6 Implementation Program and Action Plan

6.1 Implementation Program

Implementation program for human resources development is proposed as shown below.

Activities	1999	2000	2001	2002	2003	2004	2005	.....	2020
1. Preparation for implementation									
(1) Selection of consultants	▬								
(2) Task analysis	▬								
(3) Preparation of HRD plan	▬								
2. Training Implementation									
(1) Basic skill development		▬							
(2) Skill development for sector		▬	▬	▬					
(3) Routine training		▬	▬	▬	▬	▬	▬	▬	▬
3. Staff selection and placement		▬	▬						
4. Monitoring and Implementation (consultants)		▬	▬	▬					

▬ Continuous training. Training will be provided when needed

6.2 Action Plan

(1) Preparation for implementation

Preparation of human resources development consists of following items.

- Human resources development for Persero Jasa Tirta is important, so the Section of HRD will be strengthened by changing status to Bureau of HRD.

- Consultants should be selected at early stage of Action Plan because implementation of human resources development requires involvement of consultants, which will support preparing HRD development plan and actual implementation monitoring. For sectors related to W.R.M, consultants from countries where water resources management is advanced would be appropriate. For administration, including laws and regulations, consultants from Indonesia would be appropriate.

- Task analysis should be conducted by Bureau of HRD with consultants for preparation of human resources development implementation plan. Task analysis is including the review of job description, appropriate number of staff, task identification, training course objective, and detail design of the training program.

- HRD development implementation plan, which is based on task analysis, should include detail training programs (selection of training method, coordination for overseas training, coordination with other agencies related to training), staff arrangement, and recruitment. Preparation of implementation plan should be carried out by Bureau of HRD with the support of consultants.

- Preparation for implementation of training is recommended to start from 1999 and completed in a year.

(2) Training implementation

Training starts with basic skill development followed by skill development for sector. Training for laws and regulations, basic training for technical sector, and basic training for administrative sector will be completed in 6 to 12 months, followed by sector training programs, which will last 2 to 3 years.

(3) Staff selection and placement

PJT, PKB, and PGKS will be involved in the process of staff selection and placement. Selection of staff who are candidate for joining New PJT and arrangement for the staff who are not able to join New PJT will be considered.

A concern for consolidation is the staffs who will not join New PJT. Possibility of absorbing to MPW Central Region Office, the central government office, local government office, private sector, and the other options should be considered.

Selection and placement of staffs should be completed before the consolidation in 2002.

(4) Assignment of consultants

Several types of consultants will be assigned to monitor and implement HRD plan. At least one consultant will be assigned during implementation period for training monitoring. Consultants who will actually implement programs as instructors and supporting staffs will be assigned during the training period.

(5) Responsible agencies

Bureau of Human Resources Development and Management Development Unit are in charge of implementation. Consultants will always be stationed at Management Development Unit for monitoring the implementation.

6.3 Project Cost

Project cost is estimated by following assumptions

- Consultants and government officials from overseas will take care of most training programs.

- One consultant (as a team leader) will always station at Management Development Unit during implementation for monitoring of HRD implementation (3 years).

- Each training program requires at least 4 man/month/year of work, including preparation of training, actual training, and follow up.

- The total man/month required for training from the year 1999 to 2001 is estimated to be 230 M/M for foreign consultants.

- Local cost, including cost for local consultants, transportation and others, is assumed to be 10% of foreign portion of consulting fees.

- Equipment and materials used for training is estimated to be 15% of foreign portion of consulting fees.

- The total cost for human resources development is estimated to be 18,000million Rp. for three years or 6,000 million Rp. per year. (64 million Rp./month is used for foreign portions of consulting fees.)

Table A13.1 Evaluation of Manpower of PJT (1/4)

(A)Works and Duties	(B) No. of Staff	Manpower Requirement for (C) Specialty															(D) Education Level					(E) Job Experience				(F) Evaluation for Present Manpower		
* group in a section		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	1	2	3	4	No. of Staff	Specialty	Education Level
1 Directorate of Technical Affairs																													
1.1 Bureau of Research and Development	24	1	3	2			7	4	1			1	2			1	2	3	6	1	14	1	4	7	3	10			
Chief of Bureau	1																1	1							1	C	A	A
1.1.1. Coordinator I	1			1														1						1				
* Long Term Plan	1		1																1				1						
* Studies	1												1						1	1			1						
* Master Plan	1			1															1							1			
* Administration	1												1								1					1			
1.1.2. Coordinator II	1	1																1								1	C	B	A
* Water Quality	15		1				7	4	1			1					1		1		13	1	2	7		6			
* Land Conservation	1		1																1						1				
* Law and Legislation	1															1			1							1	C	A	A
1.2 Bureau of Programming and Control	29	1	7	3	7	2		1			1	2	1	1	2		1	5	4	5	14	1	2	1	2	23			
Chief of Bureau	1														1			1								1			
1.2.2. Program Planning and Controlling Section																													
* Chief of Program Planning and Controlling Section	1					1													1							1	A	B	A
* Coordinator	1	1																1								1			
* Planning/Programming	2											1			1					1	1					2	A	A	A
* Program controlling	3		1			1						1									3				1	2	C	C	C
1.2.3. Technical Planning and Controlling Section																													
* Chief of Technical Planning and Controlling Section	1			1														1								1	A	A	A
* Coordinator	1			1														1							1				
* Technical Planning and Controlling	5		4					1											2		3		1			4	A	A	A
* Investigation Survey	3		2														1			1	1	1				3	C	C	C
1.2.4. Computer and FFWS Unit																													
* Chief of Computer and FFWS Unit	1			1														1								1	A	B	A
* FFWS/Telecommunication Operation	6				6															1	5			1		5	A	A	A
* Hydrological Application	1										1									1			1				A	A	A
* Water Quality Application	1												1						1							1	A	A	A
* Data Processing Center	2				1									1						1	1					1	A	A	A
1.3 Bureau of Corporate Development	11	2	1	1					1				5				1	3	5	3	1		3			8			
Chief of Bureau	1												1					1								1			
1.3.1. Coordinator I	1	1																	1							1			
* Area Development	2		1	1														1	1							2			
* Corporate Development	2								1				1						2				2						
* Administration	1																1				1					1			
1.3.2. Coordinator II	1	1																1								1			
* Corporate Development	1												1							1						1			
* Building Small Business and Cooperatives	1												1						2							1			
* Administration	1												1						1				1						
1.4 Unit for Counterparting	3	1	2															1	2								B	B	A

Table A13.1 Evaluation of Manpower of PJT (2/4)

(A)Works and Duties * group in a section	(B) No. of Staff	Manpower Requirement for (C) Specialty 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	(D) Education Level 1	2	3	4	5	(E) Job Experience 1	2	3	4	(F) Evaluation for Present Manpower No. of Staff	Specialty	Education Level
2 Directorate of Operation																													
2.1 Division of U/S Water Service	82	2	25		10	15	1	1		1		9	2		1		15	2	3	5	46	26	6	14	6	54	B	A	A
Chief of Division	1	1																1								1			
2.1.1. U/S Sub Division 1	1		1																	1						1			
* Operation	19	1	2		5	5						3					3	1	1	1	7	9	2	4	2	11			
* Maintenance	11		7				1						1		1		1			1	9	1		1		10			
* Technical Administration	4		2									1	1								4		1			3			
2.1.2. U/S Sub Division 2	1		1																1							1			
* Operation	19		4		3	4		1				2					5			1	9	9	1	3	3	12			
* Maintenance	8		3			2											3				4	4		2	1	5			
* Technical Administration	3											1					2				1	2	1			2			
2.1.3. U/S Sub Division 3	1								1										1							1			
* Operation	7		1		1	2						2					1			1	5	1		2		3			
* Maintenance	5		3		1	1															5			2		3			
* Technical Administration	2		1			1															2		1			1			
2.2 Division of D/S Water Service	71	1	23		9	4	1	1				2	4				26	1	3	3	39	25	7	7	1	56			
Chief of Division	1	1																1								1			
2.2.1. D/S Sub Division 1	1		1																	1						1	A	A	B
* Operation	20		4		6												10		2		9	9		4	1	15	A	A	A
* Maintenance	10		4			2		1									3				7	3		1		9	B	A	A
* Technical Administration	10		3										2				5				7	3	2	1		7	B	A	B
2.2.2. D/S Sub Division 2	1		1																	1						1	A	A	B
* Operation	5		1		1												3					5		1		4	B	A	B
* Maintenance	2		2																		2					2	B	A	B
* Technical Administration	1																1					1				1	B	A	B
2.2.3. D/S Sub Division 3	1		1																	1						1	A	A	B
* Operation	8		1		1	1						1	1				3		1		4	3	5			3	A	A	B
* Maintenance	9		4		1	1	1					1					1				8	1				9	B	A	B
* Technical Administration	2		1										1								2					2	B	A	B
2.3 Division of Non Water Service	70	2	3	1	9	30		1				5		1	1		17	4	2	7	38	19	2	4	7	57	A	A	B
Chief of Division	1	1																1								1			
2.3.1. Sub Division of Equipment and Maintenance Equipment	1					1														1						1			
* Equipment Maintenance	24				3	16						2					3			5	11	8			2	22	A	A	A
* Equipment Service	23				5	13						3					2				16	7	1			22	A	A	A
* Technical Administration	4		1														3				4					4	A	A	A
2.3.2. Sub Division of Construction and Consulting Service	1							1										1								1			
* Construction Service	1			1														1								1	B	A	B
* Consulting Service	2	1	1															1	1						2		A	A	A
* Technical Administration	1		1																		1					1	B	A	B

Table A13.1 Evaluation of Manpower of PJT (3/4)

(A)Works and Duties	(B) No. of Staff	Manpower Requirement for																								(F) Evaluation for Present Manpower		
		(C) Specialty															(D) Education Level					(E) Job Experience						
* group in a section		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	1	2	3	4	No. of Staff	Specialty	Education Level
2.3.3. Sub-Division of Tourism Service	1														1				1							1			
* Selorejo Park	5				1												4				3	2		3		2	B	A	B
* K. Kates Park	5																5				3	2		1	3	1	B	B	B
* Administration	1													1						1			1						
2.4 Quality Management Unit	12		3							1	1			3			4	1	5		5	1	2	1	2	7	A	A	A
* Technical System Development	3		2								1							1	2				1			2			
* Non Technical System Development	2													2					2						1	1			
* Document Control	1									1									1				1						
* Administration	6		1											1			4				5	1		1	1	4			
3 Directorate of Administration and Finance																													
3.1 Bureau of Finance	16												6	5	5			4	6	2	3	1	4			5	7			
Chief of Bureau	1												1					1									1	B	A	A
3.1.1. Section of Budgeting	1												1						1								1	B	A	A
* Taxation	1														1					1							1	B	A	A
* Cashier	1														1						1						1	B	A	A
* Budget Calculation	1													1						1							1	B	A	A
* Budget Allocation	1														1						1					1		B	B	B
* Debt Administration	2												1		1				1			1				2		B	B	A
3.1.2. Section of Financial Accounting	1												1						1								1	B	A	A
* Bookkeeping	2													2				1	1				2					B	A	A
* Inputting and Process Data	2													2				1	1						1	1	B	A	A
* Verification	1														1						1				1		B	B	B
3.1.3. Section of Managerial Accounting																													
* Reporting	1												1					1					1				B	A	A
* Development of Accounting	1												1						1				1				B	A	A
3.2 Bureau of HRD and General Affair	55		7		1	5	1			1		4	4	1	6	2	23		12	5	20	18	2	2	10	41			
Chief of Bureau	1												1						1							1	A	A	A
3.2.1. Section for Human Resources	1											1								1						1	A	A	A
* Staff Compensation	3												1				2		1		2				1	2	B	A	A
* Building Staff	2														1	1			1	1					1	1	A	A	A
* Health Affairs	2					1											1		1		1					2	A	A	A
* Study Duty	6		4							1			1						4	2				1		5	A	A	A
* Corporate Administration	1														1				1							1	B	A	A
* Education and Training	1														1				1				1				B	A	A
3.2.2. Section for House Keeping and Secretary	1															1			1							1	A	A	A
* Housekeeping and Transportation	23				1	3						1			3		15				7	16		1	5	17	A	A	A
* Secretariat	4											2					2				3	1	1			3	B	A	A
* Documentation	3		1			1							1								3				1	2	B	B	B
3.2.3. Section of Logistic	1		1																	1						1	A	A	A
* Purchasing	2																2				2				1	1	A	A	A
* Warehouse	2		1			1															2					2	A	A	A
* Inventory and Asset	2													1			1		1			1			1	1	A	A	A

Table A13.1 Evaluation of Manpower of PJT (4/4)

(A)Works and Duties * group in a section	(B) No. of Staff	Manpower Requirement for (C) Specialty															(D) Education Level					(E) Job Experience				(F) Evaluation for Present Manpower		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	1	2	3	4	No. of Staff	Specialty	Education Level
3.3 Security Unit	59		2											2			55			2	13	44				2			
* Security Coordination	2																2			2						2	A	A	A
* Security	57		2											2			53				13	44					A	A	A
4 Unit for Internal Supervision	4		1			1									1		1		2	1	1			1		3			
4.1 Chief of Internal Audit Unit	1					1													1							1	A	A	A
4.2 Audit Team																													
4.2.1. Lead Auditor	1														1				1							1	A	A	A
4.2.2. Auditor																													
* Operational	1		1																	1						1	A	A	A
* Financial	1																1				1			1			B	A	A
Total	426	10	77	7	36	57	10	8	2	3	2	23	24	13	16	3	345	24	50	34	194	136	32	37	36	268			

Data Source : PJT

Specialty:

1 Hydrology	5 Mechanical Engineering	9 Agriculture	13 Accounting
2 Civil Engineering	6 Chemistry	10 Information	14 Administration
3 Water Management	7 Geology	11 Other Engineering	15 Law
4 Electrical Engineering	8 Environmental Engineering	12 Economics	16 Others

Education level:
1 Master course
2 Bachelor course
3 Diploma
4 Senior high school
5 Junior high school and elementary school

Experience:
1 Less than 5 years
2 6-10 years
3 11-15 years
4 16 years or more

Evaluation:
A : appropriate(satisfied).
B : Not appropriate(satisfied) but manageable.
C : causing trouble

Table A13.2 Evaluation of Manpower of PKB (1/3)

(A)Project and Assistant	(B) No. of Staff	Manpower Requirement of																								(F) Evaluation of Present Manpower		
		(C) Specialty															(D) Education Level					(E) Job Experience						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	1	2	3	4	No. of Staff	Specialty	Education Level
I Master Office of Brantas River Basin Development Project	131	1	19		1	10		1	1	1	1		5	4	5		82	10	20	12	62	27	23	19	13	76			
1 Project Manager	1		1															1								1		A	A
1.1 Planning Staff Head	1		1															1								1	A	A	A
1.1.1. Assistant of Public Planning	6		3					1	1								1	1	2	1	2		1	2	1	2	A	A	A
1.1.2. Assistant of River Dam Planning and Drainage	6	1	4														1	3	1		2		1	1	1	3	A	A	A
1.1.3. Assistant of Electric Planning	7				1	3											3		1	3	3		1	1		5	A	A	A
1.2 Managerial Staff Head	1		1															1								1	A	A	A
1.2.1. Assistant of Managerial Planning and Programming	7		2												1		4	1	1		4	1	2	1		4	A	A	A
1.2.2. Assistant of Civil Working Managerial Establishment	13		4										2				7	1	3	2	7		2	4		7	A	A	A
1.2.3. Assistant of Mechanical and Electrical Working Establisment	30					5											25		1	2	13	14	4	5	1	20	A	A	A
1.3 Administration Staff Head	1														1			1								1	A	A	A
1.3.1. Assistant of Organization and Official	14		2			2					1		2		1		6		5	2	7		3		1	10	A	A	A
1.3.2. Assistant of Finance	13													4	1		8		3	2	7	1	2	1	4	6	A	A	A
1.3.3. Assistant of Public Business	31		1							1			1		1		27		3		17	11	7	4	5	15	A	A	A
II Development and Conservation Project of Brantas River Resources	97		16		6	13				2		11		2	9		38	5	6	6	51	29	8	19	8	62			
1 Project Manager	1		1															1								1		A	A
1.1 Assistant of Technique	11		5		1					2		1					2	2			9		3	2	1	5	A	A	A
1.2 Assistant of Program ming and Managerial Control	32		3		3	13						2			1		10		1	3	19	9	1	6	4	21	A	A	A
1.3 Assistant of Financical Administration	9													1	4		4		2		7		1	4		4	A	A	A
1.4 Assistant of Public Administration	30		3		2							6			1		18		2	1	8	19	3	4	2	21	A	A	A
1.5 Treasurer	6											1		1	3		1		1		5			1	1	4	A	A	A
1.6 Sub Project Manager of Wiligi Dredging																											A	A	A
1.7 Sub Project Manager of Boezam and Lesti Dredging	5		3														2	2		2	1			1		4	A	A	A
1.8 Sub Project Manager of Sampean Baru Dredging	3		1									1					1				2	1		1		2	A	A	A
III Water Resources and Brantas River Flood Control Project	234		58		13	27	2					18	1	7	12		96	3	14	13	125	79	24	61	14	135			
1 Project Manager	1		1															1								1		A	A
1.1 Assistant of Technique	20		17			2											1	2	5	1	10	2	5	2	2	11	A	A	A
1.2 Assistant of Program ming and Managerial Control	58		9		6	12						5		1			25		1	4	27	26	5	12	3	38	A	A	A
1.3 Assistant of Financical Administration	9											2	1	2	1		3		3		6		1	3		5	A	A	A
1.4 Assistant of Public Administration	49		6		1	1	2					6		3	7		23		3	2	31	13	6	18	3	22	A	A	A
1.5 Treasurer	5											2		1			2		1		4		1	1		3	A	A	A
1.6 Sub Project Manager of Surabaya I	20		7			1						2			1		9			2	9	9		3		17	A	A	A

Table A13.2 Evaluation of Manpower of PKB (2/3)

(A)Project and Assistant	(B) No. of Staff	Manpower Requirement of																								(F) Evaluation of Present Manpower		
		(C) Specialty															(D) Education Level					(E) Job Experience						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	1	2	3	4	No. of Staff	Specialty	Education Level
1.7 Sub Project Manager of surabaya II	23		9			1						1			2		10			3	12	8	3	5	1	14	A	A	A
1.8 Sub Project Manager of Widas & Kediri	48		9		6	10									1		23		1	1	26	21	3	17	5	24	A	A	A
IV Wonorejo Dam Construction Project	180		61	2	12	13		1		1		6	2	4	19	1	58	5	15	10	87	63	9	29	10	132			
1 Project Manager	1		1															1								1		A	A
1.1 Assistant of Technique	28		18		1	2						1					6	1	4	1	16	6	5	6	1	16	A	A	A
1.2 Assistant of Program ming and Managerial Control	45		10		8	5		1							2		19	1	1	3	16	24	2	5	1	37	A	A	A
1.3 Assistant of Financical Administration	10												1	3	4		2		2	1	6	1	1	1	2	6	A	A	A
1.4 Assistant of Public Administration	37		1		1	2				1		3		1	8	1	19		3	2	12	20	1	3	4	29	A	A	A
1.5 Treasurer	5											1	1		2		1		2		2	1		1		4	A	A	A
1.6 Sub Project Manager of Facility	17		6		1	2						1			1		6		1	2	8	6		3	1	13	A	A	A
1.7 Sub Project Manager of Dam	14		10		1										1		2		1		12	1		5		9	A	A	A
1.8 Sub Project Manager of Segawe	11		6	2		1									1		1	2			7	2		2	1	8	A	A	A
1.9 Sub Project Manager of Ambulance Building	12		9			1											2		1	1	8	2		3		9	A	A	A
V Brantas River Water Supply Project	98		28	1	2	10	1					3	4	2	9		38	3	9	8	44	33	5	8	3	82			
1 Project Manager	1		1															1								1		A	A
1.1 Assistant of Technique	15		11	1													3	1	1	2	7	4		2		13	A	A	A
1.2 Assistant of Program ming and Managerial Control	24		3			8									1		12		1	2	7	14	1	2	1	20	A	A	A
1.3 Assistant of Financical Administration	9		3										2	1	3				2	3	4		1			8	A	A	A
1.4 Assistant of Public Administration	32		1		1		1					1	2		4		22		3		14	14	3	3	2	24	A	A	A
1.5 Treasurer	3											1		1	1				1		2			1		2	A	A	A
1.6 Sub Project Manager of Navigation	7		5									1					1	1		1	4	1				7	A	A	A
1.7 Sub Project Manager of Navigation	7		4		1	2													1		6					7	A	A	A

Table A13.2 Evaluation of Manpower of PKB (3/3)

(A)Project and Assistant	(B) No. of Staff	Manpower Requirement of (C) Specialty															(D) Education Level					(E) Job Experience				(F) Evaluation of Present Manpower		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	1	2	3	4	No. of Staff	Specialty	Education Level
VI Hydro Electire Power Project	148		17		12	26	1					10	1	2	15		64	1	8	8	72	59	10	41	23	74			
1 Project Manager of Hydropower Project	1					1												1								1		A	A
1.1 Assistant of Technique	13		7		1							2					3		3	1	8	1	2	5		6	A	A	A
1.2 Assistant of Program ming and Managerial Control	11		4		3	1						1					2		1	1	9		2	3	1	5	A	A	A
1.3 Assistant of Financical Administration	10				1								1	2	4		2		2	1	7		1	1	3	5	A	A	A
1.4 Assistant of Public Administration	41		1		1	3	1					7			5		23		1		22	18	2	10	10	19	A	A	A
1.5 Treasurer	4														3		1		1		3					4	A	A	A
1.6 Sub Project Manager of Hydropower I (Mechanical Electric)	44				6	21									2		15			4	18	22	3	11	4	26	A	A	A
1.7 Sub Project Manager of Hydropower II (Civil Works)	24		5												1		18			1	5	18		11	5	8	A	A	A
VI Duty for Extention Study	2		2																	2						2			
Total	890	1	201	3	46	99	4	2	1	4	1	48	13	21	69	1	376	27	72	59	441	290	79	177	71	563			

Data Source : PKB

Specialty:

1 Hydrology	5 Mechanical Engineering	9 Agriculture	13 Accounting
2 Civil Engineering	6 Chemistry	10 Information	14 Administration
3 Water Management	7 Geology	11 Other Engineering	15 Law
4 Electrical Engineering	8 Environmental Engineering	12 Economics	16 Others

Education level:
1 Master course
2 Bachelor course
3 Diploma
4 Senior high school
5 Junior high school and elementary school

Experience:
1 Less than 5 years
2 6-10 years
3 11-15 years
4 16 years or more

Evaluation:
A : appropriate(satisfied).
B : Not appropriate(satisfied) but manageable.
C : causing trouble

Table A13.3 Evaluation of Manpower of PGKS

(A)Works and Duties	(B) No. of Staff	Manpower Requirement for (C) Specialty																(D) Education Level					(E) Job Experience				(F) Evaluation for Present Manpower		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	1	2	3	4	No. of Staff	Specialty	Education Level
I ADMINISTRATION	98	3	17	0	2	12	0	2	0	0	0	4	4	4	8	1	8	3	12	19	23	8	1	0	6	58			
1 Treasurer	5												1	1	2	1			2	1	2					5	A	A	A
2 Planning Assistant	19	3	11					2				3						3	2	6	8				2	17	A	A	A
3 Implementation Assistant	22		5		2	8							1	2			4		4	6	6	6			2	20	A	B	A
4 Operation and Land Affair Assistant	10		1			4						1	1		1		2			4	4	2				10	A	B	B
5 Finance Assistant	9												1	1	5		2		4	2	3		1		2	6	A	A	A
6 General Assistant	33					2						3	2	3	1		22			2	11	20	5	1	2	25	A	B	A
II MT. KELUD	17	0	8	0	0	0	0	1	0	0	1	1	0	1	1	0	4	0	3	4	8	2	4	0	3	10			
II.1 Konto River	5		2								1				1		1		1	1	2	1	1		2	2	B	A	A
II.2 Dermo River	7		3									1		1			2		1	2	3	1	2		1	4	A	A	A
II.3 Badak River	5		3					1									1		1	1	3		1			4	B	A	A
III MT. SEMERU	127	2	31	0	7	12	0	1	0	0	0	1	10	3	0	6	54	1	11	16	50	49	10	18	45	54			
III.1 Treasurer	4												1	1		2			3		1			2		2	A	A	A
III.2 Technical Assistant	60	1	15		6	11		1					3				23	1	3	5	31	20	2	7	20	31	B	A	A
III.3 General Assistant	38		1		1								5	2		4	25		5	1	9	23	5	5	18	10	A	A	A
III.4 Glidig River	7		4									1					2			3	2	2	1	1	3	2	B	A	A
III.5 Mujur River	10	1	5										1				3			4	3	3	2	2	1	5	A	A	A
III.6 Rejali River	8		6			1											1			3	4	1		1	3	4	B	A	A
Total	242	5	56	0	9	24	0	4	0	0	1	6	14	8	9	7	66	4	26	39	81	59	15	18	54	122			

Data Source : PGKS

Specialty:

1 Hydrology	5 Mechanical Engineering	9 Agriculture	13 Accounting
2 Civil Engineering	6 Chemistry	10 Information	14 Administration
3 Water Management	7 Geology	11 Other Engineering	15 Law
4 Electrical Engineerin	8 Environmental Engineering	12 Economics	16 Others

Education level:
1 Master course
2 Bachelor course
3 Diploma
4 Senior high school
5 Junior high school and elementary school

Experience:
1 Less than 5 years
2 6-10 years
3 11-15 years
4 16 years or more

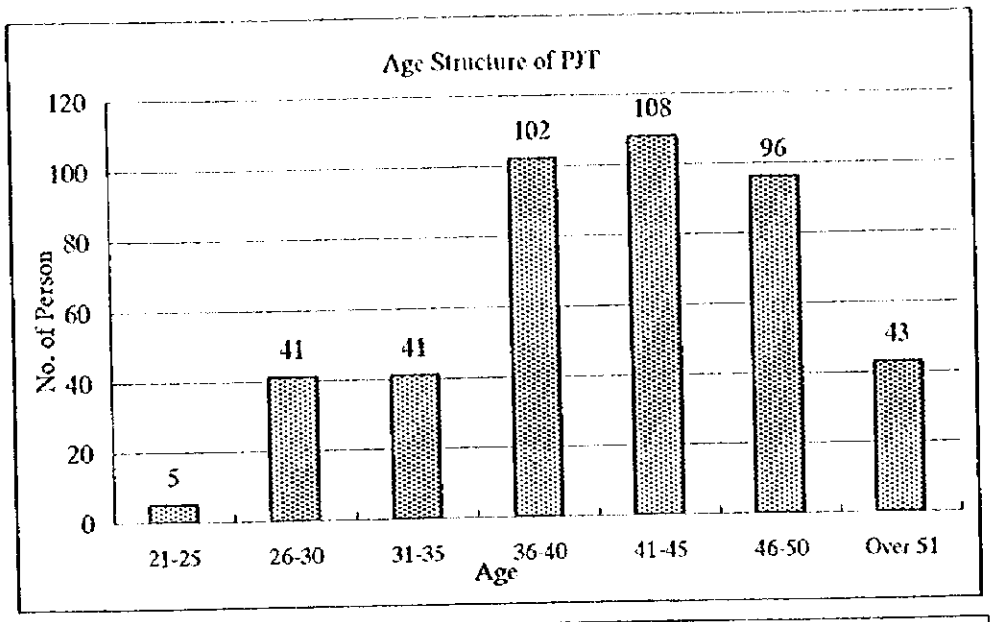
Evaluation:
A : appropriate(satisfied).
B : Not appropriate(satisfied) but manageable.
C : causing trouble

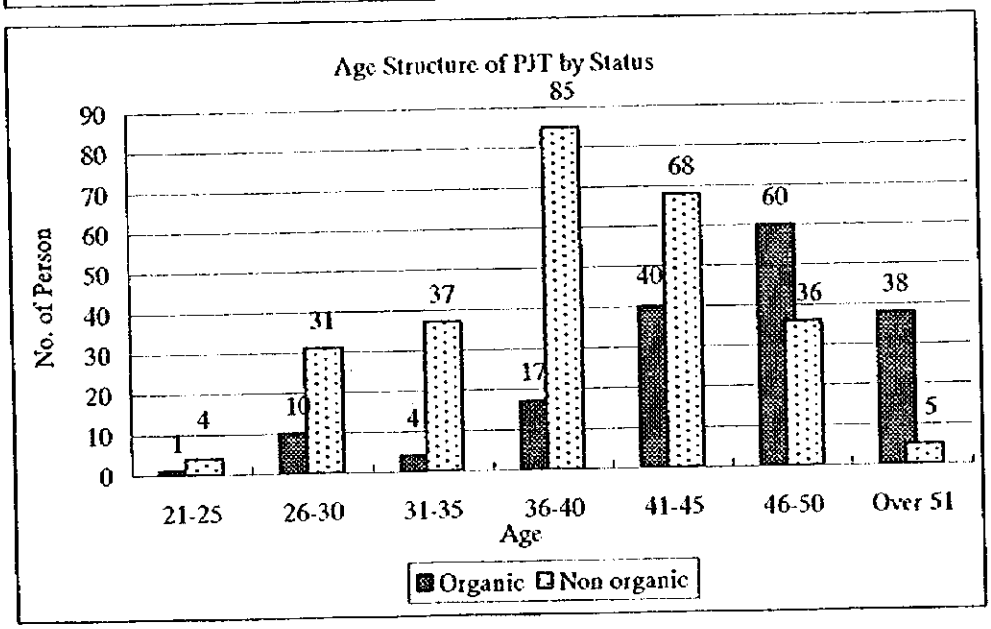
Table A13.4 Estimated Manpower Requirement of New PJT After the Consolidation In The Year 2002

Tasks required for WRM	(A) New PJT	(B) Management Unit of New PJT: Dir. for Technical Affairs	B. of Research & Development	B. of Technical Planning	B. of Design	B. of Monitoring System	Dir. for Infrastructure	Div. of Development	Sub-Div. of Water Resources	Sub-Div. of River Improvement	Sub-Div. of Land Conservation	Div. of Operation & Maintenance	Sub-Div. of Up-Stream	Sub-Div. of Down-Stream	Div. of Environment	Sub-Div. of Water Quality	Sub-Div. of Watershed Management	Sub-Div. of River Environment	B. of Marketing	Dir. for Business Development	B. of Corporate Planning	B. of Corporate Management	Dir. For Administration & Finance	B. of Administration	Section of General Affairs	Section of Legal Affairs	Section of Public Relations	B. of HRD	B. of Finance	Section of MIS	Section of Finance	Internal Auditing Unit	Quality Management Unit	Management Development Unit
I. WATERSHED MANAGEMENT(Mountainous area)																																		
I.1 Land use management	10	2	2				8								8		8																	
I.2 Land slide and erosion prevention management	24	8	2	4	2		16	11			11				5		5																	
I.3 Sediment control	74	17	2	4	11		57	18	9	9		39	20	19																				
I.4 G.Kelud debris control	40	10	2	4	4		30	10			10	8	7	1	12		12																	
II. FLOOD MANAGEMENT(incl. River Management)																																		
II.1 Regulations (Legislation)																																		
II.2 Flood control works	71	20	3	9	11	6	42	8		8		34	17	17																				
II.3 Flood damages management	75	10	2	5		3	65					65	36	29																				
III. WATER SUPPLY MANAGEMENT																																		
III.1 Regulations (Legislation)																																		
III.2 Water supply	53	4		4			49					49	24	25																				
III.3 Water resources	54	13		2	8	3	41	34	34			7	3	4																				
III.4 Water balance	3	3		2		1																												
III.5 Low water management system(LWMS)	33	7		3		4	26	2	2			24	12	12																				
IV. WATER QUALITY MANAGEMENT																																		
IV.1 Regulations (Legislation)																																		
IV.2 Planning and coordination	7						7								7	7																		
IV.3 Water quality monitoring (reporting)	6						6								6	6																		
IV.4 Research and development	5						5								5	5																		
IV.5 Water quality test(sampling and analysis)	19						19								19	19																		
V. RIVER ENVIRONMENT																																		
V.1 Land use in river area(and surrounding)	5						5								5			5																
V.2 Biota in the river area	3						3								3			3																
V.3 Recreation in river space	8																			8		8												
VI. W.R.M. MASTER PLAN																																		
VII. NEW BUSINESS DEVELOPMENT	15																			15	5	5	5											
VIII. INSTITUTION																																		
VIII.1 Water/river law	1																						1	1		1								
VIII.2 Water right	1																						1	1		1								
XIX. ORGANIZATION																																		
XIX.1 Administration and Finance	16						4		2	2	2	4	2	2									12		4		2	12		14	3	5	12	7
XIX.2 Inter-agency information system management	11	11				11																												
XIX.3 Community participation	6																						6	6		6								
Total	593	114	13	37	36	28	389	89	47	19	23	230	121	109	70	37	25	8		23	5	13	5	43	14	4	2	8	12	17	14	3	5	12	7

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

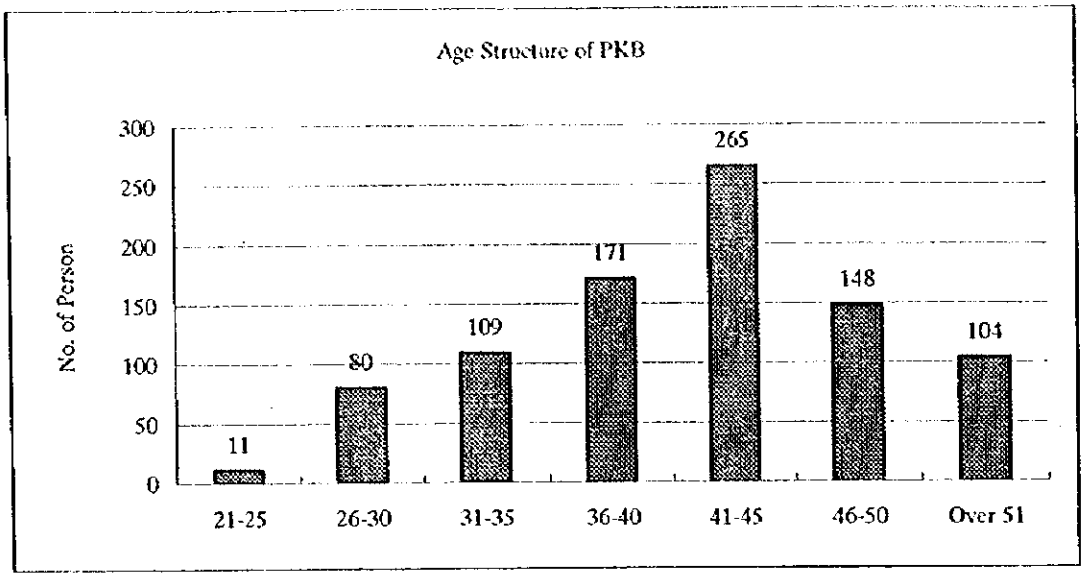
Figure A.13.1 Age Structure of PJT

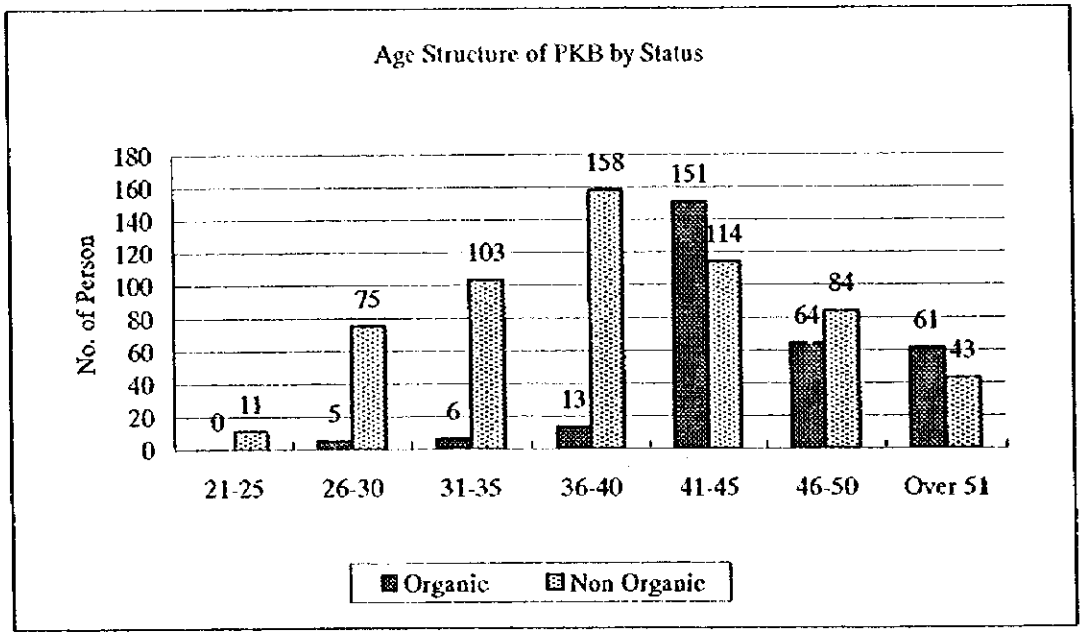




Data Source : PJT

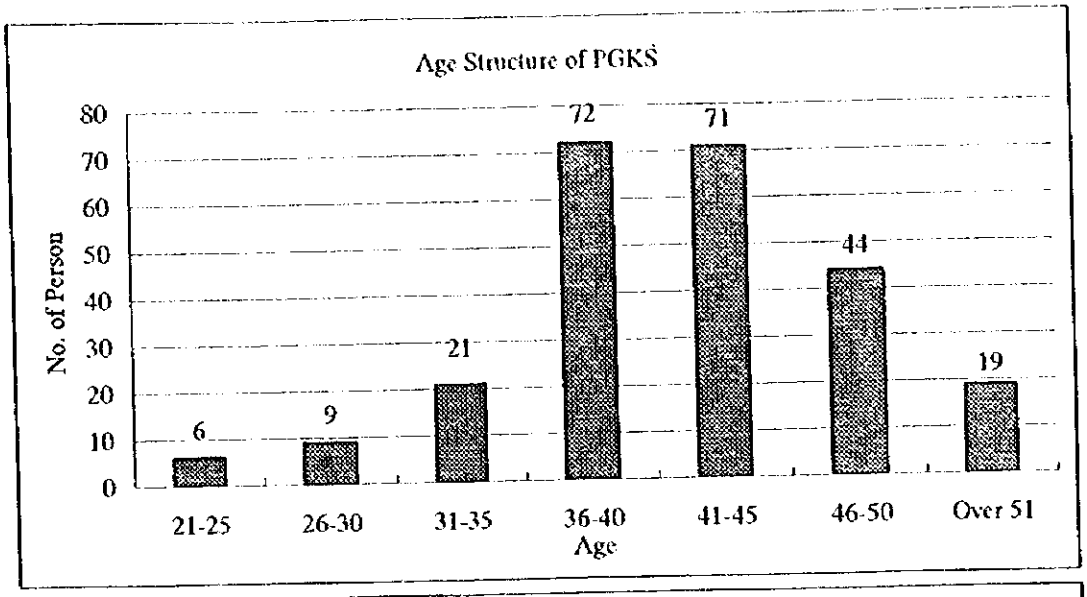
Figure A.13.2 Age Structure of PKB

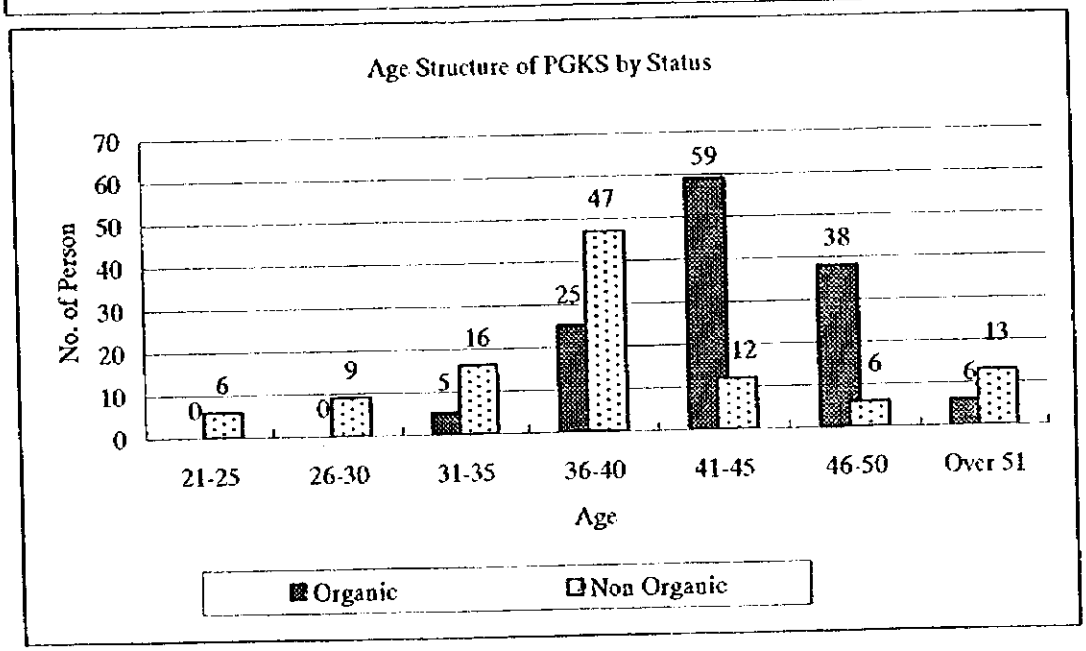




Data Source : PKB

Figure A.13.3 Age Structure of PGKS





Data Source : PGKS

ANNEX – 14

FINANCIAL PLAN AND BUDGET RESOURCES

ANNEX - 14 FINANCIAL PLAN AND BUDGET RESOURCES

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1 Operation Record of PJT

The PJT was established based on Government Regulation No. 5/1990 (the Inauguration Law) as a public corporation, and commenced the operation in 1991. It is a self-supporting corporation independent of the state budget. It was initiated as a profit center unit in accordance with Letter of Decision of Minister of Public Works No. 9/KEP/RUPS/1995, dated Jan. 18, 1995.

In order to analyze the operating and financial positions and forecast future development, consideration is given to the figures of its financial statements from the beginning to date. English translation of PJT annual report in 1995 and 1996 is in the Data Book. The figures of the financial statements are summarized as follows:

Summary of B/S , P/L and Financial Ratios

Rp.million

Fiscal Year	<1991>	<1992>	<1993>	<1994>	<1995>	<1996>
Balance Sheet						
Current assets	7,294	12,579	14,928	14,740	14,898	13,912
Fixed assets	11,606	10,191	9,492	8,387	10,330	10,744
Other assets	271	357	464	2,429	2,490	2,903
Total assets	19,171	23,127	24,884	25,556	27,718	27,559
Current liabilities	906	2,742	3,401	4,912	5,527	4,064
Other liabilities	0	339	108	0	0	0
Total liabilities	906	3,081	3,509	4,912	5,527	4,064
Net Profit	260	1,798	1,558	1,805	2,900	3,479
Equity	18,005	18,248	19,817	18,839	19,291	20,016
Equity & Liability	19,171	23,127	24,884	25,556	27,718	27,559
Profit & Loss Statement						
Revenue	4,395	11,768	13,073	14,638	18,765	21,049
Sales of Electricity	1,946	5,071	5,953	6,131	9,673	9,898
Sales of water service	702	4,336	4,307	5,414	6,682	7,817
Tourism	326	454	743	320	389	479
Other revenue	1,421	1,907	2,070	2,773	2,021	2,855
Operating Expense	4,766	9,887	11,518	12,913	16,389	18,062
Operating Income	-371	1,881	1,555	1,725	2,376	2,987
Non-operating Revenue	664	1,354	1,555	1,566	1,627	1,783
Non-Operating Expense	0	0	57	42	4	176
Non-operating Income	664	1,354	1,498	1,524	1,623	1,607
Income before tax	293	3,235	3,053	3,249	3,999	4,594
Income tax	3	1,437	1,495	1,444	1,099	1,115
Net income	260	1,798	1,558	1,805	2,900	3,479

Fiscal Year	<1991>	<1992>	<1993>	<1994>	<1995>	<1996>
Financial ratios						
Capital ratio	95.3%	86.7%	85.9%	80.8%	80.1%	85.3%
Current ratio	805%	459%	439%	300%	270%	342%
Turn over (Revenue/Total assets)	0.2	0.5	0.5	0.6	0.7	0.8
Op. income ratio (Op. income/revenue)	-8.4%	16.0%	11.9%	11.8%	12.7%	14.2%
Op. expense ratio (Op. expense/revenue)	108.4%	84.0%	88.1%	88.2%	87.3%	85.8%
Return on Equity (Net profit/equity & profit)	1.4%	9.0%	7.3%	8.7%	13.1%	14.8%
Reserve ratio (Reserve/net profit)		93.5%	87.3%	-62.8%	25.0%	25.0%
Tax ratio (Tax/profit bfr tax)	10.9%	44.4%	49.0%	44.4%	27.5%	24.3%

An analysis of the financial statements including balance sheet and profit and loss statement was carried out based on the latest three(3) years figures which are compiled in Tables A14-1 to A14-3. Main features are summarized below.

1.1 Balance Sheet

(1) Due from PLN amounted to Rp. 3,266 million at the end of 1995, which was 33.8% of the year revenue from PLN and 11.7% of total asset. This reveals some trouble lies in price negotiation between two parties. Since the issuance of new tariff was on November 15, 1995, settlement of the invoice issued by PJT was carried over to the beginning of 1996. Finally they were paid by PLN within 1.5 months ahead of the due date. Its account receivable outstanding decreased by Rp. 1,273 million to normal level at the end of 1996. Based on the agreement signed between PLN and PJT, the price was settled at Rp.11.20/kWh in 1996 and Rp.11.76kWh in 1997. For years thereafter, an annual increase of 5% was agreed up to the year 2000.

(2) A problem is seen in the account receivable of the several private corporations who rented construction equipment from PJT. The outstanding as of 1996 is Rp.846 million, out of which Rp.398 million is the delay in payment. The account receivable of Rp.196 million was assigned to the State Account Receivable and Auction Agency for the settlement.

(3) As shown in Table A14-4 Company Performance Trend, the collection period which reflects the management of account receivable was improved from 3.7 months in1995 to 2.5 months in 1996. While the payable period which is a control ratio for a liability was 1.1 months in 1995 and 2.1 months in 1996. Consequently, the difference which affects the company's cash position improved from -2.6 months to -0.4 months between 1995 and 1996.

(4) The capital ratio (ratio of equity to total assets) increased from 80.1% in 1995 to 85.3% in 1996.

1.2 Profit and Loss Statement

(1) The O&M expense increased in 1995 due to the dredging of Sengguruh reservoir, that cost PJT for Rp.1.6 billion in 1995 and Rp.1.2 billion each in 1996 and 1997.

(2) According to Article No.55 of the Inauguration Law, profit of the year should be appropriated in the following manner: 55% to national development fund to be paid to the government, 25% to reserve fund of PJT, and 20% for social funds, education, production services, and pension fund contribution.

During the period from 1991 to 1996, PJT paid Rp.5.8 billion to national development fund as a kind of cash dividends.

Pension fund has been transferred to Yayasan Bakti Anuplaha (Foundation Service Anuplaha).

1.3 Investment

The Selorejo tourist resort was constructed in 1995 with the investment of Rp.2.85 billion. Other assets of 1996 include Rp.230 million that was invested as an account participation (100 units of the share) to a domestic corporation, P.T. Dua Satu Tiga Puluh, established for Indonesian-made airplane, based on Letter of Minister of Finance No. S-118/MK. 016/1996 dated March 7, 1996.

1.4 Company Performance

In accordance with Decision of Minister of Finance No. 826/KMK 013/1992,the company performance is being evaluated every year. The PJT's company performance was evaluated as "Very Healthy" in both 1995 and 1996.

2 Details of Annual Revenue by Source

The annual revenue of PJT for the latest three years is shown in Table A13-6 by each source.

In 1996, the revenue amounted to Rp. 21,050 million which increased by 12.2% compared to 1995. Of the total revenue, that of PLN occupied the largest share of 47.0%, followed by the industries of 19.6% and by the PDAM of 17.5%. This order among the three water users has not changed these three years.

3 Details of Annual Expenses

The annual operating expenses for the three years from 1994 to 1996 divided by direct and indirect costs are shown in Table A14-7. The total annual operating expenses amounted to Rp. 18,061 million in 1996 which increased by 10.2% compared to 1995. The share of direct cost was 68.7% of the total operating expenses and that of indirect cost was 31.3% in 1996. The O&M cost was Rp.8,881 million of which share was the largest in the total operating expenses with 49.2% followed by the personnel cost (in total of direct and indirect) of 22.1%. Indirect cost excluded personnel cost was Rp. 2,454 million in 1996, which was 13.6% of the total operating expenses.

R&D cost amounted for Rp. 539 million in 1996, that was 2.6% of Revenue including computer system improvement cost (Rp. 106 million) and ISO cost (Rp. 155 million) in addition to new business research cost.

4 Details of Property

4.1 Owned Assets

Owned assets listed on PJT's balance sheet (On-B/S assets) are as shown below in Rp. million.

	<1994>	<1995>	<1996>
Land	799	934	1,275
Construction/Building	5,412	7,833	7,995
Machine/Equipment	8,480	8,966	9,749
Other equipment	612	783	1,221
Depreciation	(6,916)	(8,185)	(9,726)
Net Fixed assets	8,387	10,331	10,514

4.2 Managed Assets

Managed assets are not listed on PJT's balance sheet (Off-B/S assets). But it is reported that bookkeeping on the managed assets has being made even not stated on the balance sheet.

The major assets/properties that are under the management of PJT are as shown below.

(1) Construction Cost of Projects

	1985 Price	
	(¥10^6)	(Rp10^6)
Karangkates & Lahor	50,834	108,323
Selorejo Dam	8,041	30,477
Delta Irrigation incld. Lengkong Dam	1,432	2,484
Porong River Improvement	673	24,096
Wlingi Dam & Lodoyo Dam	17,097	60,506
Surabaya River Improvement	5,368	38,001
Bening Dam & Widas Irrigation	2,066	19,907
Total	85,511	283,794
	(=Rp. 401,902x10^6)	Rp 685,696x10^6

The total present (1996) value of the project property is estimated at Rp. 1,625 billion by applying the exchange rate of US$1=¥238.54= Rp. 1,110.6 and CPI of 1996=237 based on 1985=100 (these are derived from SAPS II and data of IFS published by IMF).

The value of properties handed over from PKB to PJT by the Decree of Minister of Public Works No. 181/KPTS/1996 dated May 7, 1996 is as shown below.

Property	Quantity as stated in the report	Amount in Rp. million
Land	784 areas/3,394 Ha.	13,689
Road	63 tracks	1,220
Irrigation construction	5 units 29 pieces	79,842
Construction river protection	90 units 133 pieces 107.62 km. 305,000m^3	75,865
Others		528
Total		171,144

(2) Description

For the purpose of description of managed assets construction cost of each facility was reviewed and listed Table A14-8.

4.3 Land

Details of the land (On-B/S assets) (Unit: Rp. million)

Land for buildings	:	81
Government office house	:	449
Guest house	:	12
Warehouse	:	3
Convention/sports hall	:	2
Offices	:	12
Landscaping/uncultivated land	:	542
Others	:	174
Total	:	1,275

As mentioned above, the land of 3,394 ha for Rp. 13,690 million has been transferred in May, 1996. Most of these land area are not generating any revenue to PJT at present.

5 Present Status of Accounting System

5.1 Current Accounting System

The PJT's accounting policy presented below is the one prepared by following the Decree No. KP254/KPTS/DU/1994 of Ministry of Public Works, dated 30 December 1994.

(1) The bookkeeping method is standardized in accordance with Indonesian accounting principles as a public utility industry. For example, the revenue is recognized at cash basis and the bookkeeping is done by double-entry system.

(2) Entry vouchers handed to the accounting section are posted to computer systems according to each account name stipulated in the said accounting principles.

The accounting operation is computerized by "Accounting System General Ledger" (ASGL). The version up was made in July, 1997.

(3) Interim Financial Reports are made quarterly. Annual Report and Audited Financial Statement are prepared every year.

5.2 Some Problems of Present Accounting System

(1) Management information system (MIS) is not well prepared. The computer system can not out put necessary data like yearly maintenance cost by category or by project.

(2) Neither current book value of properties nor accumulated amount of depreciation are available, although bookkeeping of managed assets transferred from PKB started.

(3) Cost allocation is not introduced yet.

5.3 Contract System with Financial Sources

(1) PLN

The water rate is determined by the Decree of Minister of Public Works of "Adjustment of Basic Rate in the contribution for the exploitation and maintenance of water reservoirs infrastructure of public company (Perum) Jasa Tirta". It is determined at Rp. 11. 76 per kWh for the period from January 1, 1997 to December 31, 1997. (Decree No. 511/KPTS/1996)

With the tariff increase, PJT is obliged to carry out the sediment dredging work of Sengguruh reservoir to increase the production of electric power generation of PLTA (Subsidiary of PLN) Sengguruh. Dredging has started from 1995. However the agreement has not been reached yet between PLN and PJT on the methodology of tariff calculation.

(2) PDAM

The basic rate was determined in the Article 1 of Minister of Public Works' Decree No. 232/KPTE/1994 which stipulates as follows:

- For semi-commercial group (PDAM) rated at Rp. 18 per m^3 originally was adjusted to Rp. 30 per m^3;
- For commercial group (industry and non-PDAM) rated at Rp. 30 per m^3 originally was adjusted to Rp. 51 per m^3.

The basic rate of this Article is the average rate for each group of users and is valid from July 1, 1996 to December 31, 1997.

(3) Industry

In addition to the above, the decree of the Governor of the Province of East Java No. 135 year 1996 stipulated the following rates.

- Rp 51.00/m^3 for the use of up to 10,000 m^3/day
- Rp. 52.00/m^3 for 10,001 to 100,000 m^3/day
- Rp. 53.00/m^3 for 100,001 to 500,000 m^3/day
- Rp. 54.00/m^3 for 501,001 to 1,000,000 m^3/day
- Rp. 55.00/m^3 for more than 1,000,000 m^3/day

5.4 Auditing System

(1) Internal Supervision Unit (SPI) was established to execute internal auditory activities including operation inspection in 1990 in accordance with Government Regulation No. 3, dated August 26, 1983.

It's main function is as follows.

- SPI is led by a Head who is directly responsible to President Director.
- SPI is to help the President Director in planning the management control system and its implementation and to give him suggestions to improve.
- The Board of Directors use the SPI opinions and suggestions as their consideration in perfecting the company management to keep it in a good and respectable condition.
- Internal auditor's report is summarized in the annual report of 1996 which is enclosed in Data book.

(2) Outside auditor of PJT is the Representative Office of Finance and Development Control Agency (BPKP) East Java Province and has audited PJT since 1991.

In 1996, the representative of BPKP worked at PJT office for about 4 months for auditing.

First, started in September for 1.5 months from January to September transactions.

Second, he made the year audit from November for 2.5 months. He made amendment to 1995 report and the income tax decreased by Rp. 310 million and consequently the profit after tax increased by the same value.

(3) Except for small amendments such as calculation of corporate tax in 1995, PJT's financial statements present its financial position fairly and "normal without conditions" which is targeted in the PJT's long term plan for 1994 - 1998.

6 Financial Reform Required

PJT is specialized as an O&M corporation as well as a self-supporting unit. Financial reform is required to achieve the target through introduction of cost recovery principle supported by related agencies and back up by upgrading of accounting system, and management information system, according to cost allocation.

6.1 Depreciation of Managed Assets

Facilities constructed by PKB has been transferred to PJT under its management for operation and maintenance. Bookkeeping and periodical reports of those properties and utilization are required by the decree of Minister of Public Works number 180/KPTS/1966 by appointing "property manager" in PJT for State owned assets.

Inventory check is necessary based on the entry book.
Depreciation is necessary to evaluate present value of assets.
O&M cost can be projected in comparison with total book value of managed assets.

Table A14-8 shows depreciation which is calculated by straight line method excluding land. Duration period is 50 years for civil work and 5 years for equipment, consultation and others with no residual value. Yearly depreciation is estimated to amount to over Rp. 90 billion from FY2002 to FY2020 including planned investment. Details are shown in Table A14-8.

6.2 Management Information System

In July 1997, after parallel run with WANG system, "Accounting System General Ledger (ASGL)" started as MIS. The system was developed in cooperation with Surabaya Institute of Technology as system designer, main part of which is duly integrated to accounting system. Operational flowchart is shown in Table A14-9. It currently outputs segment information. However more detailed information by MIS is necessary.

Management information system is to be leveled up according to the following principle and concept;

(1) Principles of MIS Level Up

a. Revenue and expense matching principle: It is essential for management to know amount of income which is defined as (revenue minus expense) by each project to evaluate job efficiency. This principle is also required for tax purpose. Present MIS does not compute amount of income by each project or facility. Total of above revenue, expense should be integrated to P/L of accounting system. It should be noted that MIS without integration to accounting system has difficulties in maintenance of database.

b. Cost recovery supporting system by computer: Cost recovery principle proposed in this Study should be supported by computer. Allocated cost should be input to every project account.

c. Accounting system for strategic management: In accordance with revenue and expense matching principle, this is self-explanatory. Should a project operation make deficit in Income, management must take necessary steps to improve its operation. If matching system is not introduced, income figures might be made up by carrying over a portion either revenue or expense to the next fiscal term. Such adjustment will falsify accounting accuracy and cause misjudgment of management.

d. Profit center vs. cost center: Profit center consists of Water Service Divisions (ASA 1 and ASA 2) and Non Water Service Division. Other divisions than profit centers are categorized as cost center. All the cost of cost centers is to be centralized to head office as indirect cost.

(2) Framework of MIS

Output image is shown in Table A14-11. Income from each facility or project is posed in the right hand box. At present, those figures must be calculated by manual. Computer support is necessary. In order to fill the blank space following process is required.

a. Other direct cost borne by head office should be allocated to each profit unit and indirect cost is to be allotted as over head.

b. Input of revenue and expense should be divided to each facility.

c. Non water resources revenue such as tourism, equipment rental, construction service and others inducing new business, income and cost matching principle should be introduced to MIS.

d. Σ Facility (revenue by source) - Σ Facility (direct cost + depreciation + O.H.) = P/L (Total Operating Income)

e. Depreciation of managed assets should be integrated into ASGL by the time of the structural consolidation at FY2002.

f. Human resources information system should be revised to build up who's who database.

For improvement of MIS, 2 system analysts are required who are familiar to PJT's business operation. After definition of functional requirement of computer system, capacity of hardware and user programming capability should be consulted to system analyst.

6.3 Cost Allocation System

To establish revenue and expense matching system in MIS at cost recovery principle, cost allocation to each facility is necessary. PJT is also trying cost calculation using various methods of cost allocation. Projection of this Study is made by applying our cost allocation figures.

6.4 Establishment of Self Supporting Business Operation System

PJT was established as a self supporting corporation independent to the state budget. It must create profit to run as a going concern. On the other hand, O&M business is cost oriented. Cost of appropriate O&M should be owned by beneficiaries. Cost allocation method and water charge mechanism must be authorized for cost recovery.

The establishment of the following is required for NEW PJT.

(1) New PJT & Accounting System

At the end of year 2002, the consolidated balance sheet of New PJT will be as shown in Table A14-10. Managed assets are entered in the balance sheet using contradictory suspense account. The balance sheet at the end of year 2005 and 2020 is projected in the same table as well.

Balance sheet formation of New PJT as Perum in FY2002 is as follows;

- Assets in the amount of Rp. 2,788 billion consist of PJT's own assets for Rp. 50 billion and managed assets for Rp. 2,738 billion of which Rp. 2,193 billion is transferred from ex-Brantas project, Rp. 343 billion is from PBK and Rp. 202 billion is from PGKs. All figures are after depreciation. As for depreciation calculation, please see Table A14-8.

  The amount of contradictory suspense account at funding side is the same as total managed account.

  WARDEC Japan's accounting method is a suitable reference.

- Balance sheet formations of FY2005 as Persero and FY2020 of the target year are explained in Article 8.

(2) Cost allocation method

For the purpose of full cost recovery of water supply, the real and full costs for water supply to beneficiaries have to be computed accurately first.

(3) Water charge mechanism

Water fee calculation was made on the basis of full cost recovery and reported at Section IV.15. Water charge will be applied to all beneficiaries including irrigation and fishery.

(4) Budget control system

Budget should be controlled by RKAP (Government Approved Projection) with income check through revenue and expense matching principle and over head controlled by annual budget. Revenue check system by RKAP as target and over head control system are now working monthly by manual. On-line-system support is desirable for speed-up and avoidance of manipulation.

7 Development Scenario under and Persero Jasa Tirta

Projected income statements at the year end of 2002, 2005 and 2020 are as follows;

(Rp. Billion)

P/L

	FY 2002	FY2005	FY2020
Operating Revenue	163	180	280
PLN	13	15	22
PDAM	7	9	21
Industry	5	5	6
Fishery	2	3	10
Irrigation	41	44	47
Construction	53	59	110
Sabo	37	37	20
Others	5	8	44
Operating expense	150	151	212
Direct cost	140	140	200
Indirect cost	10	11	12
Total operating income	13	29	68
Non operating income	4	3	6
Income before tax	17	32	74
Income after tax	12	23	52

Details are shown in Table A14-12.

Assumption for preparing the income statements projection is described in the following sub-section from 7.1 to 7.4.

7.1 Annual Revenue Projection

PLN: The revenue was projected based on the unit price of Rp. 23/kWh in FY2020 which was calculated as the price to recover full cost of water. Price in FY1997 is current of Rp. 11.8/kWh. The price is assumed to increase by straight line to FY2020, as the result, with an interpolation of Rp. 14/kWh in FY2002, and Rp. 16/kWh in FY2005. Revenue from PLN in FY2020 is projected as follows:

Price Generation Rp Million

23.0 Rp/KWh × 959 $\times 10^6$ kWh/year = 22,057

Generation details × 10^5 kWh

Sengguruh	81
Sutami	459
Wlingi	164
Lodoyo	38
Selorejo	23
Tulungagung	130
Wanolejo	63
Beng	11
Total	959

PDAM: As the same manner with PLN, the price was projected for Rp. 30/m^3 in FY2020 as the price to recover full cost and base on current price of Rp. 32.1/m^3 the price is assumed to decrease to Rp. 30/m^3 by FY2002. Water demand will gradually increase to 698MMm^3/year at the year of 2020 according to the projection. Water demand is estimated for 235MMm^3/year in FY2002, 312MMm^3/year in FY2005 and 698MMm^3/year in FY2020. The water demand was projected as the average of the two that in a normal year and a drought year. Calculation is shown in under the Table A14-12

Revenue from PDAM in FY2020 is projected as follows:

Price Rp/m^3		Water demand	Revenue RP million
30	×	698 × 10^6m^3/year	= 20,940

Industry: Also the price should be Rp51/m^3 at FY2020 for full cost recovery. Since current price is Rp. 54.5/m^3, the price is assumed to decrease to Rp. 51/m^3 by FY2002. Water demand will increase from present level of 91 MMm^3/year to 118MMm^3/year by FY2020 even though saving measures.

The water demand was projected as same manner as mentioned above.

Revenue from industries at FY2020 is calculated as follows:

Price Rp/m^3		Water demand	Revenue RP million
51	×	118 × 10^6m^3/year	= 6,018

Fishery and irrigation: PJT does not get any fee from these beneficiaries who receive raw water supply from the Brantas river. According to hearings made by the Study Team they are willing to pay for constant supply of water improved in quality suitable for irrigation and fishery. In this projection, it is assumed that the computed water rate for fishery and irrigation will be materialized step by step by FY2020. Conceptual framework of water service fee is required.

Irrigation water price was calculated as Rp. 30/m^3 in FY1997 and Rp. 50/m^3 in FY2020 to recover full cost of water.

However those prices do not seem practical to be imposed to farmers and fisheries.

Based on our estimation of their capability and willingness to pay, realistic figures are projected Rp. 10/m^3 in FY2002, Rp. 12/m^3 in FY2005 and Rp. 26/m^3 in FY2020, which will amount to about 10% of assumed their income.

The water demand of fishery at present is 40.8 million m^3/year and estimated in FY2020 to 268.7 million m^3/year in normal year and if drought, supply will be a half of that. The water demand was projected as overage of the two with the same manner as mentioned above.

Revenue from irrigation in FY2020 will be,

Price Rp/m^3		Water demand	Revenue RP million
50	×	$955 \times 10^6 m^3$/year	= 47,750

and revenue for fishery in FY2020 will be

50	×	$202 \times 10^6 m^3$/year	= 10,100

On the other hand, if realistic water fee for Rp. 26/m^3 is applied, revenue in FY2020 from fishery and irrigation will be for Rp. 5 billion and Rp. 25 billion respectively.

Difference of Rp. 28 billion is to be born by government for full cost recovery.

Construction service: Rp. 53 billion in FY2002 Rp. 59 billion in FY2005 and Rp. 110 billion in FY2020 were estimated after PBK's integration for construction and rehabilitation of managed assets according to investment plan. 95% of those are capitalized as construction cost for depreciation and 5% income was assumed as the over head cost recovery.

Sabo: Out of the PGKS's turnover of Sabo project based on the planned investment, 5% income was assumed to overhead cost recovery.

Tourism: Selorejo and Karangkates are in operation as tourism resorts. Selorejo looks like most promising resort area because of facility. Professionals talented with resort park management are desirable. In the meantime, to employ community residents of the area as operation staff will be helpful for business promotion in the area.

In this projection revenue from tourism is assumed to increase by 20% every year to Rp. 22 billion in FY2020 and expense is 80% of the revenue.

Stand utilization: This has been realized in Wlingi reservoir with partnership of PT. Jawa Benton (Concrete) to make construction materials. Technical consultant may be helpful for quality improvement. Revenue from sand utilization was projected for Rp. 1 billion in FY2020.

Consulting service, Equipment rental: Effective utilization of resources such as experienced manpower, heavy machine or construction equipment is important source of income. However problems are seen in collection of account receivable for this business. To deal with private corporations or persons, careful attention should be paid to their ability to pay, legal documentation of contract or collection method of payment.

Both business revenue was projected to increase by 10% every year and expense was assumed 80% of the revenue. Details are shown in Table A14-12.

Community residents: Residents living along the Brantas river are also beneficiaries of PJT's O&M services in the field of flood control and/or river maintenance. The cost should be recovered by way of government subsidiary. However this is not counted in the above income statement.

Non operating income: Non operating income at FY2002 consists of PGPS salary as government subsidy for government employees for Rp1 Billion which is 15% of personnel cost as same as present PJT's percentage, and interest income for Rp2.5 billion which was assumed at 10% of current assets of B/S.
PGPS salary was assumed to stop in FY2005 of status change to Persero.

7.2 Annual Cost Projection

O&M: O&M direct cost consists of operating cost, materials and sub contractor fee, that projected to increase every year and reaches the peak in the year of 2002. At that time book value of managed asset comes to its peak and 1% of book value for Rp27 billion is projected as O&M direct cost. Book value of the asset decreases thereafter but O&M direct cost is projected to stay at this level up to FY2020.
It is necessary to research adequate maintenance cost for each facility. In addition, dredging cost is projected Rp19 billion in FY2002, and Rp9 billion each in 2005 and 2020, mainly for Wlingi. Details are shown in Table A14-12.

Personnel cost: Wage will increase by 6% a year until FY2001. But in FY2002 when PKB, PGKS and PJT are consolidated, it is estimated as projection, that New PJT's personnel will be 593 as Organic employee which cost is Rp7.6 billion, and no change thereafter up to FY2020 owing to generation renewal without consideration of inflation element.

7.3 Annual Income Projection

The income after tax of each year is shown in the bottom line of Table A14-12. Tax rate is estimated at 30% of gross income.

7.4 Investment Projection

Planned investments are shown in Table A14-8. The planned investment cost amounts to Rp. 3 trillion. Managed assets in total after depreciation will be Rp. 2.7 trillion in FYF2002, Rp. 2.6 trillion in FY2005 and Rp. 2.6 trillion in FY2020.

Depreciation cost in each year will be Rp. 95 billion, Rp. 92 billion and Rp. 93 billion, respectively.

Either New PJT or Persero JT can not afford depreciation cost of managed asset without government subsidy for full cost recovery.

8 Development of Assets Management by 3 Steps

From the view point of accounting system and capital formation, following 3 steps are recommended according to the planned change of company's legal status.

8.1 1st Step: Bookkeeping of Managed Assets by Off-Balance Sheet

Before the consolidation of PJT, PKB and PGKS, the bookkeeping of managed assets will be made by off-B/S procedure.

Depreciation must be made according to duration period of asset, whose results should be reported to MPW and confirmation of the accumulated depreciation by Government is recommended for the preparation to a case of absorption of managed assets to PJT's the balance sheet by the time of the integration.

8.2 2nd Step: Integration

When PJT, PKB and PGKS are consolidated in 2002, off-balance-sheet asset should be integrated to its new balance sheet. The value of assets will be entered in the debit side and at the same time in the credit side of B/S as contradictory suspense account. Thus posting assets are not reflected to capital account. The book value is reduced every year according to the depreciation together with suspense account. Depreciation does not reflect to P/L by this manner.

When any rehabilitation or investment is made, the amount is added to increase the value of the assets. In this case if funding is made by government, credit side is suspense account, but if own money is used, credit side should be also its own account.

Thus the management of the assets can be made correctly every year. (Estimated B/S is shown in Table A14-11)

8.3 3rd Step: PERSERO Status

In the year of 2005, status change to Persero is expected. As the third step of accounting method of managed asset, Persero absorbs managed asset on its own B/S. For capital formation, issuance of capital notes is recommended for managed assets to be entrusted by government. Capital notes have different maturity dates, and at the due date, loan is converted to paid in capital. PT Jasa MARGA (Persero)'s case is a good reference for this procedure. Interest payable for capital notes are not counted in this projection.

Depreciation amount is also covered by capital notes which should be underwritten by government as differed payment so that depreciation may not affect income statement. (See Table A14-10 Shadow A/C)

Issuance of capital notes should be consulted by securities firms or investment bankers.

8.4 Development of New PJT to PERSERO Status

(1) Government Regulation No. 13

It is understood that Perum is now able to conduct joint venture project with another company or establish a subsidiary company according to Government Regulation No. 13/1998.

However, the followings can be pointed out, as some merits of status change to Persero from the view point of financial aspect.

- Borrowing from financial market: Since its assets cannot be given as collateral, Perum is difficult to be a main obligor to commercial banks. It may narrow the way to project financing such as "Build, Operate and Transfer" finance without government guarantee.

- Funding in the capital market: Bond issuance by Perum if underwritten by Government is possible. However, regulator may not approve it if proceeds be used for new business with investment risk. In Persero status notes or bonds can be issued with flexibility according to capital market condition and creditability of new projects. In addition, it is preferable to issue notes to be purchased by basin residents for community participation.

- Reserve ratio to equity: Under the status of Persero, the reserve ratio is higher than the Perum status. It is assumed to increase from 25% to 40% in this Study. This reserve is added to that of previous year.

(2) Budget Resources of PT PJT

Expected new business field

PJT has various merits of resources in comparison with those of other enterprises. They are huge areas of land including golf course, forests, water to drink or for swimming pools, dam lakes for water sports and others. PJT's operation at large is regionally monopolized in water management and treatment. Weak points would be lack of know-how in new business field and financial funding capability.

Fee income business formation to entrust new business operation to professional corporation or to lease land for new business is advisable. Taking advantage of flexible funding capability by Persero status, investment to new business should be managed to minimize risk and aim at high return. It would be encouraged for Persero Jasa Tirta to tackle with high-return private sector projects utilizing the advantage in find financing.

9 Recommendation

1. Bookkeeping of Managed Assets, Calculation of depreciation, Reporting system to MPW, O&M cost evaluation by "property manager" who may visit each facility;

   It is reported that bookkeeping of managed assets, and periodical report to MPW are already carried out.

   Calculation of depreciation is necessary in order to evaluate O&M cost justification as well as present value of assets.

   It is recommended for the property manager to visit each site of facility to check proper handling of machine and equipment, and to estimate desirable maintenance work in quality and quantity by hiring regional contractor.

   Not necessary to keep many organic personnel is each site, but normal maintenance should be kept working at anytime by hiring regional contractor.

2. Water fee calculation formula approved by Government for PLN, PDAM, Industry, Irrigation and Fishery;

   Water fee applied to our projection in FY2020 includes depreciation cost of facilities to benefit PLN, PDAM, Industry, Irrigation and Fishery.

   Our projected fee scale gradually increases from present price to projected figure in FY2020.

   Calculation formula should be approved by government.

3. MIS level up, Revenue Expense Matching System, Human Resources Data integrated to Accounting System;

   We understand that MIS is being leveled up year by year.

   MIS database should be integrated to accounting system.

4. As for new business by Perum status, it is advisable to make fee income business formation;

   To promote tourism, it is suggested to lease all facility to a professional entity in that business field, to get fee income.

   Market research for clean water business and business promotion for water quality laboratory is recommended. Both businesses are suitable for PJT's reputation.

   Customers' creditability analysis for equipment rental and construction service are recommended so as to not make bad debt from private entities.

5. Equity finance scheme study for integration and PERSERO

At the time of 3 entities' integration, it is necessary to evaluate assets qualification in order to avoid bad debt or unexpected loss for new entity.

At the time of status change to Persero issuance of 2 kinds of capital notes is recommended.

One is capital notes for bookkeeping of managed assets amount of which will increase according to new investment, and may decrease according to retained earning's conversion to paid-in capital.

Another is capital notes for depreciation of managed assets, amount of which is accumulated depreciation from FY2005 to FY2020.

Interest payable for capital notes are not taken into consideration in this study. Revenue from unspecified beneficiaries could set off the interest.

We recommend this capital notes financing should be consulted to securities firms, or investment banks in Indonesia.

10 Project Implementation Program and Action Plan

10.1 Implementation Program up to FY2005

(1) First Step - Immediate

A. Depreciation calculation of managed asset at off-Balance-sheet

B. Maintenance work evaluation by each facility.

C. Cost allocation and set up of water price calculation formula.

D. MIS level up

E. Government subsidy for irrigation, fishery

(2) Second step - Integration in 2002

A. On balance accounting of managed assets

B. Government subsidy for Sabo and personnel (PGPS)

C. Assets evaluation of 3 entities' B/S.

(3) Third step - Persoro JT in 2005

A. Capitalization by issuance of capital notes

B. Depreciation method of managed assets under capital notes.

C. New business expansion by taking and vantage of flexible funding capability of Persero status.

10.2. Action Plan up to FY2002

1. (1) and (2) should be adopted as plan, and details, please see 9.1–9.5 recommendation.

Table A14-1 Balance Sheet of Latest 3 Years

(Rp. million)

	1994	1995	95-'94	1996	96-'95
Cash & Deposit	10,266	8,230	-2,036	9,436	1,206
Account Receivable	2,925	3,029	104	1,838	-1,191
(Bad Debt Reserve)	-91	-122	-31	-181	-59
Advance Payment	65	16	-49	216	200
Prepaid Tax	657	817	160		-817
Income Receivable	540	2,753	2,213	2,536	-217
Others	378	175	-203	67	-108
Current Assets	14,740	14,898	158	13,912	-986
Land	799	934	135	1,275	341
Construction & Building	5,412	7,833	2,421	7,995	162
Machine & equipment	8,480	8,966	486	9,749	783
Furniture & Equipment	612	783	171	1,221	438
Fixed Assets	15,303	18,516	3,213	20,240	1,724
(Depreciation)	-6,916	-8,186	-1,270	-9,726	-1,540
NetFixed Assets	8,387	10,330	1,943	10,514	184
Const. in Progress	285	87	-198	517	430
Others	2,144	2,403	259	2,616 *	213
Total Assets	25,556	27,718	2,162	27,559	-159
Account Payable	1,338	1,490	152	3,165	1,675
Tax Debt	1,744	1,215	-529	371	-844
Develop Fund Debt	1,513	1,118	-395	0	-1,118
Other Short Term Debt	54	1,444	1,390	216	-1,228
Production Service	5	0	-5	4	4
Advance Received	258	260	2	308	48
Current Liabilities	4,912	5,527	615	4,064	-1,463
Government Capital	17,500	17,500	0	17,500	0
Reserve	1,339	1,791	452	2,516	725
Net Profit of the Year	1,805	2,900	1,095	3,479	579
Shareholders' Equity	20,644	22,191	1,547	23,495	1,304
Liabilities & Equity	25,556	27,718	2,162	27,559	-159

Note :

* Rp. 1,581 was the spare parts of ex-Brantas-project that can not be used by the project anymore. According to the Audited statement dated Feb. 5, 1997, the spare parts was transferred to PKB on Jan. 14, 1997.

Table A14-2 Profit & Loss Statement of Latest 3 Years

(Rp. million)

	1994	1995	%Revenue	95-'94	%Increase	1996	%Revenue	96-'95	%Increase
Operating Revenue	14,638	18,765	100.0	4,127	28.2	21,049	100.0	2,284	12.2
1. Water Resources	11,545	16,336	87.1	4,791	41.5	17,715	84.2	1,379	8.4
PLN	6,131	9,673	51.5	3,542	57.8	9,898	47.0	225	2.3
PDAM (City Water)	2,201	2,597	13.8	396	18.0	3,683	17.5	1,086	41.8
Industry	3,189	4,066	21.7	877	27.5	4,134	19.6	68	1.7
Clean Water & Water Treatment	24	19	0.1	-5	-20.8	0	0.0	-19	-100.0
2. Non Water Resources	3,093	2,429	12.9	-664	-21.5	3,334	15.8	905	37.3
Tourism	320	389	2.1	69	21.6	479	2.3	90	23.1
Equipment Rental	559	798	4.3	239	42.8	1,332	6.3	534	66.9
Construction Service	1,369	952	5.1	-417	-30.5	1,364	6.5	412	43.3
Other Service	845	290	1.5	-555	-65.7	159	0.8	-131	-45.2
Operating Expense	12,913	16,389	87.3	3,476	26.9	18,062	85.8	1,673	10.2
O & M	4,843	7,832	41.7	2,989	61.7	8,881	42.2	1,049	13.4
Personnel Cost	3,443	3,863	20.6	420	12.2	3,996	19.0	133	3.4
General Expense	782	940	5.0	158	20.2	940	4.5	0	0.0
Business Trip Expense	346	425	2.3	79	22.8	424	2.0	-1	-0.2
Depreciation	1,954	2,004	10.7	50	2.6	1,644	7.8	-360	-18.0
Marketing Cost	104	150	0.8	46	44.2	149	0.7	-1	-0.7
Supervisory Expense	119	169	0.9	50	42.0	200	1.0	31	18.3
Advisory Expense	181	200	1.1	19	10.5	199	0.9	-1	-0.5
Other Cost	1,141	806	4.3	-335	0	1,629	7.7	823	102.1
Operating Income	1,725	2,376	12.7	651	37.7	2,987	14.2	611	25.7
Other Revenue	1,566	1,627		61	3.9	1,783		156	9.6
PGPS Salary	468	553		85	18.2	585		32	5.8
Bank Interest	951	1,033		82	8.6	1,150		117	11.3
Others	147	41		-106	-72.1	48		7	17.1
Other Expense	42	4		-38	-90.5	176		172	4300.0
Non Operating Income	1,524	1,623		99	6.5	1,607		-16	-1.0
Income before tax	3,249	3,999	21.3	750	23.1	4,594	21.8	595	14.9
Income Tax	1,444	1,099		-345	-23.9	1,115		16	1.5
Net Income	1,805	2,900	15.5	1,095	60.7	3,479	16.5	579	20.0

Table A14-3 Appropriation of Earnings

	1994	(%)	1995	(%)	1996	(%)
Net Profit	1,805	(100)	2,900	(100)	3,479	(100)
General/Aim Reserve	451	(25)	725	(25)	N/A	
Development Fund	939	(52)	1,450	(50)	N/A	
Production Service	54	(3)	87	(3)	N/A	
Social and Education Fund	361	(20)	580	(20)	N/A	
Welfare Fund	0		58	(2)	N/A	

Table A14-4 Company Performance Trend

Capital Adequacy	1994	1995		1996	
	Actual	Actual	Target	Actual	Target
Equity (Rp. Million)	20,644	22,191		23,495	
Equity Ratio	80.8	80.1		85.3	
Solvability (Total Asset/Debt)	520.2	501.5	467.1	678.1	660.1
Profitability					
Rentability (Pre-tax Profit/ Working Asset)	-	16.4	13.9	18.4	15.5
ROA (pre-tax)	12.7	14.4		16.7	
ROE (after-tax)	8.7	13.1		14.8	
Profit Margin (pre-tax)	22.2	21.3	19.3	21.8	20.8
Operational Ratio (Revenue/ Operating Expense)	113.4	114.5	116.3	116.5	117.6
Productivity					
Revenue per person (Rp. Million)	32.7	42.6	40.9	48.4	42.8
Liquidity					
Current Ratio	300	270	261	342	366
Others					
Collection Period (months)	2.8	3.7		2.5	
Payables Period (months)	1.2	1.1		2.1	
Difference (months)	-1.6	-2.6		-0.4	
Assets Turnover (Revenue/Total Assets)	0.6	0.7		0.8	

Table A14-5 Fund Application Statement

(Rp. million)

	1994	1995	1996
Fund Source			
1. Business Fund			
Net Profit after Tax	1,805	2,900	3,479
Depreciation	1,954	2,004	1,540
Total Business Fund	3,759	4,904	5,019
2. Fund Outside Business			
Selling Fixed Asset	-	86	-
Reduction Fixed Asset in Progress	-	199	-
Change of General/Aim Reserve	770	451	725
Total Fund Outside Business	770	736	725
Total Fund Achievement	4,529	5,640	5,744
Fund Using			
Fixed Asset Investment	806	3,955	1,724
Other Asset Investment	1,750	337	213
Increase Fixed Asset in Progress	259	-	430
Reduction of Pension Fund	107	-	
Net Sharing	3,305	1,805	2,900
Total Fund Using	6,227	6,097	5,267
Fund Surplus/Shortage	-1,698	-457	477
Starting Working Capital	11,526	9,828	9,371
Final Working Capital	9,828	9,371	9,848
Changes in Working Capital			
Current Assets	14,740	14,897	13,912
Current Liabilities	4,913	5,527	4,064
Net Working Capital	9,827	9,370	9,848
Increase/Decrease	-1,698	-457	478

Table A14-6 Annual Revenue by Source

(Unit : amount in Rp.million, unit price in Rp.)

	Annual Revenue (Unit price)		
	<1994>	<1995>	<1996>
(1) Water Resources Management and Water Use			
a. PLN water service for Hydro electric power generation	6,131 (7.7/kwh)	9,673 (10.20/kwh)	9,898 (11.20/kwh)
b. PDAM (city water) raw water service	2,201 (18/m^3)	2,597 (18/m^3)	3,683 (30/m^3)
c. Raw Water Service for Industry along Kali Brantas	3,189 (30/m^3)	4,066 (30/m^3)	4,134 (51/m^3)
(2) Water Quality Management			
Clean Water & Water Treatment (i)	24	19	23
(3) River Environment Management			
a. Tourism <visitors in 1,000>			
Selorejo	215 <150>	259 <130>	322 <117>
Karangkatas	105 <139>	190 <116>	157 <96>
Total	320	389	479
b. Sand Utilization (ii)	388	145	33
c. Land Use Land rental fee	109	126	104
(4) Others			
a. Equipment Rental (iii)	559	798	1,332
b. Construction Service (iv)	1,369	691	1,048
c. Consulting Service (v)	348	261	316
Total	14,638	18,765	21,050

(5) Other water resources infrastructure service without revenue.

a. Irrigation Service (PJT Annual Report 1995 Chapter 4)
Waters allocation to irrigation covers area of 78,811 ha. Such irrigation area are Lodoyo, Turi Tunggurono, Jatimlerek, Brantas Kiri Mojokerto, Delta Brantas, Selorejo and Widas.

b. Flood Control (PJT Annual Report 1995 Chapter 4)
With the availability of flood control structure such as dam, weir and embankment and the operation of flood control equipment (FFWS) there are quite a number of flood prone area along the Kali Brantas where is free from annual flood disturbance.

Remarks: (i) Facilities developed for workers' drinking water supply during construction of Karangkates Dam.
(ii) Dredged sand of Wlingi, Tlocor, reservoirs sold to cement company
(iii) Equipment rental to private construction companies
(iv) Contractor business for factory and office building.
(v) Technical man power business

Table A14-7 Details of Annual Expenses

(Rp. million)

	1994	1995		1996	
Direct Cost					
- Operation and Maintenance Cost	4,838	7,833		8,881	
- Employee Cost	1,337	1,167		790	(4.4%)
- General Cost		205		214	
- Business Trip Cost		66		85	
- Depreciation Cost	1,596	1,575		1,027	
- Other Cost	1,408	764		1,405	
Total Direct Cost	**9,180**	**11,612**	**(70.9%)**	**12,402**	**(68.7%)**
Indirect Cost					
- Employee Cost	2,105	2,696		3,206	(17.8%)
- General Affairs Expense	592	735		726	
- Business Trip Cost	287	356		339	
- Depreciation & Amortization Cost	361	428		618	
- Marketing Cost	85	150		149	
- Supervision Committee Cost	120	169		200	
- Guidance Cost	181	192		74	
- Upgrading cost	–	50		200	
- HRD cost	–	–		150	
Total Indirect Cost	**3,732**	**4,776**	**(29.1%)**	**5,661**	**(31.3%)**
Operating Expense	**12,913**	**16,388**	**(100%)**	**18,063**	**(100%)**

Table A.14-8 Depreciation of Managed assets (million Rp.)

	Investment cost		Civil Work ; & Others acumulated			5years depleciation	present book value	Depreciation			Remaining yeays	book value in 2002	book value in 2005	book value in 2020
	Completec at	1997 price	Land	Duration 5	Duration 5 straight line	Residudal 0	at1997 end	in 1998	in 1999	in 2000	from2000	in 2002		
Karangkates	1973	515,987		507,150	8,817	252,249	1,978	263,718	10,143	10,143	10,143	23	10,143	213,003	162,574	30,429
Lahor	1970	140,328		140,328		50,518	1,984	89,810	2,807	2,807	2,807	29	2,807	75,777	67,357	25,259
Lodoyo	1984	109,364		108,852	512	28,814	1,989	80,550	2,177	2,177	2,177	34	2,177	69,065	63,134	30,479
Selorejo	1975	107,514	5,000	102,424		45,067	1,980	62,447	2,048	2,048	2,048	25	2,048	52,205	46,060	15,332
Lengkong	1975	37,912	142	37,770		18,619	1,980	21,293	755	755	755	25	755	17,516	15,250	3,919
Wlingi	1996	216,594		194,555	22,039	8,299	2,001	208,295	8,299	8,288	8,299	46	3,881	175,627	163,054	105,587
Menturus Rubber Dam	1993	18,350		18,350		1,468	1,998	16,882	1,468	367	367	43	367	13,946	12,845	7,340
Jatimulerek	1991	11,714		11,714		1,406	1,996	10,308	234	234	234	41	234	9,137	8,434	4,920
Wonokromo	1993	7,038		7,038		563	1,996	6,475	563	141	141	43	141	5,349	4,927	2,815
Jagir	1984	450		450		119	1,989	340	9	9	9	34	9	294	266	129
Mlirip	1979	1,700		1,700		614	1,984	1,092	34	34	34	29	34	921	810	307
Cunungsari	1981	35,046		35,046		11,215	1,986	23,831	701	701	701	31	701	20,327	18,224	7,710
Gubeng	1993	5,718		5,718		457	1,998	5,261	457	114	114	43	114	4,346	4,003	2,286
Sengguruh	1988	160,716	8,677	106,270	63,769	83,256	1,993	97,458	2,165	2,165	2,165	38	2,165	86,631	80,135	47,654
Bening	1984	66,259		66,259		17,227	1,989	49,032	1,325	1,325	1,325	34	1,325	42,406	38,430	18,553
Mrican	1992	37,797		37,797		3,780	1,997	34,017	756	756	756	42	756	30,238	27,970	16,631
Dam Total		1,492,482	13,819	1,383,435	95,138	521,672		976,810	33,942	32,066	32,077		27,669	817,388	734,382	319,351
River Improvement		at 1997 price														
Porong I	1997	113,468		113,468		0	2,002	113,468	2,269	2,269	2,269	47	2,269	102,121	95,313	61,273
Porong II	1994	41,523		20,429	15,094	10,842	1,999	30,881	3,547	3,547	529	44	529	22,201	20,615	12,886
Brantas Middle Reach1	1983	363,784		363,784		101,860	1,988	261,924	7,276	7,276	7,276	33	7,276	225,546	203,719	94,584
Brantas Middle Reach2	1993	176,143		176,143		14,091	1,998	162,052	3,523	3,523	3,523	43	3,523	144,437	133,869	81,026
Surabaya I	1981	141,462		141,462		45,268	1,986	96,194	2,829	2,829	2,829	31	2,829	82,048	73,560	31,122
Surabaya II		N/A				0									0	0
Kedurus	1995	95,064	13,886	73,849	7,347	5,893	2,000	89,191	2,946	2,946	2,946	45	1,477	77,399	72,968	50,812
Neyama Tunnel	1993	12,468		12,468		999	1,998	11,469	250	250	250	43	250	10,240	9,491	5,744
Tulungagung Drainage Project	1981	353,755	319	346,767	6,669	46,281	1,996	305,474	6,935	6,935	6,935	41	6,935	270,797	249,991	145,961
Widas Irrigation Project	1990	52,732	6,664	33,307	12,761	17,424	1,995	35,308	666	666	666	40	666	31,977	29,979	19,987
Flood forecasting system	1990	27,474		1,493	25,981	26,190	1,995	1,284	30	30	30	40	30	1,135	1,045	597
River improvement total		1,377,913	20,871	1,289,190	67,852	270,648		1,107,265	30,272	30,271	27,253		25,784	967,902	890,550	503,793
Total invested		2,870,395														
(planned investment)						depreciation in 2005	acumulated depl up to 2002	book value at2002	depreciation in 2005	book value at2005	duration 5years	duration 50years	depreciation in 2020	book value at2020		
Wonorejo	1999	305,054	17,460	260,084	27,501	10,702	32,106	272,948	5,202	257,343	2,004	2,049	5,202	179,318		
Beng	2010	242,657	132,000	96,221	14,436						2,015	2,060	1,924	207,052		
Kedungwarak	2020	143,847	62,000	70,393	10,554						2,025	2,070		140,328		
Genteng I	2016	266,607	19,120	210,945	32,542						2,021	2,066		214,371		
Bypass channel	2004	50,720		50,720					1,015	47,685		2,054	1,915	33,481		
Improvement of PPWS	2002	56,667			56,667	11,333	11,333	45,334	11,333	11,333	2,007	2,007				
Widas river	2012	124,236		124,236								2,062	2,485	101,874		
Lodoyo diversion tunnel	after2020	421,998														
New lab.	2002	4,500			4,500	900	900	3,600	900	900	2,007	2,007				
Watershed/sabo		586,976		566,976		1,514	2,801	74,206	3,461	170,592			9,039	442,897		
Canal lining	2011	180,365		136,310	24,055						2,010	2,061	2,726	109,046		
Inter agency inf system (integration)		17,714				5,905	5,905	11,809	5,905	5,904			5,904	0		
PBK asset exold Wono.150	2002	350,000			350,000	7,000	7,000	343,000	7,000	322,000		2,052	7,000	217,000		
PGKS asset	2002	206,000			206,000	4,120	4,120	201,880	4,120	189,520		2,052	4,120	127,720		
Total planned		2,910,350	231,480	2,077,894	170,255	41,474	64,165	952,777	38,956	1,005,278			39,415	1,773,089		
Grand Total		5,780,745	268,270	4,750,519	333,244	94,926		2,738,067	92,408	2,630,210			92,867	2,596,234		

Watershed manaxement/Sabc	Total	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	566,976	1,890	19,537	20,108	35,474	34,981	34,963	34,966	64,623	47,615	47,615	18,653	18,653	19,348	18,653	18,653	18,653
	total invest		21,427	41,533	77,007	111,988	146,931	181,897	246,520	294,135	341,750	360,403	379,056	398,404	417,057	435,710	454,363
	depreciatic	38	428	821	1,514	2,183	2,839	3,481	4,704	5,563	6,404	6,849	6,889	7,138	7,368	7,594	7,815
	accumulation		466	1,287	2,801	4,985	7,824	11,305	16,009	21,572	27,975	34,824	41,512	48,650	56,019	63,612	71,427
	book value	1,852	20,961	40,246	74,206	106,983	139,107	170,592	230,511	272,563	313,775	325,779	337,543	349,754	361,038	372,098	382,936
		2015	2016	2017	2018	2019	2020										
		18,653	19,348	18,653	18,653	18,653	18,653										
	total inves	473,016	492,364	511,017	529,670	548,323	566,976										
	depreciatic	9,460	8,230	8,438	8,642	8,843	9,039										
	accumulat	80,888	89,117	97,555	106,198	115,040	124,079										
	book value	392,128	403,247	413,462	423,472	433,283	442,897										

Table A.14-9 Operational Flow Chart of MIS

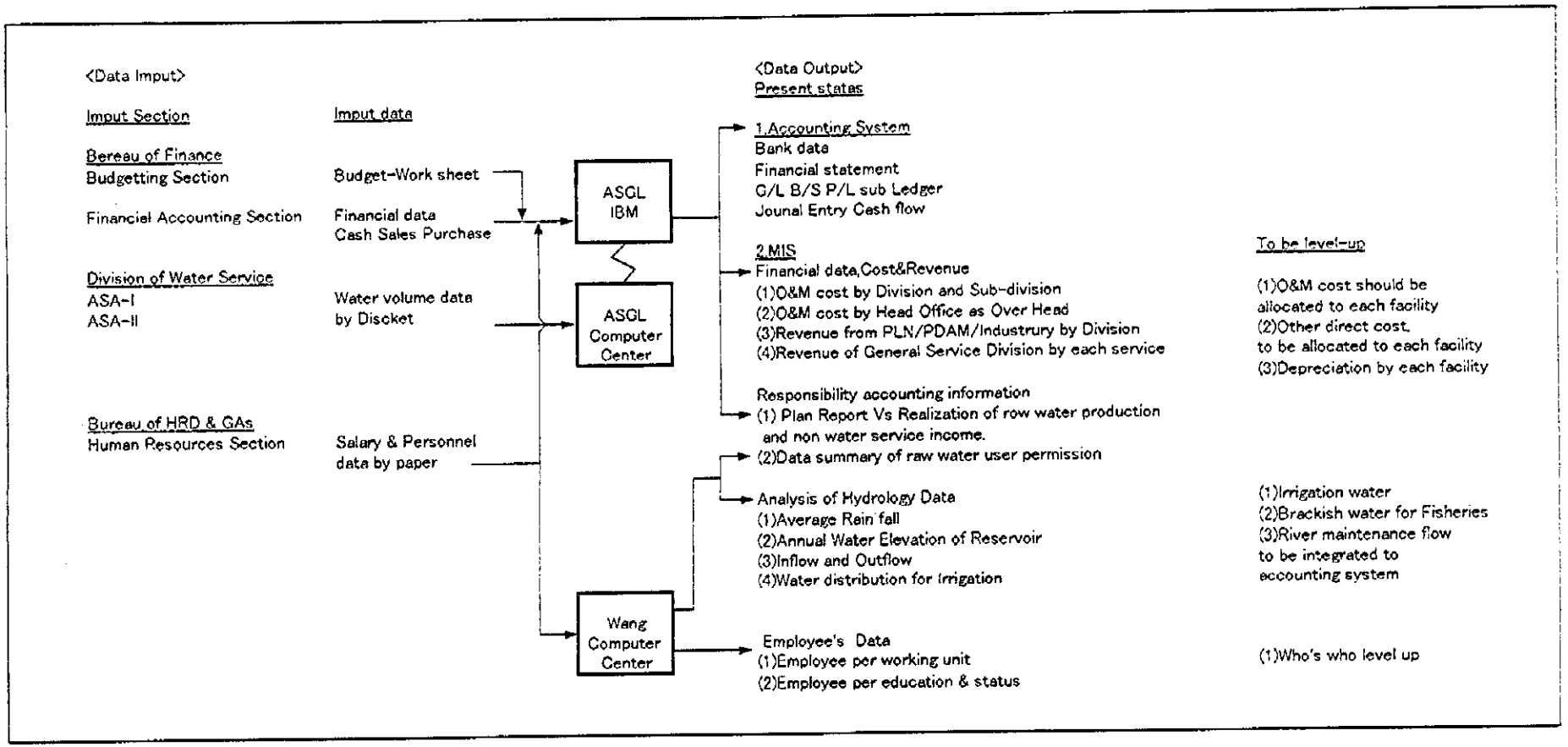

Table A.14-10 Projected Balance Sheets

FY1996

Billion Rp.

PJT

asset		funding	
Current	14	Current	12
		Others	9
Fixed	14	Equity	27
Total	28	Total	48
Expense	18	Revenue	23
Profit	5		

Managed asset FY2002

asset		funding
Land	52	
Construction	2,123	
Equipment&		
Consulting&		
Other Expense	113	
Depreciation	95	
Total in Net	2,193	

PKB FY1996

asset		funding	
Land	48	Gov't Fund	131
Construction	340	Overseas Loan	349
Equipment	16	Others	20
Consulting	73		
Other Expense	23		
Total	500		500
Land Purchase	10		
Construction	53		
Equipment	1		
Consulting	5		
Other Expense	2	Payment from	
Total	71	Gov't	71

PGKS FY1996

asset		funding	
Land	8	Gov't Fund	91
Construction	159	Overseas Loan	98
Equipment	13	Others	19
Consulting	21		
Other Expense	5		
Total	206		206
Land Purchase	2		
Construction	10		
Equipment			
Consulting	1		
Other Expense	1	Payment from	
Total	14	Gov't	14

FY2002 Perum (after consolidation)

Billion Rp.

asset		funding	
Current	25	Current	12
Fixed	25	Other	9
Sub total	50	Equity	29
Managed asset*	2,738	Contradictory A/C	2,738
Total	2,788		2,788
Depreciation	95	Contradictory A/C	95

*PJT Managed asset	2,193
PBK asset (excld Wonorejo150	343
PGKS asset	202
Total	2,738

FY2005 Persero

Billion Rp.

asset		funding	
Current	28	Current	14
Fixed	28	Other	10
Sub total	56	Equity	32
Construction	2,630	Capital Note for Gov't Loan	1,305
		Reserve for Depreciation	1,325
Total	2,686		2,686
Depreciation	92	Reserve deductior	92

FY2005 Shadow A/C

asset		funding	
Loan Investment to PJT	1,305	Overseas Loan Out to MOF	
Deferred asset	1,325	Amotizationn	
Total	2,630	Total	2,630
Depreciation	92		

FY2020 Target year

Billion Rp.

asset		funding	
Current	63	Current	31
Fixed	63	Other	33
Sub total	126	Equity	62
Construction	2,596	Capital Note	2,596
Total	2,722		2,722
Depreciation	93	Reserve deductior	93

FY2020 Shadow A/C

asset		funding	
Loan Investment to PJT	2,596	Overseas Loan Out to MOF	
		Amotizationn	
		Total	2,596
Depreciation	93		

Table A.14-11 Framework of MIS

Management Information Systen 1.Profit Center Unit/Cost vs R	Direct cost O&M cost (A)	Business Trip	Direct Personnel	General Affairs	Depreciati	Others	Total Direct Co	Total Indirect cost	Total Cost	Cost Recovery Revenue PLN	PDAM	Industry	Others Sand L. Rent	Total Revenue	Income
Water Service Division I	569						569		569				86	86	-483
Sub-division 1	3,063						3,063		3,063	6,022		386		6,408	3,345
Senggruh										849				849	849
Sutami&Lahor										5,173				5,173	5,173
south Malang															
Sub-division 2	1,096						1,096		1,096	2,422		4		2,426	1,330
Wlingi&Lodoyo										2,169			55	2,224	2,224
Lodoyo Irrigation										253				253	253
Selorejo															
Blitar															
Sub-division 3	435						435		435	1,455		131		1,586	1,151
Tulungagung Hydro P.										1,455				1,455	1,455
Tulungagung Drainage															
Sub Total	5,163						5,163		5,163	9,899		521	141	10,561	5,398
Water Service Division II	545						545		545				18		-545
Sub-division 1	886						886		886			846		846	-40
Kediri															
Nganjuk Widas															
Jombang															
Sub-division 2	452						452		452		566	2,017		2,583	2,131
Mojokerto															
New Lengkong											566			566	566
Porong															
Sidoarjo															
Sub-division 3	720						720		720		3,118	750		3,868	3,148
Surabaya river											3,045			3,045	3,045
Gresik Mas river											73			73	73
Sub Total	2,603						2,603		2,603		3,684	3,613	18	7,315	4,712
Total	7,766						7,766			9,899	3,684	4,134	159	17,876	10,110

2.Profit Center Unit/Cost vs Re	Direct cost O&M cost (B)		Direct Personnel	General Affairs	Depreciati	Others	Total Direct cos	Total Indirect Cost	Total Cost	Revenue Ticket sol	Others			Total Revenue	Income
General Service Division	71						71		71						-71
Tourism	52						52		52	479				479	427
Selorejo										322				322	322
Karenkates										157				157	157
Others															
Equipment Rental	276						276		276	Fee income 1,332				1,332	1,056
Construction Service	2						2		2	Fee income 1,049				1,049	1,047
Consulting Service	0						0			Fee income 316				316	316
Sub Total	401						401		401	3,176				3,176	2,775
														21,052	12,885 (J)

3. Head Office/Cost Center	Direct cos O&M (C)	Business Trip	Direct Personnel	General Affairs	Depreciati	Others	Total H.O. Direct Co	Total H.O. Indirect Cost	
	714	85	790	214	1,027	1,405	4,235	(E)	
Total Direct cost (D)	8,881	85	790	214	1,027	1,405	12,402	(F)	
H.O.Indirect cost		339	3,206	726	618	772		5,661	(G)
Total									18,063 (H)

(I)

O&Mcost (D)=(A+B+C)
Direct cost(F)=O&M cost+other direct cost
Total cost(H)=(F+G)
(I)=Total operating Revenue
(J)=Total Revenue(I)-(A+B)
Total Income(K)=(I-H) 2,989 (K)

Table A.14-12 Profit & Loss Statement Projection

projection FY	1997 estimate	2002				2005				2020			
Operating revenue	23,978	163,484 price/Comp demand year				180,384 price/Comp demand year				280,081 price/Comp demand year			
PLN	7,300 Rp11.76/Kwh	13,496 Rp14/Kwh	964	Senggaru	81	15,424 Rp15/Kwh	964	Senggaru	81	22,057 Rp23/Kwh	959	Senggaru	81
PDAM	5,932 Rp92.1/m³	7,050 Rp30/m³	235	Sutami	465	9,360 Rp30/m³	312	Sutami	464	20,940 Rp30/m³	698	Sutami	459
Industry	8,284 Rp51.5/m³	4,998 Rp51/m³	98	Wlingi	164	5,151 Rp51/m³	101	Wlingi	165	6,018 Rp51/m³	118	Wlingi	165
Fishery		2,199 Rp30/m³	73	Lodoyo	38	3,230 Rp34/m³	95	Lodoyo	38	10,100 Rp50/m³	202	Lodoyo	38
Irrigation		40,668 Rp30/m³	1,356	Selorejo	23	43,826 Rp34/m³	1,289	Selorejo	23	47,750 Rp50/m³	955	Selorejo	23
sub total	21,523	68,411	0.44	Tulungagg	130	76,991	0.04	Tulungagg	130	106,865		Tulungagg	130
Sand utilization	160	258	0.12	Wonolejo	63	288	0.04	Wonolejo	63	1,200	0.21	Wonolejo	63
Clean water	10	13	0.06			17	0.10			71	0.21	Beng	11
Water quality lab	10	10	0.00			12	0.07			47	0.19		
Pressed roof	10	10	0.00			12	0.07			47	0.19		
Land rent	105	170	0.12			226	0.11			944	0.21		
Tourism	560	984	0.15			1,558	0.19			21,997	0.87		
Equip rental	800	1,250	0.11			1,513	0.07			6,316	0.21		
Consulting service	400	1,485	0.54			1,976	0.11			8,254	0.21		
Construction service	400	53,052	26.33			58,984	0.04			109,705	0.06		
Sabo		37,341				36,806	0.00			19,635	-0.03		
New business		500				2,000	1.00			5,000	0.10		
FY	1997	2002				2005				2020			
Operating expense	18,884	149,843	1.39			150,782	0.00			212,315	0.03		
Direct cost	13,098	139,455	1.93			139,843	0.00			199,762	0.03		
O&Mexcl dredging	2,400	23,335	0.43			27,581	0.06			27,381	0.00		
Senggrah	1,200	649	-0.09			649	0.00			649	0.00		
Sutami													
Wingi		14,428 dredg total				7,679 dredg total				7,679 dredg total			
Lodoyo		3,837	18,714			595	8,923			595	8,923		
SABO		35,474				34,966				19,653			
total O&M+dredg&sabo	8,600	77,523	1.60			71,270	-0.03			54,957	-0.02		
Personnel	1,300	3,579	0.35			3,579	0.00			3,579	0.00		
General affairs	240	365	0.10			473	0.10			1,719	0.18		
Business trip	30	315	1.90			1290	1.03			5,389	0.21		
Equipment service	840	999	0.11			1334	0.11			5,052	0.19		
Consulting service	320	1,188	0.54	ByPass	12,380	1581	0.11			6,603	0.21		
Construction service	320	59,399	31.30	Widas	19,745	56,035	0.04	Beng	27,650	104,220	0.06	FFWS	5,047
Tourism	448	787	0.15	InterAgen	2,583	1,246	0.19	Widas	13,034	17,593	0.87	Lodoyo	99,173
Sub totalGeneral+others	3,898	64,053	5.21	Canal finin	13,691	61,859	0.05	Canal finin	35,151	140,581	0.08		
Depreciation	1200	4300	0.52			3135	-0.09			645	-0.05		
Depreciation of M assets													
cost of new business	0	400				1600				4000			
Indirect													
personnel cost	3,000	4,015	0.07			4,015	0.00			4,015	0.00		
Other indirect Cost	2,816	5,613	0.23			6,064	0.03			7,779	0.02		
general affairs	848	1,000	0.04			1,000	0.00			1,000	0.00		
business trip	370	2,795	1.31			3,000	0.02			3,000	0.00		
depreciation&	730	1,000	0.07			1,000	0.00			1,000	0.00		
marketting	180	293	0.13			390	0.11			1527	0.21		
supervision co	220	225	0.00			299	0.11			300	0.00		
guidance cost	200	200	0.00			242	0.07			300	0.02		
up grading cos	70	100	0.09			133	0.11			552	0.21		
HRD cost(3)	170	758	0.69			758				753			
Total indirect	5,786	10,387	0.16			10,838	0.01			12,553	0.01		
Total op income	5,094	13,641	0.34			29,602	0.39			67,766	0.09		
Non operating revenue													
PGPS sara	845	1,139	0.15			0	-0.33			0			
Interest&divide	2,000	2,500	0.05			2,800	0.04			6,300	0.08		
Non operating expense	0	0				0				0			
Non operating income	2845	3,639	0.08			2,800	-0.08			6,300	0.08		
Income before tax	7,739	17,280	0.25			32,402	0.29			74,066	0.09		
Income after tax(30%)	5,417	12,096	0.25			22,681	0.29			51,846	0.09		

Note for computation of unit water rates applied and water demand

	actual/V1.4 4Main R. 1997	2002	2005	2020	actual/V4.2 1996	2002	2005	2020
Fishery	price Rp/m3				DemandMMm³/yr			
normal	25	30	34	50	40.6	97.8	126.3	288.7
drought	25	30	34	50	20.4	48.9	63.1	134.3
average					30.6	73.3	94.7	201.5
realistic	5	10	12	28				
Irrigation								
normal	25	30	34	50	1,943.2	1,778.9	1,696.8	1288.1
drought	25	30	34	50	1,035.1	932.3	880.9	624
average	25	30	34	50	1,489.2	1,355.6	1,288.9	955.1
realtic	5	10	12	28				
PLN	12	14	15	23	620	964	964	959
PDAM	32.1	30	30	30	108	313.5	418.3	930
drought		30	30	30	54	156.8	208.1	455
average		30	30	30	81.0	235.1	312.2	837.5
Industry	54.5	51	51	51	104	114.5	119.8	146
drought		51	51	51	78.8	81.4	82.7	89.3
average		51	51	51	91.4	98.0	101.2	117.7

water demand MMm³/year

		FY2002	2005	2020
		30	34	50
x { 40.8+(258.7-40.8)x(2002-1996)/(2020-1996) }		2,976	4,254	13,435
x { 20.4+(134-20.4)x(2002-1996)/(2020-1995) }		1,433	2,127	6,715
Appropriat	Rp million	2,232	3,191	10,075
		10	12	28
		935	1,554	6,986
		488	727	3,492
Realistic	Rp million	301	1,165	5,239
		30	34	50
	Rp million	40,669	43,621	47,753
		10	12	28
	Rp million	13,559	15,466	24,831
difference	Rp million	29,643	30,380	27,757
		13,873	15,258	22,057
	Rp million	7,054	9,366	29,925
	Rp million	4,996	5,163	6,900