilities							
(3) Target group	Staffs in Bureau of research and development, Bureau of technical planning, Bureau of design, Sub-division of watershed management Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method	Actual survey at sites assisted by experts (Training will be carried out through actual activities) Overseas training to get the idea of evaluation Attending seminar							
(5) Instructor	Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks								
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Preparation of O&M manual		██████████	██████████	██████████				
2)Inspection of sabo facilities		██████████	██████████	██████████				
3)Making inventory survey of infrastructure		██████████	██████████	██████████				
4)Guiding sand mining activities		██████████	██████████	██████████				
5)Repairing damaged structure		██████████	██████████	██████████				

██████████ Indicates training will be provided continuously for regular basis

(b) Management and Operation of FFWS and LWMS

(1) Sector	Management and operation of FFWS & LWMS							
(2) Objectives	Develop skills for management and operation of FFWS and LWMS for W.R.M activities							
(3) Target group:	Staff in Bureau of technical planning, Bureau of monitoring system, Division of O&M Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method	OJT at master station for understanding overview of FFWS Dispatching operator to the site for understanding site OJT at Japan for obtaining basic knowledge							
(5) Instructor	Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks	FFWS (Flood Forecasting Warning System) is essential for W.R.M because it is related to flood control works, flood damage management, water resources, and law water management system. Since activities and equipment used for FFWS is similar to LWMS activities, training for FFWS and LWMS will be carried out together For training 1)-4), electrical, mechanical, and civil engineer, computer system engineer, hydrologist, computer programmer, FFWS operator will be trained, For training 5)-8), FFWS operator and hydrologist will be trained.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1) Overview of FFWS (overseas training)		██████████						
2) Maintenance, modification, update of FFWS & LWMS		██████████						
3) Hydrological data collection and analysis for modification and upgrading of FFWS & LWMS		██████████						
4) Preparation of FFWS & LWMS operation (operation practice and transmission test)		██████████	██████████	██████████	██████████	██████████	██████████	██████████
5) Hydrological data collection and evaluation		██████████						
6) Evaluation of present hydrological condition		██████████						
7) Flood forecasting and its evaluation		██████████						
8) Decision on flood coming based on evaluation		██████████						

██████████ Indicates training will be provided continuously for regular basis

(c) Water Resources Development

(1) Sector:	Water resources development							
(2) Objectives	Develop skills for management and supervision sequence (plan, design, construction) of water resources development							
(3) Target group:	Staffs in Bureau of technical planning, Sub division of water resources, Bureau of design Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method:	On the job training: actual planning, designing, construction works assisted by experts							
(5) Instructor	Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks	Since actual drawings, constructions will be done by consultants or construction companies, main tasks of Persero Jasa Tirata are management and supervision of water resources development: plan, design, construction. Basic knowledge of hydrology and meteorology will be taught in basic engineering skills development. This training focuses on specific skills required for water resources development. Develop skills for specialist needed for each stage of water resources management through OJT.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Planning (hydrology, river engineering, dam engineering, electrical engineering, ground water, economist)		■■■■■■■■■■		■■■■■■■■■■			■■■■■■■■■■	
2)Design (building, structural engineering, concrete engineering, soil mechanics, dam design, construction plan, cost engineering)		■■■■■■■■■■		■■■■■■■■■■			■■■■■■■■■■	
3)Construction (supervision)		■■■■■■■■■■		■■■■■■■■■■			■■■■■■■■■■	

■■■■■■■■■■ Indicates training will be provided continuously for regular basis



(d) Water quality management

The objective of training for water quality management is development of skills for water quality management, data management and evaluation, planning based on R&D and evaluation, actual sampling and data analysis. Training program will be divided into two sections by its activities: 1) Planning and management, 2) Actual sampling and analysis.

a. Planning and management water quality

(1) Sector	Planning and management of water quality							
(2) Objectives	Develop skills for overall water quality management, data management and evaluation, management of monitoring							
(3) Target group:	Staffs in planning & coordination, water quality monitoring, research and development section in Sub division of water quality Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method:	On the Job Training assisted by experts Training at Environmental Management Center (EMC) in Jakarta.							
(5) Instructor	Experts in EMC, Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2002							
(7) Remarks	Targets for this training are the staffs in planning & coordination, water quality monitoring, research and development, which require overall knowledge of water quality and water quality management							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Preparation of plans and programs for water quality management								
2)Coordination of water quality related agencies								
3)Management of water quality monitoring								

b. Actual sampling and analysis

(1) Sector	Sampling and analysis of water quality							
(2) Objectives	Develop skills for actual sampling and analysis.							
(3) Target group:	All staffs in the water quality test in which actual water sampling and analysis are required to take training.							
(4) Training method	On the Job Training assisted by experts Training at Environmental Management Center (EMC) in Jakarta.							
(5) Instructor	Experts in EMC, Experts from the country with which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks	Separate sampling and analysis training will be provided for general condition of water, chemical contents in water, bacilli contents in water.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006-
1)Sampling and analysis for general condition		■	■	■			■	
2)Sampling and analysis for chemical contents		■	■	■			■	
3)Sampling and analysis for bacilli contents			■	■			■	

(c) River environment

Two training programs are provided for river environment.

a. Management of land use

(1) Sector	Management of land use in river area							
(2) Objectives:	Develop skills for management of proper use of land use which will be utilized for recreation and tourism development							
(3) Target group:	Staffs in Sub division of river environment Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method:	Preparation of land use management plan assisted by experts Overseas training to get the idea of land use management On the job training at site (training through actual activities assisted by experts)							
(5) Instructor	Experts from the countries which are advanced in water resources management together with newly recruited experts							
(6) Training period	FY2000-2001							
(7) Remarks	Since river improvement is new to New PJT, there is not enough staff for this sector. Recruitment of biologists and experts for biodiversity is necessary for strengthening the river environment. Training to be familiarized with the concept of land use management is important.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Overview of land use management (overseas training)		■	■	■			■	
2)Land use planning		■	■	■			■	
3)Land use management		■	■	■			■	
4)Regular inspection of land use		■	■	■			■	

b. Management of Biota in river area

(1) Sector:	Management of land use Biota in river area							
(2) Objectives:	Develop skills for observation, analysis and evaluation of Biota in river area that enable staffs to make proper decision on management of river environment							
(3) Target group:	Staffs in planning & coordination, water quality monitoring, research and development in Sub division of water quality Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method:	On the Job Training, training at Environmental Management Center (EMC) in Jakarta.							
(5) Instructor	Experts in EMC, Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks	Since river improvement is new to New PJT, there is not enough staff for this sector. Recruitment of biologists and experts for biodiversity is necessary for strengthening the river environment. Training to be familiarized with the concept of biota management is important.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1) Overview of Biota management in rivers (overseas training)								
2) Investigation Fauna and Flora								
3) Evaluation of present condition								
4) Decision making based on evaluation								

(f) New business development

(1) Sector	New business development							
(2) Objectives:	Develop awareness of new business creation and searching for actual business opportunities as well as preparation of plan and implementation of new business already planned							
(3) Target group:	Staffs in Bureau of corporate management, bureau of marketing Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method:	On the Job Training. New business development assisted by experts							
(5) Instructor	Experts from the countries which are advanced in water resources management							
(6) Training period	FY2000-2001							
(7) Remarks	Business development will be important for new income source for Persero Jasa Tirta. Intensive training for new business development should be completed prior to the year 2005 when PJT will shift its status to Persero.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006-
1)Tourism development								
-Tourism planning		■						
-Facility management		■	■					
-Marketing and promotion		■	■					
2)Industrial water treatment		■	■					
3)New business development		■	■					

**5.4 Skills Development Program for Administrative Sector**

Training for administrative sector is important for preparing new systems in order to cope with integration of PJT, PKB, and PGKS. Objectives of training is not only developing skills for tasks required for managing Jasa Tirta, but also developing skills for creation of new systems, such as MIS and personnel system.

**(1) Basic skills development for common field**

The basic knowledge of administration, human resources development, and finance is prerequisite for the staff in the Directorate for administration & finance since rotation of staff in the directorate is expected to take place. Addition to job rotation, there are chances that some staffs will be assigned to the project sites who should be able to take care of all administrative matters of the project. During the intensive training period, all staffs in the directorate for administration and finance are mandated to take courses for administration including finance, general administration, legal matters, and HRD.

(1) Sector	Management of Jasa Tirta							
(2) Objectives	Develop basic knowledge for policies and systems for management of Persero Jasa Tirta							
(3) Target group	Staffs in all sections of Directorate for administration and finance							
(4) Training method:	Lecture and exercise assisted by management and experts							
(5) Instructor	Experts from outside of PJT (consultants) and management of PJT or staff of personnel section							
(6) Training period	FY2000							
(7) Remarks	Training will be based on policies and systems, which will be decided during preparatory period, of Persero Jasa Tirta. Training will be provided twice: before integration and before changing status							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Administration		■						
2)Human resources development		■						
3)Finance		■						

(2) Sector training program

(a) Accounting

(1) Sector	Accounting							
(2) Objectives	Develop skills for accounting and development and operation of MIS							
(3) Target group:	Staffs in Bureau of Finance Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method	Lecture and exercise assisted by management and experts. Prepare accounting system including MIS assisted by experts							
(5) Instructor	Business consultants							
(6) Training period	FY2000-2004							
(7) Remarks	Concept of accounting is important for managing Persero Jasa Tirta. Concept of asset management and accounting system, including MIS, should be familiarized before changing Jasa Tirta's status in 2005.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1) Financial accounting (profit loss, balance sheet)		■	■	■			■	
2) Managerial accounting (annual budget, evaluation, cost management)		■	■	■			■	
3) Assets management		■	■	■			■	
4) Cost allocation		■	■	■			■	
5) Development and operation of MIS		■	■	■	■	■	■	

■ Indicates training will be provided continuously for regular basis

(b) Human resources development

Bureau of human resources development is responsible for managing personnel matters. The function of this bureau will be important for preparing new systems after integration of PJT, PKB, PGKS and changing status to Persero. The objective of training is to develop skills for managing personnel matters and creating new personnel systems.

Management of training and other matters that are related to personnel policy are responsible for Bureau of human resources development. Since any transitional matters are managed by Implementation monitoring unit, coordination between bureau of human resources development and implementation monitoring unit is important.

(1) Sector	Human resources development							
(2) Objectives	Develop skills for managing personnel for Persero Jasa Tirta by preparing new policy and systems.							
(3) Target group	Staffs in Bureau of human resources development Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method	Experts will assist developing new HRD policies and systems for Persero Jasa Tirta.							
(5) Instructor	Consultants, management of PJT, staff of personnel section							
(6) Training period	FY1999-2004							
(7) Remarks	Training should involve staff in personnel section and staff in management position. HRD master plan is particularly important because it affects future manpower of Persero Jasa Tirta.							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)HRD master plan	■			■			■	
2)Career planning		■	■	■			■	
3)Training program management		■	■	■			■	
4)Performance evaluation		■	■	■			■	
5)Salary system		■	■	■			■	
6)Organization management		■	■	■			■	
7)Operation of MIS		■	■	■	■	■	■	

■ Indicates training will be provided continuously for regular basis



(c) Administration

Changing status Perum to Persero means more tasks for Bureau of administration, such as legal matters and public relations including community participation. Training gives opportunities to check new tasks required for Persero Jasa Tirta and gives training for actual activities

(1) Sector	Administration							
(2) Objectives	Preparation of new policy and develop skills for general affairs and new tasks required for management of Persero Jasa Tirta							
(3) Target group	Staffs in Bureau of administration Staffs in management position (including chiefs and section leaders) are mandatory to take training because they are responsible for teaching to the rest of staff. Other trainee will be selected as needed.							
(4) Training method	Experts will assist developing new administrative policies and systems for Persero Jasa Tirta.							
(5) Instructor	Consultants and management of PJT or staff of personnel section							
(6) Training period	FY2000-2004							
(7) Remarks	Training will be provided twice: before integration and before changing status							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1) Policy making		■	■	■			■	
2) General affairs		■	■	■			■	
3) Legal matters		■	■	■	■	■	■	
4) Public relations		■	■	■	■	■	■	
5) Community participation		■	■	■	■	■	■	

5.5 Routine Training Program

The routine training consists of training for new employees, training for management and training for new tasks and modification/updating of systems. The objective of the training is sustainable skill development and maintaining developed skills. Conditions of W.R.M. keeps changing, so the master plan and systems should be re-evaluated and updated. The training will give chance to review the tasks and skills required.

(1) Training for new employee

Training for new employee will be conducted whenever new employees are assigned to Jasa Tirta. The objective of training is to teach basic concepts that are needed for W.R.M.

(1) Sector	Administration							
(2) Objectives	Teach basic concepts that are needed for W.R.M							
(3) Target group	New employee							
(4) Training method	Training will be managed by Bureau of HRD and implemented by related departments.							
(5) Instructor	PJT staffs							
(6) Training period	FY2000-2020							
(7) Remarks	Training will be held as needed							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Company management								
2)Quality control								
3)Computer operation (MIS, LAN, and systems)								
4)Sector training								

█ Indicates training will be provided continuously for regular basis

(2) Training for management

Training for management is included in intensive training program. In order to maintain a certain level of management and give a chance to staffs who will be promoted to be manager, regular training for management is needed.

(1) Sector	Management training							
(2) Objectives	Develop and maintain management skills							
(3) Target group	Staff in management position and candidate for management							
(4) Training method	Training will be managed by Bureau of HRD and implemented by HRD or consultants.							
(5) Instructor	Staffs in HRD or consultants							
(6) Training period	FY2000-2020							
(7) Remarks	Training will be held regularly							
Training items and schedule	1999	2000	2001	2002	2003	2004	2005	2006
1)Leadership skills								
2)Performance evaluation								
3)Company management								

█ Indicates training will be provided continuously for regular basis

**(3) Training for new tasks and modification and updating of systems**

Any environmental changes, such as personnel promotion and rotation, new projects, new facilities to manage, are target for training. Training should be provided when there is needs.

(1) Sector	All sectors
(2) Objectives	Sustainable skill development and maintaining developed skills
(3) Target group	All Staffs for Persero Jasa Tirta
(4) Training method	Training will be managed by Bureau of HRD and implemented by HRD or consultants, outside sources (attend seminar or lecture)
(5) Instructor	Staffs in HRD or each sector, consultants
(6) Training period	FY1999-2020
(7) Remarks	Training will be held regularly upon request from chief of department or HRD