| No. |
|---|

# THE STUDY ON CAPACITY DEVELOPMENT FOR JENEBERANG RIVER BASIN MANAGEMENT IN THE REPUBLIC OF INDONESIA

# FINAL REPORT

## VOLUME III-2

## SUPPORTING REPORT 2

**March 2005**

Japan International Cooperation Agency

| GE |
|---|
| JR |
| 05-015 |

# THE STUDY ON
# CAPACITY DEVELOPMENT FOR JENEBERANG RIVER BASIN MANAGEMENT
# IN
# THE REPUBLIC OF INDONESIA

# FINAL REPORT

## VOLUME III-2
## SUPPORTING REPORT 2

**March 2005**

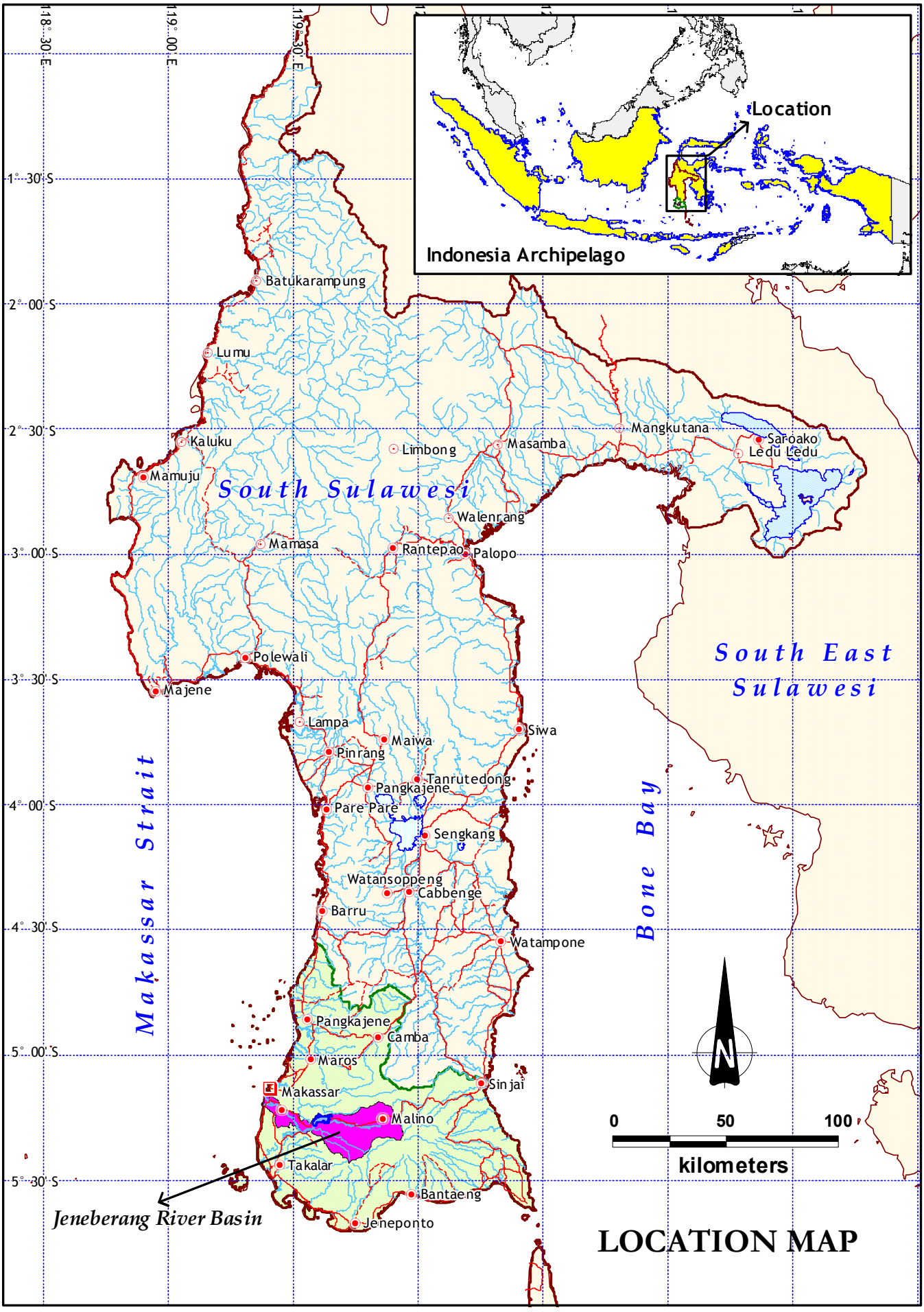
Japan International Cooperation Agency

## Composition of Final Report

| | |
|---|---|
| **Volume I** | **Executive Summary** |
| **Volume II** | **Main Report** |
| **Volume III-1** | **Supporting Report 1** |
| **Volume III-2** | **Supporting Report 2** |
| **Volume IV-1** | **Data Book 1-Guidelines and Manuals** |
| **Volume IV-2** | **Data Book 2-Data** |

**Cost Estimate:** **October 2004 Price**

**Exchange Rate:** **IDR 1,000 = JPY 11.92 = USD 0.1094**
**JPY 100 = IDR 8,387 = USD 0.9174**
**USD 1 = JPT 109.0 = IDR 9,142**
(Bank Indonesia, October 2004 average TT selling rate)


Location
Indonesia Archipelago
118° 30' E
119° 00' E
119° 30' E
1° 30' S
2° 00' S
2° 30' S
3° 00' S
3° 30' S
4° 00' S
4° 30' S
5° 00' S
5° 30' S
Batukarampung
Lumu
Kaluku
Mamuju
Limbong
Masamba
Mangkutana
Saroako
Ledu Ledu
South Sulawesi
Walenrang
Mamasa
Rantepao
Palopo
Polewali
Majene
South East Sulawesi
Lampa
Maiwa
Siwa
Pinrang
Tanrutedong
Pangkajene
Pare Pare
Sengkang
Watansoppeng
Cabbenge
Barru
Watampone
Makassar Strait
Bone Bay
Pangkajene
Camba
Maros
Sinjai
Makassar
Malino
Takalar
Bantaeng
Jeneponto
Jeneberang River Basin
N
0
50
100
kilometers
LOCATION MAP

**THE STUDY ON**
**CAPACITY DEVELOPMENT FOR**
**JENEBERANG RIVER BASIN MANAGEMENT**
**IN**
**THE REPUBLIC OF INDONESIA**

# FINAL REPORT

## Volume III-2 Supporting Report 2

**Table of Contents**

# ABBREVIATIONS (1/5)

| ABBREVIATION | BAHASA INDONESIA | ENGLISH |
|---|---|---|
| **ADB** | Bank Pembangunan Asia | Asian Development Bank |
| **Amdal** | Analisa Mengenai Dampak Lingkungan | Environmental Impact Assessment (EIA) |
| **Andal** | Analisa Dampak Lingkungan | Environmental Impact Analysis |
| **APBD** | Anggaran Pendapatan dan Belanja Daerah | Regional Government Revenue and Expenditure Budget (Province/Regency Budget) |
| **APBN** | Anggaran Pendapatan dan Belanja Negara | Central Government Revenue and Expenditure Budget (National Budget) |
| **ASA** | Air dan Sumber-sumber Air | Water and Water Resources |
| **ASGL** | Sistem Akuntasi Buku Besar | Accounting System General Ledger |
| **Askes** | Asuransi Kesehatan | Health Insurance |
| **AWLR** | Alat Pencatat Tinggi Muka Air Otomatis | Automatic Water Lever Recorder |
| **Bakornas PB** | Badan Kordinasi Nasional-Penanggulangan Bencana | National Coordination Board for Disaster Managemenet |
| **Balai PSDA** | Unit Pelakasana Teknis Dinas Balai Pengelolaan | Provincial River Basin Management Unit |
| **Bapedal** | Badan Pengendalian Dampak Lingkungan | Environmental Impact Management Agency |
| **Bappeda** | Badan Perencanaan Pembangunan Daerah | Regional Development Planning Agency |
| **Bapedalda** | Badan Pengendalian Dampak Lingkungan Daerah | Provincial Environmental Impact Agency |
| **Bappenas** | Badan Perencanaan Pembangunan Nasional | National Development Planning Agency |
| **Bili-Bili HEPP** | Pembangkit Listrik Tenaga Air Bili-bili | Bili-Bili Hydro Electric Power Plant |
| **BKPMM** | Badan Kerjasama Pengembangan Metropolitan Mamminasata | Mamminasata Metropolitan Development Cooperation Board |
| **BLK** | Balai Latihan Kerja | Government Work Training Office |
| **BMG** | Badan Meterologi dan Geofisika | Meterology and Geophysics Agency |
| **BOD** | Kandungan Oksigen dari Bahan Biologi dan Kimia | Biological Oxygen Demand |
| **BOD** | Direksi | Board of Directors |
| **BODD** | Surat Keputusan Direksi | Board of Directors Decree |
| **BPDAS** | Balai Pengelolaan Daerah Aliran Sungai | Watershed Management Office (under National Ministry of Forestry; formerly Land Rehabilitation and Soil Conservation Office, Balai RLKT) |
| **BPK** | Badan Pemeriksa Keuangan | Government Audit Agency |
| **BPKP** | Badan Pemeriksa Keuangan dan Pembangunan | Finance and Development Control Agency |
| **BPP** | Balai Penyuluhan Pertanian | Agricultural Extension Office |
| **BPTH** | Balai Pembenihan Tanaman Hutan | Forest Tree Seedling Office |
| **BPS** | Biro Pusat Statistik | Central Bureau of Statistics |
| **BUMD** | Badan Usaha Milik Daerah | Regional Government-owned Corporation |
| **BUMN** | Badan Usaha Milik Nasional | State-owned Corporation |
| **BWRM** | Pengelolaan Sumber Daya Air DAS | Basin Water Resources Management |
| **CDP** | Rencana Pengembangan Kapasitas | Capacity Development Plan |
| **CDMP** | Rencana Pengelolaan dan Pengembangan Menyeluruh | Comprehensive Development and Management Plan |
| **CEPI** | Kerjasama Program Lingkungan di Indonesia - | Collaborative Environmental Program in Indonesia |
| **CES/PPLH-UNHAS** | Pusat Penelitian Lingkungan Hidup - Universitas HasanuddinPusat Studi Lingkungan - Universitas Hasanuddin (PSL-UNHAS) | Center of Environmental Studies-Hasanuddin University |
| **CG** | Pemerintah Pusat | Central Government |
| **CP** | Periode Penagihan | Collection Periods |
| **COD** | Kandungan Oksigen dari Bahan Kimia | Chemical Oxygen Demand |
| **CSSP** | Standar Kompetensi Posisi Struktural | Competence Standard for Structural Position |
| **DAK** | Dana Alokasi Khusus | Special Allocations Fund |
| **Danrem** | Komandan Resort Militer | Commander of Regional Military Administrative Unit |
| **DASK** | Dokumen Anggaran Satuan Kerja | Work Unit Budget Document |
| **DAU** | Dana Alokasi Umum | General Allocations Fund |
| **DFWL** | Muka Air Banjir Rencana | Design Flood Water Level |
| **DG** | Direktorat Jenderal | Directorate General |
| **DGWR** | Direktorat Jenderal Sumber Daya Air | Directorate General of Water Resources |
| **DIK** | Daftar Isian Kegiatan | Activities Implementation Plan |
| **DIP** | Daftar Isian Proyek | Project Implementation Plan |
| **DIP** | Daftar Isian Proyek | Project Budget Allocation |
| **DO** | Oksigen Terlarut | Dissolved Oxygen |
| **DOMC** | Direktorat Kota Metropolitan | Directorate of Metropolitan City |
| **DPR** | Dewan Perwakilan Rakyat | House of Representatives |
| **DPRD** | Dewan Perwakilan Rakyat Daerah | Regional House of Representatives |

# ABBREVIATIONS (2/5)

| ABBREVIATION | BAHASA INDONESIA | ENGLISH |
|---|---|---|
| **DPSDA** | Dinas Pengelolaan Sumber Daya Air | Provincial Water Resources Services (PWRS) |
| **DPS** | Daerah Pengaliran Sungai | Watershed |
| **DWRS** | Dinas PSDA Kabupaten | District Water Resources Services |
| **EC** | Komisi Eropa | Europian Commission |
| **FAO** | Organisasi Pertanian dan Pangan PBB | United Nations Food and Agriculture Organization |
| **FFWS** | Sistem Peringatan dan Peramalan Banjir | Flood Forecasting and Warning System |
| **FIK-ORNOP/LSM** | Forum Informasi Komunikasi-Organisasi Non Profit/ Lembaga Swadaya Masyarakat | Communication & Information Forum - Non-Profit Organizations/Non-Governmental Organizations |
| **FMISP** | Proyek Sistem Irigasi Dikelola Petani | Farmer Managed Irrigation System Project |
| **FRAP** | Perencanaan Pemulihan Keuangan | Financial Recovery Action Plan |
| **F/S** | Studi Kelayakan | Feasibility Study |
| **FY** | Tahun Anggaran | Fiscal Year |
| **GBHN** | Garis Garis Besar Haluan Negara | Broad Outlines of the Nation's Direction |
| **GDP** | Produk Domestik Bruto | Gross Domestic Product |
| **GIS** | Sistem Informasi Geografik | Geographic Information System |
| **GMTDC** | PT. Gowa Makassar Tourism Development (GMTD) | Gowa Makassar Tourism Development Corporation |
| **GNRHL** | Gerakan Nasional Rehabilitasi Hutan dan Lahan | National Campaign for Land and Forest Rehabilitation |
| **GOI** | Pemerintahan Republik Indonesia | Government of Indonesia |
| **GR** | Peraturan Pemerintah (PP) | Government Regulation (GR) |
| **GRDP** | Produk Domestik Bruto Daerah | Gross Regional Domestic Product |
| **GWUA** | Perkumpulan Pemakai Air Tanah | Ground Water Users Association |
| **HEPP** | Pembangkit Listrik Tenaga Air | Hydro Electric Power Plant |
| **HO** | Kantor Pusat | Head Office |
| **HR** | Sumber Daya Manusia | Human Resources |
| **HRA** | Administrasi Sumber Daya Manusia | Human Resources Administration |
| **HRD** | Pengembangan Sumber Daya Manusia | Human Resources Development |
| **HRM** | Pengelolaan Sumber Daya Manusia | Human Resource Management |
| **HWL** | Tinggi Muka Air | High Water Level |
| **IKMN** | Inventarisasi Kekayaan Milik Negara | National Treasury Inventory System |
| **ORARI** | Organisasi Radio Amatir Indonesia | Indonesian Amateur Radio Organization |
| **IMT** | Penyerahan Pengelolaan Irigasi | Irrigation Management Transfer |
| **Inpres** | Instruksi Presiden | Presidential Instruction |
| **Inhutani** | PT. Industri Kehutanan dan Pertanian | Government-owned Forestry and Agricultural Industry Company |
| **IOMP** | Kebijakan Pengoperasian dan Pemeliharaan Irigasi | Irrigation O&M Policy |
| **IP3A** | Induk P3A | Main Water Users Association (at primary irrigation system level ) |
| **IPAIR** | Iuran Pelayanan Air Irigasi | Irrigation Service Fee ( ISF) |
| **IPABP** | Iuran Penggunaan Air Bawah Permukaan | Underground Water Use Fee |
| **IPAP** | Iuran Penggunaan Air Permukaan | Surface Water Use Fee |
| **IPLC** | Iuran Pembuangan Limbah Cair | Liquid Waste Disposal Fee |
| **IPEP** | Iuran Pembiayaan Eksplotasi dan Pemeliharaan | Fee for Financing Exploitation and Maintenance |
| **IR** | Komponen dari Kajian Khusus WATSAL yg bertujuan untuk peningkatan pengelolaan irigasi | A component of WATSAL Special Study aiming at improvement of irrigation management |
| **ISF** | Iuran Pelayanan Air Irigasi (IPAIR) | Irrigation Service Fee |
| **ISO** | Pengoperasian Standar International | International Standard Operation |
| **IWIRIP** | Proyek Pelaksanaan Pembaharuan Irigasi & Sumber Daya Air Indonesia | Indonesian Water Resources & Irrigation Reform Implementation Project |
| **IWRM** | Pengelolaan Sumber Daya Air Terpadu | Integrated Water Resources Management |
| **Jamsostek** | Jaminan Sosial Tenaga Kerja | Labor Social Insurance |
| **JBIC** | Bank Jepang untuk Kerjasama Internasional | Japan Bank for International Cooperation |
| **JBIC-SAPS** | Bank Jepang untuk Kerjasama Internasional - Bantuan Khusus untuk Keberlanjutan Proyek | Japan Bank for International Cooperation - Special Assistance for Project Sustainability |
| **JDESs** | Uraian Tugas dan Persyaratan Pegawai | Job Descriptions and Employee Specifications |
| **JICA** | Badan Kerjasama Internasional Jepang | Japan International Cooperation Agency |
| **JIWMP** | Proyek Pengembangan Irigasi dan Pengelolaan Sumber Daya Air di Jawa | Java Irrigation Improvement and Water Resources Management Project |
| **JRB** | Wilayah Sungai Jeneberang | Jeneberang River Basin |
| **JSUIT** | Tim Investigasi Khusus JICA Sabo | JICA Sabo Urgent Investigation Team |
| **Kapolda** | Kepala Polisi Daerah | Head of the Provincial Police |

# ABBREVIATIONS (3/5)

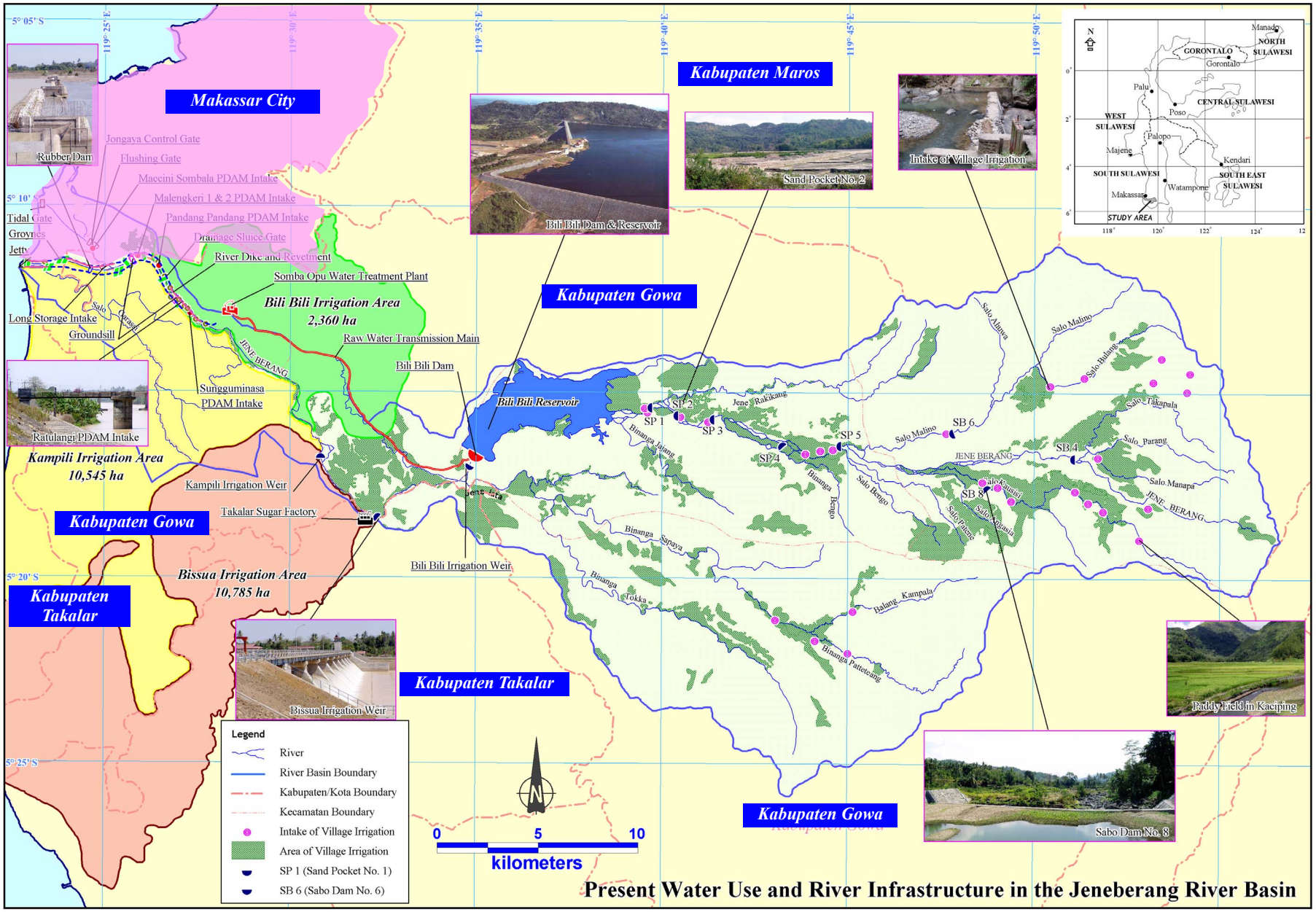
| ABBREVIATION | BAHASA INDONESIA | ENGLISH |
|---|---|---|
| **Kapolwil** | Kepala Polisi Wilayah | Head of the Regional Police |
| **Kepmen** | Keputusan Menteri | Ministerial Decree |
| **Keppres** | Keputusan Presiden | Presidential Decree |
| **KIMA** | Kawasan Industri Makassar | Makassar Industrial Zone |
| **Kimpraswil** | Departemen Pemukiman dan Prasarana Wilayah | Ministry of Settlement and Regional Infrastructure |
| **KPH** | Kelompok Pengaman Hutan | Forest Protector Group |
| **KPSA** | Kelompok Pelestari Sumber Daya Alam | Natural Resources Conservation Group |
| **KSM** | Kelompok Sosial Masyarakat | Social Community Group |
| **KT** | Kelompok Tani | Farmer's Group |
| **KTH** | Kelompok Tani Hutan | Forest Farmers Group |
| **KTP** | Kelompok Tani Penghijauan | Reforestation Farmers Group |
| **KUD** | Koperasi Unit Desa | Village Unit Cooperatives |
| **LAN** | Lembaga Administrasi Negara | State Administration Institute |
| **LHP** | Laporan Hasil Penelitian | Report on Research Result |
| **LKMD** | Lembaga Ketahanan Masyarakat Desa | Village Social Activities Group |
| **LWL** | Muka Air Rendah | Low Water Level |
| **MCM** | Juta m3 | Million Cubic Meter |
| **M&E** | Pemantauan & Evaluasi | Monitoring & Evaluation |
| **Menko-Ekuin** | Menteri Koordinator Ekonomi, Keuangan dan Industri | Coordinating Minister for Economy, Finance and Industry |
| **Meneg LH** | Menteri Negrara Lingkungan Hidup | State Minister of Environment |
| **MoHA** | Departemen Dalam Negeri | Ministry of Home Affairs |
| **MEI** | Laporan Monitoring, Evaluasi dan Implementasi | Monitoring, Evaluation and Implementations |
| **MENR** | Departemen Energi dan Sumber Daya Alam | Ministry of Energy and Natural Resources |
| **MoA** | Departemen Pertanian | Ministry of Agriculture |
| **MoF** | Departemen Keuangan | Ministry of Finance |
| **MoU** | Nota Kesepakatan | Memorandum of Understanding |
| **MPW** | Departemen Pekerjaan Umum | Ministry of Public Works |
| **MSOE** | Departemen BUMN | Ministry of Stated-Owned Enterprises |
| **MSRI** | Departemen Permukiman dan Prasarana Wilayah (Kimpraswil) | Ministry of Settlement and Regional Infrastructure |
| **NDF** | Dana Pembangunan Nasional | National Development Fund |
| **N-1** | Suatu komponen WATSAL Studi Khusus tentang peningkatan kerangka kelembagaan nasional | A component of WATSAL Special Study aiming at improvement of national institutional framework |
| **N-2** | Suatu komponen WATSAL Studi Khusus tentang peningkatan pengelolaan wilayah sungai | A component of WATSAL Special Study aiming at improvement of river basin management |
| **N-3** | Suatu komponen Watsal Studi Khusus mengenai pengelolaan kualitas air | A component of WATSAL Special Study aiming at water quality management |
| **NGO** | Lembaga Swadaya Masyarakat (LSM) | Non-Government Organization |
| **NTU** | Satuan Turbiditas Nephlometrik | Nephlometric Turbidity Unit |
| **NWL** | Muka Air Normal | Normal Water Level |
| **NWRC** | Dewan Sumber Daya Air Nasional | National Water Resources Council |
| **NWRP** | Kebijakan Sumber Daya Air Nasional | National Water Resources Policy |
| **O&M** | Operasi & Pemeliharaan (O&P) | Operation & Maintenance |
| **OECD** | Organisasi Kerjasama Ekonomi & Pembangunan | Organization for Economic Co-operation & Development |
| **OECF** | Pendanaan Kerjasama Ekonomi Luar Negeri Jepang | Overseas Economic Cooperation Fund of Japan |
| **OJT Training** | Pelatihan Kerja di Tempat | On the Job Training |
| **P.T.** | Perseroan Terbatas | Limited Liabilities Corporation |
| **PAB** | Penyediaan Air Baku | Raw Water Supply (RWS) |
| **PABJ** | Penyediaan Air Baku Jeneberang | Jeneberang Raw Water Supply |
| **PAD** | Pendapatan Asli Daerah | Regional Government Revenue |
| **Pangdam** | Panglima Daerah Militer | Territorial Military Commander |
| **PBB** | Pajak Bumi dan Bangunan | Land and Building Tax |
| **PBPP** | Pengendalian Banjir dan Pengamanan Pantai | Flood Control and Coastal Protection |
| **PCM** | Manajemen Siklus Proyek | Project Cycle Management |
| **PDAM** | Perusahaan Daerah Air Minum | Regional Drinking Water Supply Company |
| **PDM** | Matriks Disain Proyek | Project Design Matrix |
| **Perda** | Peraturan Daerah | Regional Regulation (RR) |
| **Permen** | Peraturan Menteri | Ministerial Regulation |
| **Perum** | Perusahaan Umum | Public Corporation |

# ABBREVIATIONS (4/5)

| ABBREVIATION | BAHASA INDONESIA | ENGLISH |
|---|---|---|
| **Persero** | Perusahaan Perseroan | Copartnership / Shareholding Corporation |
| **PGPNS** | Peraturan Gaji Pegawai Negeri Sipil | Government Employee Salary Rule |
| **PHU** | Unit Hydrologi Propinsi | Provincial Hydrology Unit |
| **PIPWSJ** | Proyek Induk Pengembangan Wilayah Sungai Jeneberang | Jeneberang River Basin Development Project (JRBDP) |
| **PIRASS** | Proyek Irigasi dan Rawa Andalan Sulawesi Selatan | South Sulawesi Major Swamp and Irrigation Project |
| **PISP** | Proyek Irigasi Partisipatif | Participatory Irrigation Sector Project |
| **PJT** | Perum Jasa Tirta | Jasa Tirta Public Corporation |
| **PKK** | Pendidikan Keterampilan Keluarga | Skills Training for Housewifes |
| **PKPI** | Pembaharuan Kebijakan Pengelolaan Irigasi | Irrigation Management Policy Reform (IMPR) |
| **PKPT** | Program Kerja Pengawasan Tahunan | Work Program for Annual Inspection (Audit) |
| **PLN** | Perusahaan Listrik Negara | State Electricity Company |
| **PLTA** | Pembangkit Listrik Tenaga Air | Hydro Electric Power Plant |
| **PNS** | Pegawai Negeri Sipil | Government Employees |
| **PO** | Rencana Pengoperasian | Plan of Operation |
| **POJ** | Perum Otorita Jatiluhur | Jatiluhur Authority Public Corporation |
| **Pokja** | Kelompok Kerja | Working Group |
| **POWAA** | Pola Operasi Waduk & Alokasi Air | Semiannual Water Allocation Plan |
| **PP** | Perencanaan Partisipatif | Participatory Plan |
| **PPAP** | Pajak Pengambilan Air Permukaan | Surface Water Use Tax |
| **PPABP** | Pajak Pengambilan Air Bawah Permukaan | Underground Water Use Tax |
| **PPh** | Pajak Penghasilan | Income Tax |
| **PPL** | Penyuluh Pertanian Lapangan | Field Extension Workers |
| **PPSA** | Pengembangan dan Pengelolaan Sumber Air | Water Resources Development and Management |
| **PPSAJ** | Pengembangan & Pengelolaan Sumber Air Jeneberang | Jeneberang Water Resources Development and Management |
| **PTPA** | Panitia Tata Pengaturan Air | Provincial Water Resources Coordination Committee(PWRC) |
| **PPTPA** | Panitia Pelaksana Tata Pengaturan Air | River Basin Water Resources Coordination Committee (RBWRC) |
| **PRA** | Identifikasi Desa secara Partisipatif | Participatory Rural Appraisal |
| **Prokasih** | Program Kali Bersih | Clean River Campaign Program |
| **Propeda** | Program Pembangunan Daerah | Regional Development Program |
| **Propenas** | Program Pembangunan Nasional | National Development Program |
| **PSB** | Petunjuk Siaga Bajir | Flood Alert Manual |
| **PSO** | Kewajiban Pelayanan Umum (KPU) | Public Service Obligation |
| **PSP** | Partisipasi Pihak Swasta | Private Sector Participation |
| **PUKK** | Pembinaan Usaha Kecil dan Koperasi | Small Business and Cooperative Guidance |
| **PWRC** | Panitia Pelaksana Tata Pengaturan Air (PPTA) | Provincial Water Resource Coordination Committee |
| **QMS** | Sistem Pengelolaan Mutu | Quality Management System |
| **RBPC** | Badan (Perum) Pengelola Wilayah Sungai | River Basin Public Corporation |
| **RBM** | Pengelolaan Wilayah Sungai | River Basin Management |
| **RBMC** | Korporasi Pengelola Wilayah Sungai | River Basin Management Corporation |
| **RBWRC** | Panitia Pelaksana Tata Pengaturan Air (PPTPA) | River Basin Water Resources Coordination Committee |
| **RD** | Rapat Direksi | Board of Director's Meeting |
| **Repetada** | Rencana Pembangunan Tahunan Daerah | Regional Annual Development Plan |
| **RC** | Kurva Dasar Pengoperasian Waduk | Reservoir Operation Curve |
| **RJP** | Rencana Jangka Panjang | Long Term Plan |
| **Renstra** | Rencana Strategis | Strategic Plan |
| **RIM** | Pengelolaan Prasarana Wilayah | River Infrastructure Management |
| **RKAP** | Rencana Kerja Anggaran Perusahaan | Corporate Work Plan Budget |
| **RKM** | Rapat Koordinasi Manajemen | Management Coordination Meeting |
| **RKOP** | Rencana Kerja Operasional Perusahaan | Corporate Work Plan Operations |
| **RKU** | Rapat Koordinasi Unit | Unit Coordination Meeting |
| **RLKT** | Rehabilitasi Lahan dan Konservasi Tanah | Land Rehabilitation and Soil Conservation |
| **RMCD** | Proyek Pengembangan Kapasitas Pemantauan Daerah | Regional Monitoring Capcity Development Project |
| **ROE** | Laba atas Modal Sendiri | Return on Equity |
| **ROI** | Laba atas Investasi | Return on Investment |
| **RPH** | Polisi Hutan | Forest Ranger Resort |
| **RTM-P** | Rapat Tinjauan Managemen - Pusat | Central Management Evaluation Meeting |

# ABBREVIATIONS (5/5)

| ABBREVIATION | BAHASA INDONESIA | ENGLISH |
|---|---|---|
| **RTM-U** | Rapat Tinjauan Management - Unit | Unit Management Evaluation Meeting |
| **RWL** | Muka Air Waduk | Reservoir Water Level |
| **RWTM** | Pipa Transmisi Utama Air Baku | Raw Water Transmission Main |
| **Satlak-PB** | Satuan Pelaksana-Penanggulangan Bencana | Implementation Unit for Disaster Management ( District Level) |
| **Satkorlak** | Satuan Coordinator Pelaksana | Implementation Coordination Unit ( Province Level) |
| **SDA** | Sumber Daya Air | Water Resources |
| **SEC** | Komisi Pertukaran Sekuriti | Security Exchange Commission |
| **SKI** | Surat Ketetapan Iuran | Fee Enactment |
| **SMEs** | Usaha Kecil Menengah (UKM) | Small and Medium Size Enterprises |
| **SMSOE** | Menteri Negara BUMN | State Minister of State-Owned Enterprises |
| **SOE** | Badan Usaha Milik Negara (BUMN) | State-Owned Enterprises |
| **SP3AP** | Surat Penetapan Pengambilan dan Penggunanan Air Permukaan | Surface Water Abstraction and Utilization Enactment |
| **SPI** | Satuan Pengawas Internal | Internal Control Unit |
| **SPK** | Surat Perjanjian Kerja | Work Agreement Letter |
| **SPTP** | Surat Perintah Tugas Pemeriksaan | Inspection Letter |
| **SS** | South Sulawesi | Sulawesi Selatan |
| **SS** | Padatan Tersuspensi | Suspended Solid |
| **SuSENas** | Survey Sosial Ekonomi Nasional | National Socio-Economic Survey |
| **SWL** | Muka Air Tambahan | Surcharge Water Level |
| **SWOT Analysis** | Analisa Kekuatan, Kelemahan, Peluang dan Ancaman | Strength, Weakness, Opportunity and Threat Analysis |
| **SWS** | Satuan Wilayah Sungai | River Basin Unit |
| **TA** | Bantuan Tekhnis | Technical Assistance |
| **TATO** | Perputaran Total Aset | Total Asset Turn Over |
| **T-C** | Total Bakteri Coli | Total Coliforms |
| **TDS** | Total Padatan Terlarut | Total Dissolved Solid |
| **TET** | Tim Evaluasi Tarif | Tariff Evaluation Team |
| **TIU** | Unit Pelaksana Teknis | Technical Implementation Unit |
| **TNA** | Pelatihan Analisa Kebutuhan | Training Needs Analysis |
| **TSS** | Total Padatan Tersuspensi | Total Suspended Solid |
| **ToR** | Kerangka Acuan | Term of Reference |
| **UFW** | Air yang hilang | Unaccounted-for Water |
| **UKL/UPL** | Upaya Kelola Lingkungan / Upaya Pemantau Lingkungan | Environmental Management Effort / Environmental Monitoring Effort |
| **UNWB** | Unit Usaha Non-Air | Non-Water Business Unit |
| **UPTD/Balai PSDA** | Unit Pelaksana Teknis Daerah/Balai PSDA | Local Technical Implementation Unit/Balai PSDA |
| **WATSAL** | Penyesuaian Pinjaman Sektor Sumber Daya Air | Water Resources Sector Adjustment Loan |
| **WATSAP** | Program Penyesuaian Sektor Air | Water Sector Adjustment Programme |
| **WB** | Bank Dunia | World Bank |
| **WiD** | Wanita dalam Pembangunan | Women in Development |
| **WISMP** | Proyek Pengelolaan Sektor Irigasi dan Sumber Air | Water Resources and Irrigation Sector Management Program |
| **WMO** | Badan Meteorologi Dunia | World Meteorogical Organization (WMO) |
| **WPM** | Pemantauan Pencemaran Air | Water Pollution Monitoring |
| **WQM** | Pemantauan Kualitas Air | Water Quality Monitoring |
| **WRM** | Pengelolaan Sumber Daya Air (PSDA) | Water Resource Management |
| **WS** | Wilayah Sungai | River Basin (RB) |
| **WTP** | Instalasi Pengelolaan Air (IPA) | Water Treatment Plant |
| **WUA** | Perkumpulan Petani Pemakai Air (P3A) | Water User Association |
| **WUAF** | Gabungan Perkumpulan Petani Pemakai Air (GP3A) | Water User Association Federation |
| **WUR** | Hak Guna Air | Water Use Right |


Makassar City
Kabupaten Maros
Kabupaten Gowa
Kabupaten Takalar
Kabupaten Gowa
Kabupaten Takalar
Kabupaten Gowa
Rubber Dam
Jongaya Control Gate
Flushing Gate
Maccini Sombala PDAM Intake
Malengkeri 1 & 2 PDAM Intake
Pandang Pandang PDAM Intake
Drainage Sluice Gate
River Dike and Revetment
Somba Opu Water Treatment Plant
Bili Bili Irrigation Area
2,360 ha
Raw Water Transmission Main
Bili Bili Dam
Bili Bili Reservoir
Long Storage Intake
Groundsill
Sungguminasa
PDAM Intake
Ratulangi PDAM Intake
Kampili Irrigation Area
10,545 ha
Kampili Irrigation Weir
Takalar Sugar Factory
Bissua Irrigation Area
10,785 ha
Bili Bili Irrigation Weir
Bissua Irrigation Weir
Bili Bili Dam & Reservoir
Sand Pocket No. 2
Intake of Village Irrigation
Paddy Field in Kaciping
Sabo Dam No. 8
SP 1
SP 2
SP 3
SP 4
SP 5
SB 4
SB 6
SB 8
Legend
River
River Basin Boundary
Kabupaten/Kota Boundary
Kecamatan Boundary
Intake of Village Irrigation
Area of Village Irrigation
SP 1 (Sand Pocket No. 1)
SB 6 (Sabo Dam No. 6)
0
5
10
kilometers
STUDY AREA
Present Water Use and River Infrastructure in the Jeneberang River Basin

# *Supporting Report H*

# *LEGAL FRAMEWORK*

**Supporting Report H**

**LEGAL FRAMEWORK**

## Table of Contents

## List of Tables



## List of Figures



## Appendix

# Supporting Report H

# LEGAL FRAMEWORK

This chapter briefly reviews the legal framework for the water sector and reports the progress revising and creating Government Regulations required to implement the new Water Law No. 7 of 2004. National and regional legislation proposed for the Jeneberang Jasa Tirta Corporation (to be known as PJT Jeneberang) is listed, sequenced and scheduled.

## H1 Existing Legislation

Four main areas of legislation govern water resources management (WRM) in Indonesia: (a) that relating to control of water resources (see H1.1), (b) that dealing with regional administration (see H1.2), (c) that dealing with WRM funding and taxation (see H1.3) and (d) that dealing with the public corporation (see H1.4). This section summarizes the main central government legislation in the four areas. Provincial and local government legislation is referred to in subsequent text where relevant, e.g. local enabling legislation for Kabupaten Dinas PSDA. Finally, legislation concerning the two PJT corporations is summarized in H1.5. Legal issues are outlined in H1.6. A partial representation of the principal legislation in the water sector is given in Figure H1.1.

### H1.1 Control of Water Resources

(1) Presidential Decree Number 64/1972 on the Authority and Management of Geothermal Steam, Ground Water and Hot Spring Water

By this decree, the Ministry of Mining is given administrative responsibility for ground water, at the ministry's request.

(2) Law No. 11 of 1974 regarding Water Resources

This historically important law governed the management, development and conservation of water resources in Indonesia for 30 years. Specific provisions included:

(i) Water and water resources including the natural riches contained therein, as defined in this Law, shall be controlled by the State. (Article 3 Clause (1));
(ii) The powers of the Government as specified in Article 3 of this Law, may be delegated to its agencies at the central or regional level or to specific corporate bodies in accordance with conditions and procedures as specified by Government Regulations (Article 4);
(iii) Communities directly benefiting from existing river infrastructures….may be required to share the related management costs (Article 14 Clause (2));

(iv) Corporations, associations and individuals directly benefiting from existing river infrastructures shall share the related costs in the form of contribution payable to the Government (Article 14 Clause (3)).

Weaknesses of this law included: reliance on central government control using deconcentration and co-administration principles; the omission of water rights regulation; and inconsistency with *Otonomi Daerah* legislation (see H1.2 below). These are corrected in the new water law recently approved by DPR (see para (3) immediately below).

(3) Law No. 7 of 2004 on Water Resources

This law was finally approved by DPR on 19 February 2004 after some three years consideration by GOI, and was signed by the President on 18 March 2004. The main additions or amendments to the earlier Law 11/1974 cater for new (or enhanced) paradigms such as regional autonomy, decentralization and state revenue sharing, an intergovernmental coordination framework headed by a National Water Resources Council, stakeholder participation in water resource policy-making, private sector involvement in water resource development and management, and empowerment of beneficiaries (especially farmers). Improvements are required in several key subsectors such as water quality management. Some important stipulations are:

(i) Control of water resources shall be carried out by the Government and/or Regional Government while recognizing the right possessed by local traditional communities and similar right, as long such rights are not conflicted with the national interests and the laws and regulations (Art. 6, Clause 2)
(ii) No license is needed for water utilized for private or irrigation needs (Art. 8, Clause 1).
(iii) Surface and ground water resource management shall be based on basins, with integration between surface and ground water (Arts. 11 & 12).
(iv) Statement of WRM responsibilities of central, provincial, district and village government for river basins within and across their boundaries (Arts. 14-17).
(v) As (iv) but applying to irrigation systems (Art. 41).
(vi) Financing WRM activities and sources of finance (Arts. 77-80).
(vii) Cross-sectoral and cross-regional coordination of WRM to be done by water resources councils at national, provincial, district and river basin levels (Arts. 85-87).
(viii) Criminal penalties up to Rp 1.5 billion and 9 years imprisonment are specified for infringements of this law (Arts. 94-96).

DGWR officials in the Ministry of Public Works (MPW)[1] state that 12 new or revised Government Regulations (which together encompass the 35 GRs stipulated in the law), including two for the revision of the two PJT corporations, will be needed to implement the new

[1] In this report, MPW is used for all present or future references, and MSRI (or Kimpraswil) for references earlier than October 2004.

law, for which four initial drafts and four final drafts are apparently complete[2]. (See section H2 below for further information)

Other water sector legislation, including that indicated below, will need amending to implement the policy reforms in the new water law and arising from the *otonomi daerah* legislation.

(4) Government Regulation No 22 of 1982 on Regulation of Water Management

This government regulation sets out the principles of water resource management, many of which still apply. Relevant provisions include:

(i) Water resource development and management is to be based on the river basin (Article 3);
(ii) The authority emerging from the State control referred to in Article 3 Clause (2) of Law No. 11/1974 on water and / or water resources available in a river basin or parts of a river basin in one Region, in the framework of constructing duty has been transferred to the Regional Administration, except as otherwise provided in a Government Regulation. (Article 5 Clause (1));
(iii) The authority referred to in Article 5 Clause (1) [on the control of water and water resources] on a river basin available in more than one Province, is still with the Minister (Article 5 Clause (3);
(iv) A license is required for the extraction of surface or ground water for all purposes other than basic daily living needs (Article 19);
(v) Every payment for using water and water resources does not represent the price of water or water resources, but is compensation for the services of its management and development, in order to ensure continuous availability, and is not aimed at making profit (General Elucidation No. 3).

A replacement regulation has been drafted under WATSAL.

(5) Government Regulation No. 35 of 1991 on Rivers

This government regulation on rivers stipulates how they are to be managed. In particular, it confirms that

(i) The Minister is given the responsibility and authority for the planning and development of rivers which is based on the river basin unit (agreeing with Government Regulation No. 22 of 1982),
(ii) Responsibility and authority for development can be delegated to either the regional authority and state-owned corporations (for public welfare and safety) or to a legal body, social or private body (for profit), established for the purpose.

[2] GR drafts are estimated by MPW to be complete for: Irrigation (final); Rivers (final); Water Resources Management (final); Financial Management of Water Resources (final); WRM corporatization [not the generic corporation GR]; Revision of PJT I GR; Revision of PJT II GR; Ground Water. GR on Water Quality Management is being prepared. GRs still to be drafted are: Swamps; Water Use Rights; Drinking Water. The GR on Reservoirs and Dams will now be incorporated in the GR on Rivers.

(iii) The cost of operation and maintenance, and the construction of river infrastructure for the public welfare and safety shall be borne by Government or a State-owned corporation.

An important omission from this regulation is a system of river classification according to size or other parameter. This omission is only slightly remedied in the following Ministerial Regulation. An amendment has been drafted.

(6) Ministerial Regulation No. 63/PRT/1993 on River Boundaries

This regulation stipulates the river corridor border line and the utilization area of a river including lake and reservoir. Relevant features include:

(i) The purpose of a river border line is to protect, utilize and control resources found in rivers, dams and reservoirs.
(ii) The border line of a river is stipulated under various circumstances, such as: with an embankment outside an urban area – at least 5 meters beyond the embankment; with an embankment inside an urban area – at least 3 meters beyond the embankment; without an embankment outside an urban area – at least 100 meters from a large river (flowing area of 500 $km^2$ or more), and at least 50 meters from a small river (flowing area of less than 500 $km^2$).
(iii) The public may use or occupy the land within the border line for certain specified activities as long as permission is obtained from the relevant authority. Extraction of earth, sand and stones is to follow Ministerial Decree No. 458/KPTS/1986.

(7) Instruction of the President No. 3/1999 regarding Irrigation Management Policy Reform

This instruction sets out the principles of irrigation policy reform, which are:

(i) Delegation of irrigation management decisions to the farmer,
(ii) Legal empowerment of P3A (WUA) as democratically established business unit,
(iii) Step-by-step handing over irrigation management to P3As under principle of "one irrigation system, one management unit",
(iv) Irrigation systems not handed over will be managed and financed jointly by P3A and Government under a "joint management method",
(v) Income for funding the operation, maintenance, rehabilitation and development of irrigation infrastructures will be obtained from the Irrigation Services Fee (ISF), of which the collection, management and application shall be decided by the P3A.

Government will monitor, evaluate (technically, financially) the P3A and provide technical and financial assistance as necessary and required by P3A, considering the strategic importance of irrigation. An amendment will be required under the new water law.

(8) Ministerial Decree No. 1451K/10/MEM/2000 from Ministry of Energy & Natural Resources on Ground Water

This decree provides technical guidance on the arrangement of government tasks in the ground water sector and confirms the authority of MENR in controlling sources of ground water. This Study is recommending that management of ground water and surface water resources should be integrated under MPW. (See also section I10 in Supporting Report I)

(9) Government Regulation No. 77/2001 on Irrigation

This regulation stipulates the transfer of authority for irrigation management from Local Government to water user associations as legal entities, using the principle of "one irrigation system, one management". It also specifies: the regulation of irrigation water use by defining rights of users and conditions for water supply and distribution; the development of irrigation systems; and the O&M, rehabilitation, funding and sustainability of irrigation systems. However, this GR will be replaced under the new water law. A new GR has been drafted by Kimpraswil.

(10) Ministerial Decrees from Kimpraswil (No. 529/KPTS/M/2001) and the Minister of Home Affairs (No. 50/2001)

These decrees set forth guidelines on (1) the transfer of authority for the management of irrigation to water user associations, and (2) the empowerment of water user associations, respectively.

Item (1) deals primarily with authority, rights and roles, and funding for water user associations (P3As), groups of P3As (GP3As) and scheme level groups of P3As (IP3As). Item (2) concerns organization and structure, administrative procedure e.g. for establishment, authority and funding.

Kimpraswil also produced sets of "practical guidelines" and operating instructions for P3As and higher level groups. All the above will be amended as (9) above.

(11) Government Regulation No. 82 of 2001 regarding management of water quality and control of water pollution.

Section 5 defines general responsibilities of Central, Provincial and Kabupaten / Kota Governments in water quality management (WQM). Section 8 divides water quality into four classes and specifies as many as 38 parameters for each class[3]. Sections 18 to 23 define authority and general responsibilities for water pollution control. Chapter VIII stipulates penalties very briefly but relies on local government and administrators to set values. The need for wastewater discharge to water bodies to be licensed, the conditions for such licenses and the

[3] At the reported rate of Rp.200,000 per parameter, it would cost Rp.7.6 million to classify one river. It is considered that less than half this number of parameters would be sufficient.

system of charging is referred to only indirectly. This seems a major weakness of this regulation. A new GR is being drafted.

(12) Presidential Decree No. 9 of 1999 on the Coordination Team for River Utilization and Sustainable Watershed Management

(13) Presidential Decree No. 123 of 2001 on Coordination Team for Water Resource Management

Now the new Water Law No. 7 of 2004 has been enacted, the "Tim Koordinasi" should be upgraded to a National Water Resources Council, along with equivalent upgrades of provincial PTPAs and river basin PPTPAs at an early date.

## H1.2 Regional Administration

(1) Law No. 22 of 1999 on Regional Administration

This law governs regional administration and has replaced Law No. 5 of 1974. Relevant provisions include:

(i) Regional Authority covers the authority in all areas of government, *except* authority in the field of foreign policy, defense and security, judiciary, monetary and fiscal matters, religious matters, as well as authority in other fields (Article 7 Clause (1));
(ii) Authority in other fields, as referred to in Clause (1) above, covers the policy on national planning and national development control "macro-wise", financial proportion fund, state administrative system and state economic institute, the building and empowerment of human resources, natural resources utilization as well as strategic high technology, conservation, and national standardization (Article 7 Clause (3)).
(iii) The Authority of the Province as Autonomous Region shall cover the authority in the field of administration which crosses Regency [Kabupaten] and Kota boundaries, and the authority in other specified fields of administration (Article 9 Clause (1).

However, DPR[4] in September 2004 decisively approved the revision of this Law, now Law No. 32 of 2004 signed by the outgoing President, to include the following changes as reported in various media:

(iv) Direct election of heads of regional government agencies (provinces, kabupaten and kota);
(v) Central Government can dismiss such officials in case of corruption or other acts deemed to be a threat to national security;
(vi) A number of other changes, as yet unspecified, believed to limit the powers of kabupaten and kota. In particular, regional leaders will not be allowed to issue regulations that contradict Central Government policy.

[4] House of Representatives.

(2) Law No. 25 of 1999 on Financial Proportion between Central and Regional Governments

This law governs the financial proportion and its management between central government and the regional administration. Specific relevant provisions include:

(i) The implementation of Central Government tasks by provincial Government in the framework of *deconcentration*[5] and *assistance*[6] is funded by national budget. (Article 2 Clauses (2) and (3));
(ii) Sources of Regional revenue in the implementation of *decentralization*[7] shall be: (a) Regional Original Revenue; (b) Proportional Fund; (c) Regional Loan; (d) Miscellaneous Legal Receipts (Article 3);
(iii) The allocation of state receipts to the regions is specified for various sectors in Articles 6 to 10.

However, DPR, also in September 2004, passed a new Intergovernmental Fiscal Balance Law, Law No. 33 of 2004, to replace Law No. 25 of 1999. Key points of the revised law include:

(iv) Some increase in the amount of property and property transfer taxes paid from Central Government (CG) to provinces and local administrations;
(v) A small increase in oil and gas revenues paid from CG to producing provinces and local administrations (some oil and gas producing provinces have complained of inadequate increases);
(vi) Provinces may issue bonds after MOF and DPRD[8] approval, but CG will not guarantee these.

(3) Government Regulation No. 25 of 2000 on Autonomy and Decentralization

This government regulation, based on Law No. 22/1999, is intended to define central government authority and regional authority as autonomous region, and thereby the residual authority of kabupaten and municipalities. However, for this regulation to be effective, additional legislation (e.g. government and provincial regulations and guidelines) is required, as well as extensive training and development for those in local government. Relevant provisions include:

(i) Provincial Authority as the autonomous region shall cover the authority in the field of government administration which crosses or covers two or more kabupaten / municipalities….(Article 3 Clause (1));
(ii) Besides the authority referred to in Article 3 Clause (1) if minimal services should be performed by a kabupaten / municipality, the province may conduct the authority which is not and has not been performed by the kabupaten / municipality. (Article 3 Clause (3));

[5] The delegation of authority from central government to the provincial governor as representative of the government.
[6] Specific tasks assigned by government to the autonomous region with required finance.
[7] The delegation of authority by government to the autonomous region
[8] Regional House of Representatives

(iii) If the province cannot perform the authority referred to in Article 3 Clause (3), the province shall delegate this authority to the Government (Article 4, Paragraph (i);

(iv) Authority of kabupaten / municipality in a certain field and certain part of obligatory authority may be performed by the Province according to the agreement between the kabupaten / municipality and the Province (Article 3 Clause (4));

(v) According to Article 3 Clause (5) Para 14, the responsibility of provincial public works is specified as [partial extract for water sector]:

- Preparation of support/assistance for inter-kabupaten/municipality cooperation for the development of regional infrastructure and facilities, consisting of water resources, weir/dam…
- Preparation of support/assistance for management of water resources, implementation of O&M of trans-kabupaten/municipality irrigation system and drainage, auxiliary structures from the intake structure to the model canal along 50 meter from the headworks.
- Permit for alteration and or removal of trans-kabupaten/municipality public works structures, canal system, infrastructures and facilities.
- Construction and rehabilitation of trans-kabupaten/municipality primary irrigation system and related auxiliary structures.
- Preparation of irrigation water supply.

It is assumed that these provincial tasks apply to all irrigation schemes (technical, semi-technical and simple).

Later sections comment on the current and future effect of this legislation at national, provincial, river basin and kabupaten / municipality levels of government.

The principal *otonomi daerah* changes can be expressed as follows:

| | | | |
|---|---|---|---|
| - | Water function | : | Social → Socioeconomic |
| - | Government function | : | Provider → Enabler |
| - | Administration | : | Central → Provincial → Kabupaten Govt. |
| - | Unit of Autonomy | : | Kabupaten & Kota: answerable to Kabupaten/Kota DPRD |
| - | Structure | : | Hierarchy<br>→ Horizontal and independent structure |
| - | Development approach | : | Bottom up and top down |
| - | Service | : | Bureaucratic, normative<br>→ professional, responsive, neutral |
| - | Public participation | : | Limited, submissive<br>→ High, critical, Vocal, proactive. |

With the overdue revision of Law No. 22 of 1999 reported above, this GR will also have to be revised. It is hoped that this revision will correct some of the deficiencies of the present GR.

(4) Government Regulation No. 8 of 2003 on the Organizational Structure of Regional Government

This GR is an update of GR No. 84/2000 which was issued as a general guideline to implement Law No. 22/1999. While there are some improvements in GR No. 8/2003, a significant weakness remains, namely a uniform grading structure for all regional government positions regardless of the size, scope and complexity of the work of particular dinas. Thus, officials in a very large kabupaten or kota would be paid the same as officials at the same level in very small kabupaten.

## H1.3 WRM Funding and Taxation

(1) Government Regulation No 6 of 1981 on Fee for Water Resources Infrastructure

This government regulation stipulates the contribution for funding water resources infrastructure operation and maintenance. Specific relevant provisions include:

The financial contribution to the operation and maintenance cost of water resources infrastructure covers: (a) funds collected as a payment from legal corporate bodies, social institutions and individuals who have obtained the benefit through the availability of water, from water sources, and through resources infrastructure managed by the Corporation….; and (b) funds collected as a payment for effects, i.e. water pollution and other pollution affecting water resources, originating from the company concerned (Article 2).

This provision does not apply to farmers, who have already been levied by the Land and Building Tax (PBB). (He/she also pays (or should pay) the Irrigation Service Charge (IPAIR).) An amendment has been drafted under the new water law according to the WATSAL program.

(2) Law No. 18 of 1997 on Regional Taxes and Levies *(retribusi)*

The stipulations of this law include that Kabupaten (District) and Kota (City) taxes shall include tax on ground water and surface water utilization but at a rate no higher than 20%. The tax tariff shall be on the proceeds from the utilization of the water obtained based on, among other things, the type, volume, quality and location of the water source. More details are provided in Government Regulation No. 19 of 1997, of exemptions in particular.

(3) Law No. 34 of 2000 on Amendment to Law No. 18 of 1997

This law introduced some amendments to Law No. 18 of 1997 to make it consistent with the provisions of Law No. 22 of 1999 and, especially, Law No. 25 of 1999 on fiscal balance between central and regional government. Because of the changes to these two laws noted above, a further amendment to this law will presumably be required.

(4) Government Regulation No. 65 of 2001 on Regional Taxation

This GR stipulates that, among other things, the tax rate on the exploitation and utilization of ground water and surface water shall be set at 20% and 10% respectively, following Law No. 34/2000.

(5) Presidential Decree No. 42 of 2002 on Implementation of Budget Guidelines for Central Government Resources and Expenditure

This decree stipulates that the Ministry of Finance as State General Treasurer shall provide funds and allocation procedures to finance the State Expenditures Budget for implementation of routine revenue and expenditure included in the Activities Implementation Plan (DIK), and implementation of development expenditure included in the Project Implementation Plan (DIP). It also set out balancing budget implementation guidelines which comprise the Production Sharing Fund, General Allocation Fund (DAU) and Special Allocation Fund (DAK).

(6) Law No. 17 of 2003 on State Finance

This law (Article 24) makes provision for the financing of state-owned and regional enterprise as follows:

(i) Government may provide a loan/grant/capital fund to and receive a loan/grant from the state-owned or regional enterprise.
(ii) The provision in (i) shall first be provided in the APBN/APBD.
(iii) The Minister of Finance shall guide and supervise state-owned enterprises.
(iv) Central Government may sell or arrange for the privatization of state-owned enterprises after approval from DPR.

(7) Presidential Decree No. 80 of 2003 on Guideline for Implementation of Government Procurement of Goods and Services

(8) Law No. 1 of 2004 on the National Treasury

This law deals with the transfer and sale of state assets. Government agencies will now find it more difficult than before to raise money through asset sales. Transfer of assets to River Basin Public Corporations (RBPCs) will be considered only after transfers to (i) other central government departments and (ii) provincial or kabupaten governments.

## H1.4 The Public Corporation

(1) Government Regulation No. 13 of 1998 regarding Public Corporation (Perum)

This regulation, which appears to be based on Law No. 9 of 1969, deals with the aims, objectives and business characteristics of the perusahaan umum (perum). The need to combine service for public benefit with profitability is emphasized.

(2) Law No. 19 of 2003 on State-owned Enterprises

This law is an update of all previous legislation on SOEs. Changes to previous legislation include:

(i) SOEs now only comprise Perseros (Perusahaan Perseroan) with limited liability, and Perums (Perusahaan Umum);
(ii) All SOEs are expected to make profits as well as provide public benefits;
(iii) Appropriation of Perum's net profit is determined by the Minister.

There is neither mention of any payment to the National Development Fund (NDF; currently at 55% of "profit") nor a definition of net profit in this law. The current problem of NDF payments leaving too little to meet essential O&M cost could therefore continue under Law No. 19. Furthermore, there is no stated commitment by Government[9] to reimburse Perums for work done for the general public good for which they cannot charge.

It is understood that MSOE is preparing a revised GR in which it is hoped that the above points will be addressed.

(3) Draft Government Regulation on Public Corporation for Water Resources Management

This draft 'generic' GR is intended to be used as the legal basis for establishing further river basin public corporations (RBPC; e.g. for Jeneberang RB) as soon as the enabling GR becomes effective. An additional presidential decree or GR will be needed to establish each individual RBPC.

(4) Draft Government Regulation on the Establishment of a Public Corporation for the River Basins of Bengawan Solo, Jratunseluna, and Serayu Bogowonto

A draft GR for the creation of a new PJT for the water resource management of the three named river basins in Central and East Java is being approved by MPW before passing to MSOE and the State Secretary for authorization. The first 12 articles are specific to the river basins concerned while the remaining 66 articles are understood to be generic to all river basin public corporations under existing corporation law.

The GR is to be compatible with the provisions of the new water law and as far as possible with the relevant GRs now in draft which will implement the new law. It is understood that this GR model will be not be affected by the GR referred to in para (3) above when the latter becomes effective, possibly in 2005 (see section H2 below)

[9] Under the Government Obligation Principle in the water sector.

## H1.5 The PJT Corporations

The two Perum Jasa Tirta Corporations were established with three main objectives in mind: 1) to improve the quality and efficiency of river basin O&M (rivers and river infrastructure) after construction of major basin infrastructure (usually dams), 2) to relieve the financial burden on central and local governments by recovering direct O&M costs initially and, in time, investment costs as well, and 3) to respond to the community's demand for better service and more involvement in river basin management. The overall theme was, and still is, "One basin, one integrated plan, one integrated management." The objectives have been partially achieved to date.

(1) PJT I

(2) Following the example of PJT II (then POJ[10]) in the Citarum river basin, GOI issued Presidential Decree No. 58/1990 and Government Regulation No. 5/1990 to establish the Jasa Tirta Public Corporation in the Brantas river basin as a Perum and BUMN. Also issued was MPW Decree No. 56/PRT/1991 on General Policies for the Management of Jasa Tirta Public Corporation.

The corporation's main objective was stated to be operation and maintenance of water resources infrastructure in the Brantas Basin, including the many completed dams and other structures for controlling downstream flooding. In 1999, by Government Regulation No. 93/1999, the PJT Corporation became PJT I, being the first PJT although not the first RBPC. Eleven other items of ministerial and regional legislation currently regulate PJT I's activities in the Brantas River basin.

By Presidential Decree No. 129/2000, management of the Bengawan Solo River basin was added to PJT I as a new Directorate, that is an extension to PJT I's working area. A further 24 items of legislation (from a government regulation and five ministerial decrees down to PJT I directors' decrees) were prepared and enacted to permit PJT I Bengewan Solo to become fully operational in 2002.

(3) PJT II

(4) PJT II, the first river basin management corporation in Indonesia, was established in 1970[11] as a wholly State-owned corporation (BUMN) known as Perum Otorita Jatiluhur (POJ). Its remit was to operate and manage selected rivers, the associated river infrastructure and all irrigation facilities in the Citarum river basin, the most developed in the country and which covers two provinces – West Java and Jakarta.

In 1999, POJ became Perum Jasa Tirta II by Government Regulation No. 94/1999. This was in order to rationalize river basin management corporations (RBMCs) in Indonesia before

[10] Perum Otorita Jatiluhur
[11] By Government Regulation No. 20/1970

extending the RBMC concept into other river basins. Unfortunately, the opportunity was not taken when this GR was drafted to remove the provision for irrigation management by PJT II.

Under the new Water Law No. 7/2004, amendments to both GR 77/2001 (concerning government responsibility for management of primary and secondary irrigation canals) and to PJT legislation will be required. Irrigation should be removed from PJT II's responsibility, at the latest, during such revisions and be handed over to Dinas PSDA and Balai PSDA, and P3As and GP3As, according to the current regulations.

### H1.6 Roles and Responsibilities of Public Corporation

Existing legislation sets forth a wide range of roles and responsibilities of public corporation. Some selected main items are summarized in Appendix H attached to this Supporting Report.

### H1.7 Legal Issues

An important issue concerns the recent *otonomi daerah* law, Law No. 22/1999, and probably also of the recently approved revision, Law No. 32 of 2004. The major effect of this legislation on provinces is that they become *autonomous regions* as do kabupaten and kota, but are also *administrative regions* of central government. This means that kabupaten and kota are, in law, no longer subordinate to the provinces. Therefore, all official command and reporting links between central government and provincial agencies, on the one hand, and kabupaten and kota on the other hand, have been severed, except between provincial governors and heads of kabupaten and kota. For example, the provincial Dinas PSDA (water resources service) now has no administrative responsibility for the kabupaten / kota Dinas PSDA (or Sub-dinas Pengairan), and has little information on their operations and staffing.

However, certain authorities, mainly in policy and strategic matters, are retained by central and provincial government; also kabupaten and kota can return authority to provinces and central government under certain circumstances. Unfortunately, under current legislation particularly GR No. 25/2000, many of these retained authorities are not adequately specified. More national and provincial legislation will be needed for this purpose, whether or not the present scheme of *Otonomi Daerah* is to be modified.

Nonetheless, the main *Otonomi Daerah* laws have been passed, many kabupaten and municipalities are already exercising the powers they assume are legally delegated to them[12], and if the process of decentralization (which should *not* mean abandoning all central government control) is not completed in an orderly fashion the present confusion will continue.

The above represents the broad background to the revision to Law No. 22 of 1999, Law No. 32 of 2004.

[12] A good example of this exercise of kabupaten / kota power is the massive issue of timber concession licenses to logging companies over the past two years. The practice has been deemed illegal by the Ministry of Forestry, which has been unable to curb it.

At the time of preparing this report, the full text of the new laws was not available. However, from media reports and comment, it appears that the new law does give back, to Central Government and to provincial governments, some of the wholesale authority previously enjoyed, and sometimes abused, by kabupaten / kota. For example, it seems that central government can now:

- Override decisions of elected regional leaders on what is in the public interest;
- Control provincial budgets;
- Control staff establishments (through State Minister for Administrative Reform);

And provincial governments (usually the Governor) can:

- Resolve disputes between kabupaten / kota or take over disputed functions;
- Control the budgets of kabupaten/ kota;
- Appoint kabupaten Secretaries from shortlists;
- Control kabupaten / kota organization structures.

Unfortunately, some important features are less than satisfactory, for example:

- Lack of definition of the roles of the different levels of government (but one of the 48 necessary GRs may correct this);
- No guarantee of competition and transparency in appointing staff;
- Few sanctions for lack of, or illegal, action. For example, some 30 regional regulations are required but no sanctions are available where these are not passed;
- Apparently unnecessary duplication of many national regulations for regional processes. Special provisions have apparently been created for regional elections, financial management, personnel management, treasury and organization.

It would appear from this assessment that the flawed Law No. 22 of 1999 has been replaced by another flawed law[13].

[13] Jakarta Post for Saturday, 30 October 2004

## H2 Revision of Regulations Mainly Related to New Water Law No. 7 of 2004

Under the new Water Law No. 7 of 2004, some 35 Central Government Regulations are called for to expand, clarify and help to implement the new law. Of these, at least 12 need to be drafted soonest in order to either revise existing regulations or to create new ones.

The status of the 12 revised or new Government Regulations required is shown in the table below, after detailed discussions with the responsible heads of sub-directorates under DGWR.

**Revised or New Government Regulations Required under Water Law No. 7 / 2004[1)]**

| | Current Regulation | Revised Regulation | Current status[2)] |
|---|---|---|---|
| 1 | GR 77/2001 on Irrigation | GR on Irrigation (No. 78) | Final MPW draft, now with Sec. Gen. Awaiting inter-department scrutiny. Aim to issue before end 2004 |
| 2 | GR 35/1991 on Rivers | GR on Rivers | Final MPW draft now with Sec. Gen. Awaiting inter-department scrutiny. Aim to issue before end 2004 |
| 3 | GR 82/2001 on Water Quality Management | GR on Water Quality Management | MPW draft being prepared |
| 4 | No GR. Earlier regulation was by Presidential Decree No. 64/1972 and Ministerial Decree[3)] | GR on Ground Water | 1st draft available from Ministry of Energy & Mineral Resources |
| 5 | GR 22/1982 on Water Resources Management | Replacement GR on Water Resources Management | Final MPW draft completion scheduled before end 2004 |
| 6 | GR 6/1981 on Fee for Water Resources Infrastructure | GR on Financial Management of Water Resources | Final MPW draft completed according to WATSAL program |
| 7 | None | GR on Drinking Water | Draft not yet prepared |
| 8 | None | GR on Water Use Rights | Sanyu Consultants Study on-going, but restricted to irrigation. There is need to address Water Use Rights for *all* users. Thus GR draft not yet prepared |
| 9 | None | GR on Reservoirs and Dams | This new GR now to be included in the revised GR on Rivers |
| 10 | None | GR on Corporatization of Water Resources Management | MPW 'special' draft prepared. Awaiting internal scrutiny |
| 11 | GR 93/1999 on PJT I | GR on PJT I | MPW initial draft prepared |
| 12 | GR 94/1999 on PJT II | GR on PJT II | MPW initial draft prepared |
| 13 | GR 27/1991 | GR on Swamps | Draft not yet prepared. |

**Notes on table:** 1) Position at 14/10/04. 2) Current status is given rather than estimated issue date due to present inability to provide such estimates. 3) Ministry of Energy and Natural Resources (now Ministry of Energy & Mineral Resources) Decree No. 1451K/10/MEM/2000 on Ground Water.

MPW is responsible for the initial drafting of all the GRs except for Ground Water (by Ministry of Energy and Mineral Resources). It was agreed that at that stage (before the appointment of the new President), dates of issue and enactment could not be estimated because of several unknowns[14]. It is not clear why the GR on dams/reservoirs – an important sector in Indonesia -

[14] The Minister of Public Works was appointed on 24th October 2004. However, it is thought that up to one month will elapse before the Minister will wish to approve legislation based on previous policy decisions.

was suddenly included in the GR on Rivers after June 2004. In addition, the Study Team has not been able to discover whether irrigation has been removed (as it should be) from the responsibility of PJT II in the revision of GR No. 94/1999.

Apart from the above work, the final draft (prepared by Kimpraswil) of a Government Regulation exists to establish a new river basin corporation in Central Java, to be known as PJT III, and consistent with the MPW-approved Option II[15] (see Supporting Report I section I6.2 for more option details). This new corporation would be responsible for managing the Bengawan Solo, Jratunseluna and Serayu Bogowonto river basins. Its establishment would be closely linked with that of the Jeneberang River Basin Corporation (which can be designated PJT Jeneberang) because of the need to transfer the corporatized Bengawan Solo River basin from PJT I to PJT III at about the same time. Thus the two legal products for PJT Jeneberang and PJT III should be enacted as nearly simultaneously as possible[16]. According to DGWR's senior staff, the PJT III draft is currently being discussed by the Ministries of Public Works, Finance and State Owned Enterprises. Recent meetings with DGWR senior staff have confirmed that the PJT Jeneberang and PJT III legislation can be enacted under existing WR legislation and does not therefore depend on the enactment of any of the GRs in the above table. This means that PJT III legislation will not wait for the GR on WRM corporatization to be issued; it will be based on the current legal framework, where possible anticipating expected changes.

Because of the change of Government, in particular, MPW should be prepared to defend its choice of Option II against critical comment and questioning until the enactment of the PJT III GR and the PJT Jeneberang Presidential Decree.

It is understood from MSOE that this Ministry plans to amend GR No. 13/1998 on the Public Corporation to incorporate necessary amendments, more than a year after the issue of Law No. 19/2003 on State-owned Enterprises.

It is also understood that MPW wants the GR on WRM Corporatization to be enacted before the revised PJT I and PJT II GRs. This accounts for an expected delay in the PJT I and PJT II legislation enactment.

In addition, a Presidential Decree on Strategic River Basins has been drafted by Kimpraswil and is understood to include Jeneberang. In this event, all WRM expenses in the Jeneberang River basin that cannot be covered by revenue when PJT Jenenberang is established would, in principle, be paid by Central Government. The river basin management responsibilities and activities would be delegated by MPW to South Sulawesi Governor along with, in principle, the necessary funding.

[15] MPW's three proposed options (in a recent Kimpraswil Concept Paper) for the corporate management of seven priority river basins throughout Indonesia are: a) Option I (two regional PJTs: Eastern PJT managing Brantas, Bengawan Solo, Jratunseluna, Serayu Bogowonto and Jeneberang; and Western PJT managing Citarum and Way Sekampung-Way Seputih river basins; b) Option II (3 regional PJTs: PJT I managing Brantas and Jeneberang river basins; PJT II managing Citarum and Way Sekampung-Way Seputih river basins; PJT III managing Bengawan Solo, Jratunseluna and Serayu Bogowonto river basins; and c) Option III (one national PJT managing all seven river basins).

[16] This assumes that PJT Jeneberang is established as an extension to the working area of PJT I as proposed in Option II.

Finally, from discussions with DGWR officials the Study Team considers that there is, as yet, no clear plan to establish the necessary budget for completing the above legal processes and the associated public consultation and socialization.

## H3 Legislation Needed for the Establishment and Operation of the New Corporation

### H3.1 Legal Products

The Study Team has reviewed three studies which propose the national and regional legislation needed to establish the PJT Jeneberang. These were the PJT I Feasibility Study dated 2002, the University of Hasanuddin Feasibility Study dated 2003, and the institutional and legal output of a Concept Paper[17] from Kimpraswil dated 2004. The legal products from the establishment of PJT Bengawan Solo as an extension to the working area of PJT I were examined for relevance. Discussions on this topic have been held with legal and WRM staff from PJT I, South Sulawesi Dinas PSDA and Kimpraswil. The chronological order was initially estimated by PJT I from their experience in establishing the Bengawan Solo Operations Directorate (although the actual chronology for establishing this directorate was considerably different).

This was confirmed after some modification by discussions with the Legal & Institutions Bureau in the South Sulawesi Governor's Office, Makassar, and finally, with DGWR officials in Jakarta. An important topic of these talks was the regional activities needed before processing the already drafted Presidential Decree.

The outcome of this work, based on the MPW-approved Option II (PJT Jeneberang as an extension to PJT I's working area – see section H2 above), is the list of national and regional legal products in the table below. These legal products (which exclude PJT I Directors' Decrees) are based on the existing National Laws and Government Regulations listed in Table H3.1. (Some attention will presumably be given to the new Law No. 32/2004 (regional autonomy) and new Law No. 33/2004 (fiscal balance between central and regional governments)). The table below also indicates, in column 3, the estimated sequence for formulating the various legal products (see the flow chart in Figure H3.1 depicting the steps required until stipulation of the Presidential Decree).

[17] "Corporation Development for Management of River Basins", DGWR, Kimpraswil, 2004

**Legal Products Required to Establish and Operate PJT Jeneberang as PJT I Extension[18]**

| No. | Legal Product | Chronological order[19] |
|---|---|---|
| | NATIONAL | |
| 1 | Presidential Decree on the extension of PJT I's working area to include the Jeneberang River basin ***[new]*** | 1 |
| 2 | Government Regulation on Investment of State Capital into the Capital of PJT I ***[new – needed to meet initial O&M costs in PJT Jeneberang]]*** | 2 |
| 3 | MPW Decree Delegating Authority to South Sulawesi Governor to issue permits for water use from beneficiaries in PJT Jeneberang's working area ***[new]*** | 2 |
| 4 | MPW Decree on the Authority of PJT I as an authorized corporation to collect and receive fees to finance O&M of regional infrastructure ***[existing]*** | 2 |
| 5 | Revision to Decree of State Minister for SOE on Appointment of PJT I Supervisory Board ***[existing – to add one SS member to the Supervisory Board]*** | 2 |
| 6 | MPW Decree on Basic Tariff for fee for financing O&M of water resources infrastructure and use of raw water for industry and PDAM within PJT I's work area ***[existing]*** | 2 |
| 7 | MPW Decree on Basic Tariff for fee for financing O&M of water resources infrastructure and use of raw water for PLN within PJT I's work area ***[existing]*** | 2 |
| | REGIONAL[20] | |
| 8 | Provincial Regulations of South Sulawesi on**:** | |
| 8.1 | Surface Water Extraction and Utilization ***[existing]*** | 2 |
| 8.2 | Land Use in River Administrative Area ***[existing]*** | 3 |
| 8.3 | River Protection concerning C-Class [sand] Mining in the River Administrative Area ***[existing]*** | 3 |
| 8.4 | Water Quality Management and Water Pollution Control ***[existing]*** | 3 |
| 9 | Decrees of South Sulawesi Governor on: | |
| 9.1 | Guidelines for Implementing Provincial Regulations (for areas in #9 above) ***[new]*** | 4 |
| 9.2 | Permit Procedure for Extraction and Utilization of Surface Water in PJT Jeneberang Working Area ***[new]*** | 4 |
| 9.3 | Permit Procedure for Land Use in River Administrative Area in JRB ***[new]*** | 4 |
| 9.4 | Procedure for River Protection concerning C-Class [sand] Mining in the River Administrative Area ***[existing]*** | 4 |
| 9.5 | Service Fee Payment and Collection for Water Resources Management in PJT Jeneberang Working Area ***[new]*** | 4 |
| 9.6 | Working Group for endorsing permit for extracting / utilizing surface water within the working area of PJT Jeneberang ***[new]*** | 4 |
| 9.7 | Revised membership of South Sulawesi PTPA to include PJT Jeneberang ***[existing]*** | 4 |
| 9.8 | Revised membership of SWS Jeneberang PPTPA to include PJT Jeneberang ***[existing]*** | 4 |
| 10 | Decree of Head of South Sulawesi Dinas PSDA on Technical Guidelines for Implementation of each Governor's Decree ***[new]*** | 4 |
| 11 | Decree of Head of South Sulawesi BAPEDALDA on Technical Guidance for Implementation of each Governor's Decree ***[new]*** | 4 |
| 12 | Joint Decree and Cooperation Agreement between PJT I and Relevant Bupati/Walikota in South Sulawesi Province [primarily Gowa] with the involvement of MPW ***[new]*** | 5 |

It should be noted that certain associated legislation, necessary for the proper management of the Jeneberang River basin, is also needed. This legislation would include such items as (i) Provincial Regulations on river water classification and quality standards (new), and waste

[18] Excluding PJT I Board of Directors' Decrees.
[19] Estimated by PJT I from its experience of establishing Bengawan Solo River basin as extension to PJT I working area. Partially modified by South Sulawesi Legal and Institutional Bureau, and later by officials from DGWR, Jakarta..
[20] It is understood that informal communication and discussions about MPW's Option II and PJT Jeneberang will soon take place between MPW and South Sulawesi Governor, DPRD and the concerned kabupaten / kota governments. This is planned before beginning the formulation of the Presidential Decree. The arrangement replaces the letters of approval from the Governor and DPRD previously thought necessary.

water quality standards (modification), (ii) a Governor Decree on the formation of Balai PSDA (modification to record involvement of PJT Jeneberang).

## H3.2 Tasks and Establishment Schedule for Option II Legislation

Table H3.2 represents the latest attempt to schedule the drafting, stakeholder consultation, approvals and enactment of the legislation needed to establish and operate PJT Jeneberang as an extension of PJT I. This suggested timetable is the result of further scrutiny and discussion by PJT I, several DGWR divisions and the Legal and Institutional Bureau in the Provincial Governor's Office, in order to arrive at a best overall estimate.

The Minister of Public Works has decided to formally adopt Option II as the model for corporatizing the seven priority river basins[21]; a letter to this effect has been dispatched from the Minister of Public Works to the Ministers of Finance and State Owned Enterprises in November 2004. The draft GR for PJT III is being discussed by the three above Ministries, after which it will pass to the State Secretary. The Presidential Decree for PJT Jeneberang is expected to be signed by the President on the same day as the GR for PJT III. Officials close to the process consider that the Presidential Decree can be signed by the end of March 2005.

Four months has been allowed in Table H3.2 for the remaining tasks in the formulation and enactment of the PJT Jeneberang Presidential Decree and the PJT III GR.

The procedures for Provincial Regulations and Governor Decrees are flow charted (by PJT I) in Figure H3.2 and Figure H3.3 respectively, and are estimated to require, on average, 150 days and 90 days respectively. During this time, the PR would be discussed internally, be publicly consulted, be evaluated by Provincial Legal Bureau and submitted to DPRD, and finally issued by the Governor and socialized. The Governor Decree follows a similar path without passing through DPRD. In Table H3.2, a conservative total of 18 months has been allowed for the four provincial regulations running in parallel, and after a delay of one month, a further conservative 18 months for the Governor Decrees and Dinas Decrees on technical guidelines, also running in parallel.

According to the resulting schedule (Figure H3.2), PJT Jeneberang cannot be established before 1 January 2006, and cannot begin operating before 1 January 2007. This is mainly because of the time needed (i) to enact provincial decrees (conservatively estimated at 1.5 years), (ii) to budget for the cost of preparing, consulting and agreeing all the legal products required, and (iii) to prepare PJT Jeneberang's staff, premises, O&M and financial resources for full short term O&M operation on 1 January 2007.

[21] See Supporting Report I, Section I5.1 and I5.2.

## H4 Capacity Development Plan

For better decision making the PJT Jeneberang management need to understand in some detail the legal and regulatory environment in which the corporate body is operating. This knowledge will contribute to a better understanding of national and, in particular, regional responsibilities and relationships. The management of the Jeneberang River basin will therefore benefit.

All the holders of structural positions in the PJT Jeneberang start-up organization, together with the lone member of the Human Resources Section, should therefore attend a series of lectures and discussions on:

- national laws, regulations, decrees;
- provincial regulations and decrees;
- kabupaten / kota regulations and decrees;
- PJT I Directors' Decrees

applying to the water and corporation sectors. Knowledge retention will be tested periodically. The Legal Adviser cannot participate as he / she is not appointed during the first two years of PJT Jeneberang's operation. The principles of legal drafting and the structure of legislation throughout Indonesia should also be covered.

Two one-week periods of instruction in Makassar are proposed from a suitably qualified PJT I trainer. Training would be scheduled for some convenient period during the second half of 2006. An important aspect will be access by the trainer to the legal products to be included in the training.

This program is detailed in Supporting Report N of Capacity Development.

# *Tables*

## Table H3.1 National Legislation Providing Legal Basis for Establishment and Operation of PJT I Jeneberang

| | National Legal Product[1] |
|---|---|
| 1 | Law No. 7 / 2004 on Water Resources Management |
| 2 | Law No. 22 / 1999 on Regional Autonomy |
| 3 | Law No. 25 / 1999 on Financial Proportion between Central and Regional Government |
| 4 | Law No. 17 / 2003 on State Finance |
| 5 | Law No. 1/ 2004 on National Budget and Treasury |
| 6 | Law No. 19/ 2003 on State-owned Enterprises |
| 7 | Government Regulation No. 22 / 1982 on Water Resource Management |
| 8 | Government Regulation No. 35 / 1991 on Rivers |
| 9 | Government Regulation No. 82 / 2001 on Water Quality Management and Water Pollution Control |
| 10 | Government Regulation No. 25 / 2000 on Regional Autonomy |
| 11 | Government Regulation No. 6 / 1981 on O&M Cost Recovery |
| 12 | Government Regulation No. 13 / 1998 on Public Corporation |
| 13 | Government Regulation No. 41 / 2003 on Delegation |
| 14 | Government Regulation No. 93 / 1999 PJT I Corporation |
| 15 | Government Regulation No. 94 / 1999 PJT II Corporation |

[1] GRs Nos. 22/1982, 35/1991, 82/2001, 6/1981, 93/1999, 94/1999 are being revised under the new Water Law No. 7/2004.

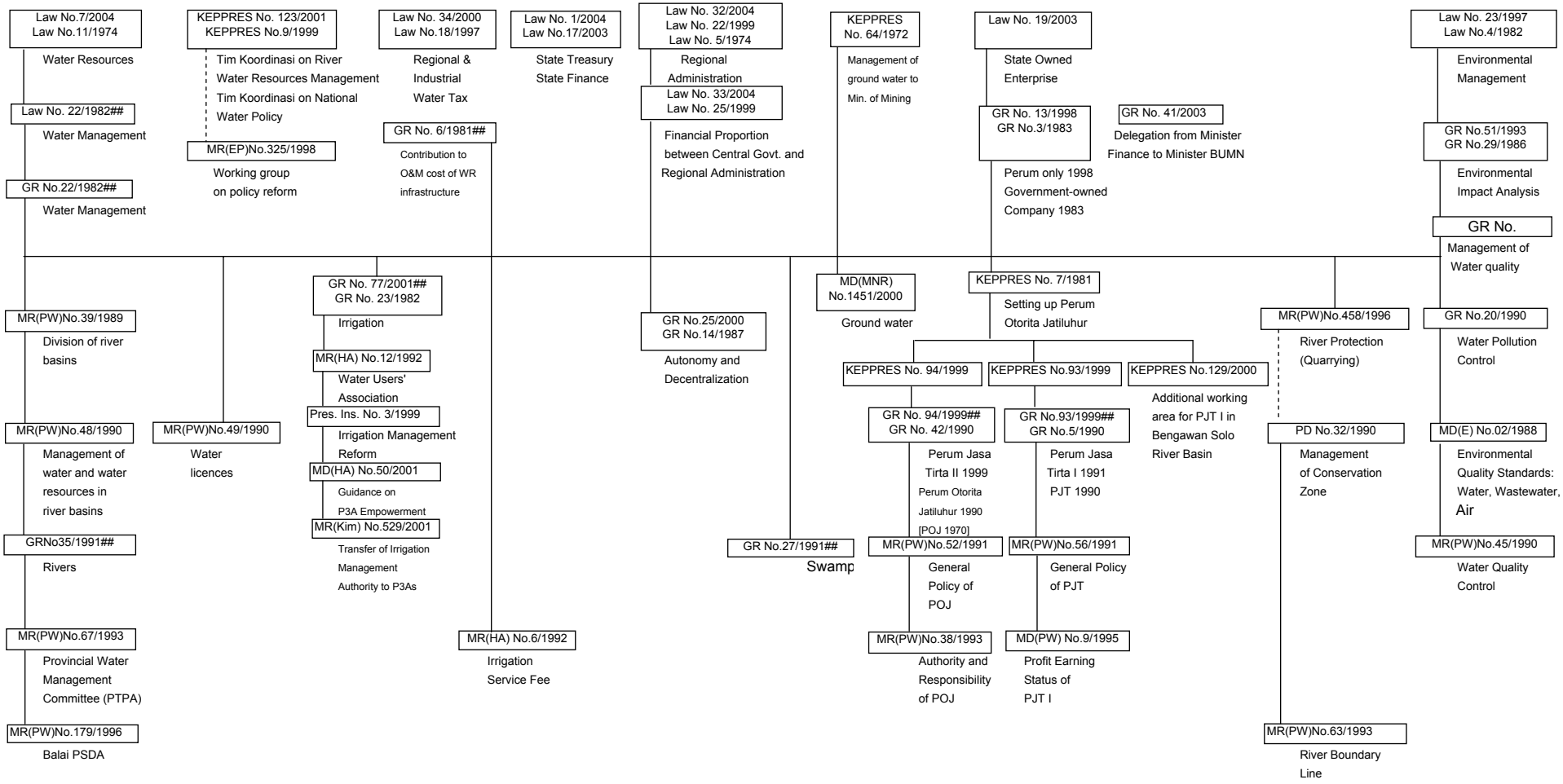
# Table H3.2 Jeneberang Public Corporation - Establishment Schedule for PJT Jeneberang[1)]
## (Updated Discussion Draft)

| Action[2)] | Action by | 2004 II | 2004 III | 2004 IV | 2005 I | 2005 II | 2005 III | 2005 IV | 2006 I | 2006 II | 2006 III | 2006 IV | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PJT I & III Initial Legislation** | | | | | | | | | | | | | |
| - PP for establishing new PJT III (for Bengawan Solo, Jratunseluna & Serayu-Bogowonto) | MPW | | | | | | | | | | | | Final draft with Minister for MPW |
| - Informal discussions with Governor & DPRD of South Sulawesi, concerned Kabupaten / Kota | MPW | | | | | | | | | | | | |
| - Keppres for inclusion of Jeneberang Basin as additional working area of PJT I | MPW | | | | | | | | | | | | |
| **Central Government Legislation (items other than above)** | | | | | | | | | | | | | First drafts prepared by PJT I |
| - Government Regulation | | | | | | | | | | | | | |
| (1) PP for investment of State capital into the capital of PJT I | MPW | | | | | | | | | | | | |
| - Ministerial Decrees | | | | | | | | | | | | | |
| (1) MPW Decree for authorizing PJT I to collect O&M & other fees in the Jeneberang working area | MPW | | | | | | | | | | | | |
| (2) MPW Decree for authorizing Sulsel Governor to issue various permits | MPW | | | | | | | | | | | | |
| (3) MPW Decrees on funding O&M: basic tariff for industry, PDAM and PLN | MPW | | | | | | | | | | | | Prepare in parallel with Provincial Decrees |
| (4) MSOE Decree for amending PJT I's Supervisory Board | MSOE | | | | | | | | | | | | |
| **Regional Government Legislation** | | | | | | | | | | | | | First drafts of regs and decrees prepared by PJT I |
| - Budgetary Arrangement | SSGov | | | | | | | | | | | | Budget for public consultation, etc. |
| - Four Provincial Regulations for authorizing Corporation to conduct RB management | SSGov | | | | | | | | | | | | A conservative estimate of 1.5 years |
| - Various Governor Decrees concerning licensing, fee collection and, generally, implementing Prov. | SSGov | | | | | | | | | | | | |
| - Varous Dinas PSDA/Bapedalda Decrees on technical guidelines | SSGov | | | | | | | | | | | | |
| - Various Agreements between PJT I and Kabupaten / Kota governments and other stakeholders | KabGov | | | | | | | | | | | | |
| **Preparation for Establishment of Corporation** | | | | | | | | | **Establish** | | | | |
| - Transfer of assets to Corporation | MPW | | | | | | | | | | | | |
| - Selling scrap assets ro raise funds for the Corporation | MPW | | | | | | | | | | | | |
| - Budgeting of fresh money fund needed for corporation establishment | MPW | | | | | | | | | | | | As budget for initial mobilization expenses |
| - Organizational setup including office setup and key personnel asignment | MPW | | | | | | | | | | | | |
| **Preparation for Start of O&M Operation** | | | | | | | | | | | | | **Start Operation 1/1/2007** |
| - Budgeting of fresh money fund for conducting O&M work | MPW | | | | | | | | | | | | |
| - Procurement of O&M operation resources | MPW | | | | | | | | | | | | |
| - Preparatory work for commencement of actual operation | MPW | | | | | | | | | | | | Office rules, manuals, staff training, socialization |

See Supporting Report N for detail

**Notes:** 1) This schedule is still tentative. However, dates for establishment (1/1/2006) and start of operations (1/1/2007) should be regarded as firm
2) These actions can be largely independent of the work on revising WRM-related GRs

# *Figures*



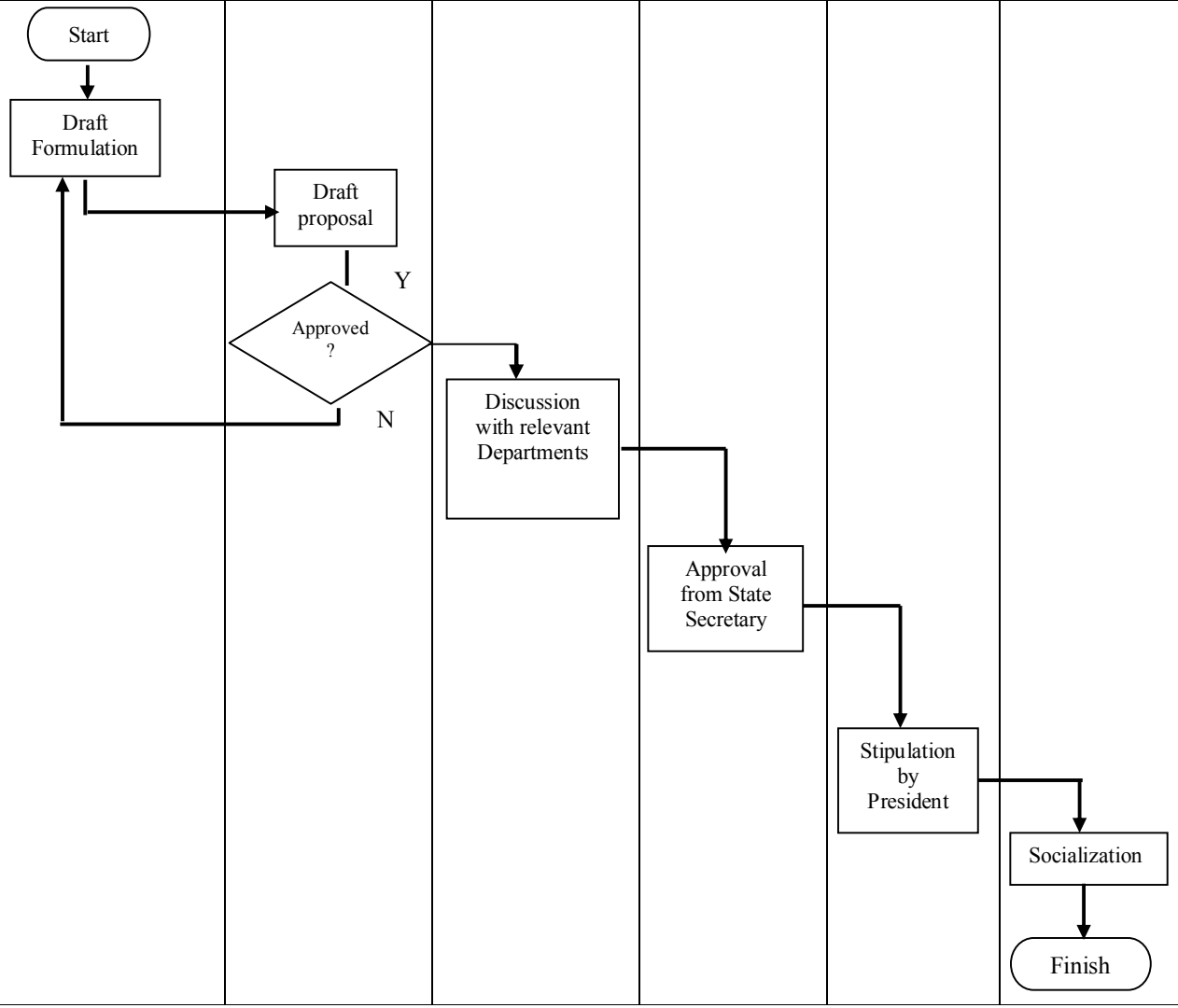

KEY

## = Being revised KEPRES = Presidential Decree Pres. Ins. = Presidential Instruction GR = Government regulation
MD = Ministry Decree MR = Ministry Regulation PD = Provincial Decree
HA = Home Affairs PW = Public Works EP = Environmental Protection ??? E = Environment

**Figure H1.1 Principal Legislation in the Water Sector**

**Figure H3.1 Flow Chart of Formulation until Stipulation of Presidential Decree**

| NO | DESCRIPTION | PROCESS DURATION (90 Days) | BUMN FOR WATER RESOURCES | KIMPRASWIL DEPARTMENT | DISCUSSION WITH DINAS/ RELEVANT INSTITUTION | STATE SECRETARY | PRESIDENT | SOCIALIZATION |
|---|---|---|---|---|---|---|---|---|
| 1. | BUMN for Water Resources proposes draft of Presidential Decree to KIMPRASWIL Minister | 5 | | | | | | |
| 2. | Discussion with Kimpraswil Department | 30 | | | | | | |
| 3. | Discussion with Kimpraswil Department, Finance Department and Ministry of BUMN for Water Resources. | 30 | | | | | | |
| 4. | Submitted to State Secretary for an approval. | 10 | | | | | | |
| 5. | Stipulation by President | 10 | | | | | | |
| 6. | Socialization to Pemda and community. | 5 | | | | | | |



## Figure H3.2 Flow Chart of Formulation until Stipulation of Regional Regulation (RR)

| NO | DESCRIPTION | PROCESS DURATION (150 Days) |
|---|---|---|
| 1. | BUMN for Water Resources proposes Regional Regulation draft of Province to Dinas/relevant institution | 5 |
| 2. | Discussion with Dinas/relevant institution | 45 |
| 3. | Public consultation with Provincial Pemda, NGO, & community representative | 10 |
| 4. | Draft of Regional Regulation submitted to Prov. Legal Bureau and jointly discussed with Dinas/relevant institution and BUMN, then to be submitted to DPRD. | 45 |
| 5. | To be discussed in hearing session in Prov. DPRD for an approval (attended by Dinas/relevant institution, BUMN) | 30 |
| 6. | Stipulation by Governor | 5 |
| 7. | Socialization to Communities, users, Pemda | 10 |

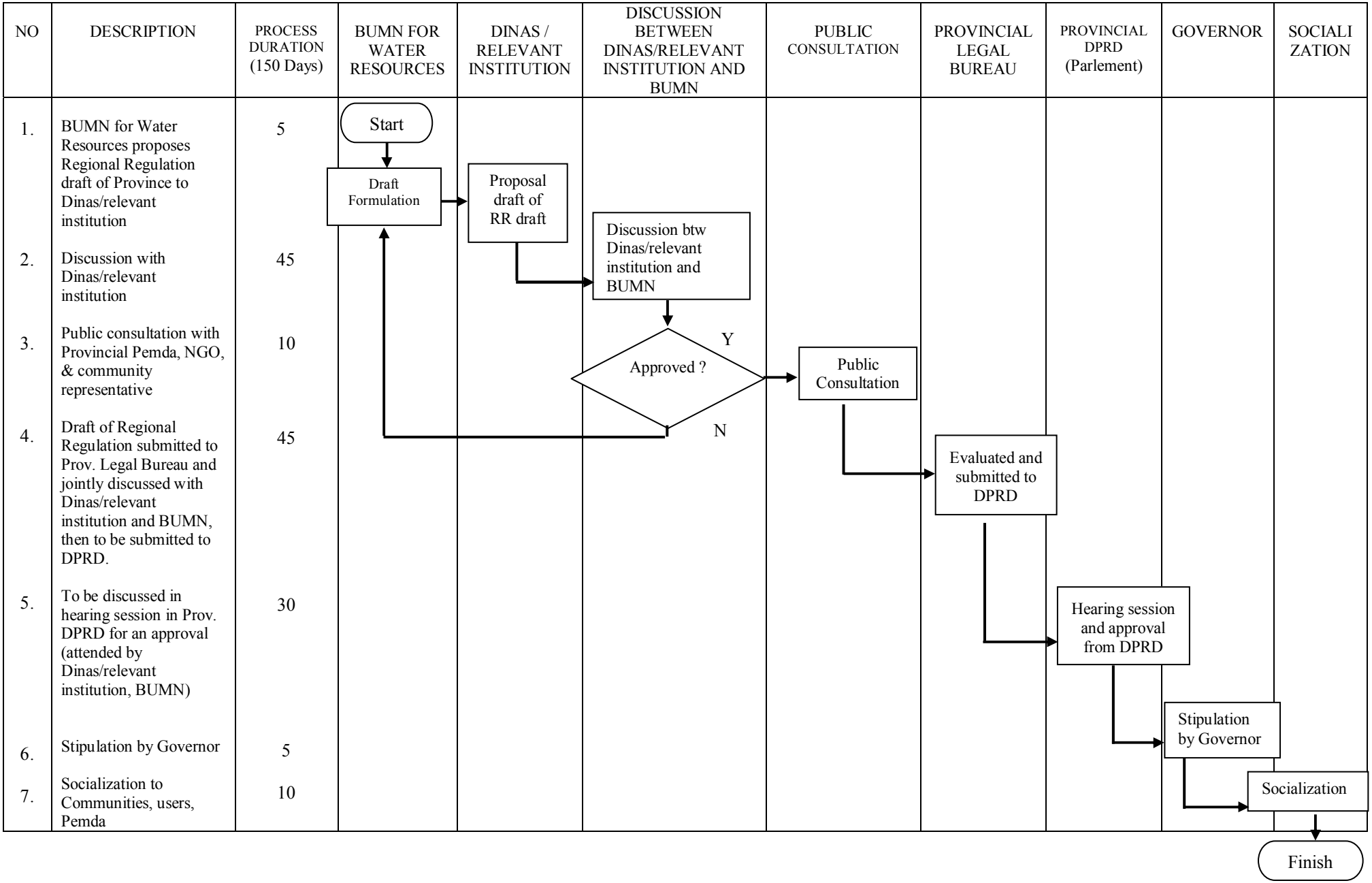
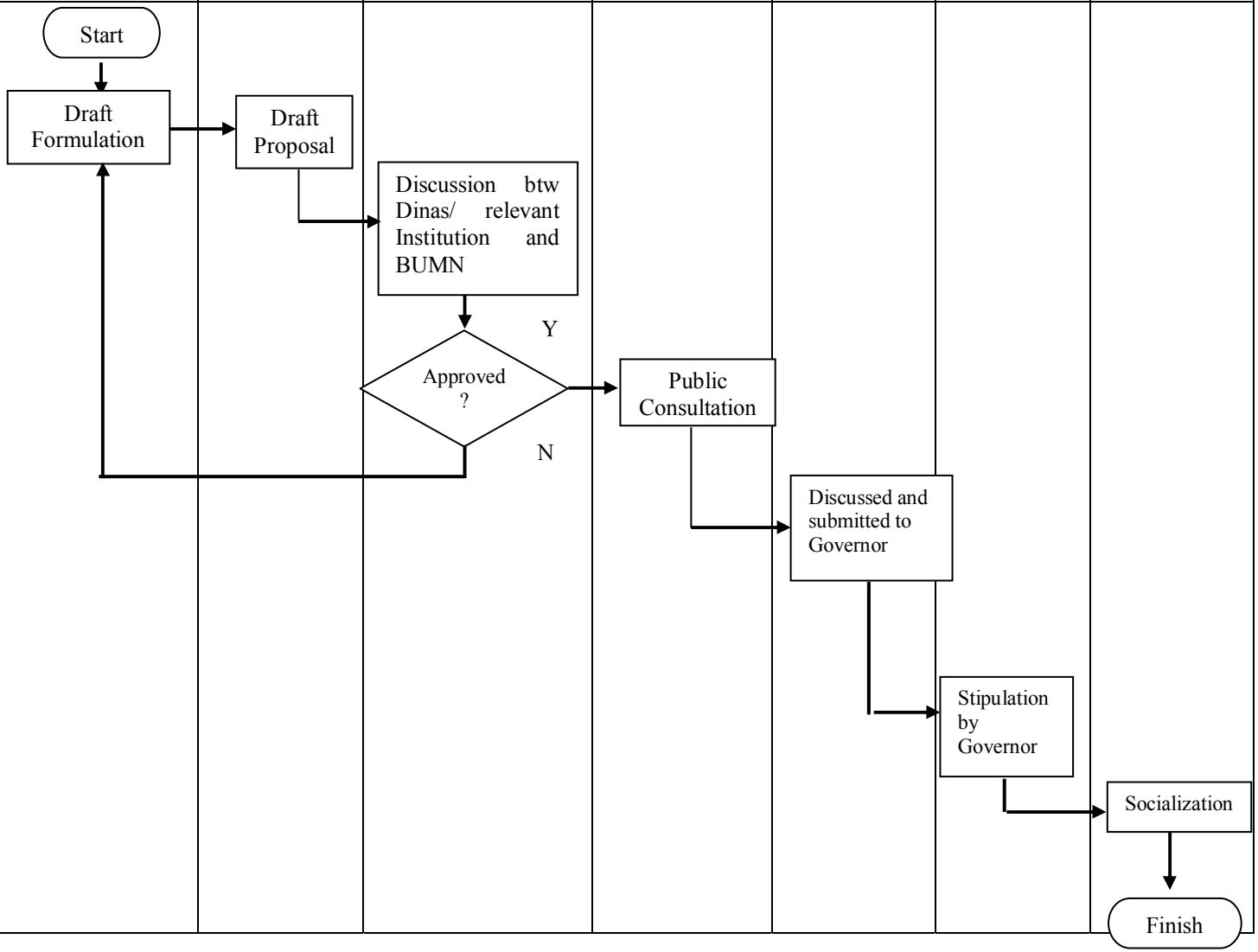


**Figure H3.3 Flow Chart of Formulation until Stipulation of Governor Decree**

| NO | DESCRIPTION | PROCESS DURATION (90 Days) |
|---|---|---|
| 1. | BUMN for Water Resources proposes Gov. Decree draft to Dinas/relevant Institution | 5 |
| 2. | Discussion with Dinas/ relevant Institution | 30 |
| 3. | Public consultation with Provincial Pemda, NGO, and community representative | 10 |
| 4. | Draft of Governor Decree submitted to Provincial Legal Bureau and to be discussed with Dinas/Institution and BUMN, further on to be submitted to Governor | 30 |
| 5. | Stipulation by Governor | 5 |
| 6. | Sosialization to community, water users, Pemda | 10 |



# *Appendix*

## Appendix H Main Items of Public Corporation's Roles and Responsibilities Described in Legal Documents (1/5)

| Item | | Description |
|---|---|---|
| 1 | Objective, Intent and Target of Public Corporation | Draft GR on PJT III:<br>Article 6:<br>(1) The objective of the Public Corporation is to conduct service for general use and at the same time to gain profit based on principles of the Public Corporation management.<br>(2) The intention of establishing the Public Corporation is to conduct general service on available and sufficient water resources for the welfare of the community at large, and to conduct specific activities given by the Government for the management of the river basins which covers planning, implementing, monitoring and evaluating activities to do with conservation, utilization, and control of water damage capacity, including providing information, recommendation, public counseling, and guidance.<br>(3) The target of the Public Corporation is to partake in the national economic development by participating in the national development programs specifically on water resources management sector. |
| 2 | Corporation's Work Area | GR No.6/1981 regarding Fee for Financing Exploitation and Maintenance of Water Resources Infrastructure:<br>Article 1:<br>4. Corporation's area is land area which gains direct benefit from water resources infrastructure that are managed by the Corporation. |
| 3 | Corporation's Roles and Duties | GR No.93/1999 on PJT I:<br>Article 8: The Company does some activities, those are:<br>a. Raw water supply for drinking water company, state-owned-electricity company, municipal matters and housing complex, fishing, farming, industry, irrigation, micro-hydropower and other purposes<br>b. Tourism, consultant service, construction service, land utilization and other matters to support the effort to reach the aim<br><br>Draft GR on PJT III:<br>Article 3:<br>Public Corporation is a state-owned enterprise that has been given duty and authorization to conduct O&M of water resources infrastructure, to make effective use of water resources, and to conduct other activities relating water<br>Article 8: Public Corporation conducts main duties that cover:<br>a. O&M of water resources infrastructure<br>b. Effective management (with entrepreneurship) of water and water resources<br>c. Watershed management such as protection, development, and utilization of water and water resources<br>d. Rehabilitation of water resources infrastructure<br>Article 9:<br>(1) By paying attention to economical principles and by ensuring the wellbeing of national assets, the Public Corporation conducts the following activities:<br>➢ Provision of raw water for water treatment companies, electrical power plants, municipal businesses, industrial and housing areas, fisheries/fish pond, estate crops, harbors, industries, irrigation, energy, flushing, preservation of the river ecosystem, and efforts in minimum debit for other uses.<br>➢ Provision of water resource as a medium for liquid waste dumping from industries and households that have been processed according to determined prerequisites.<br><br>(2) Aside from the activities mentioned in paragraph (1) above, the Public Corporation also conducts the following enterprises:<br>➢ Tourism within the working area in order to utilize potentials of water resources and its surrounding environment, as well as other potentials owned by the Public Corporation;<br>➢ Consultation services, management guidance, construction service, laboratorial services, equipment services, research services, educational and training services, information services and other services within the framework of utilizing potentials of the Public Corporation;<br>➢ Utilization of sand mining materials as a result of excavation activities and other activities within the water resources, and utilization of lands within the river benefit area by paying attention to the continuing function of water resources and its environment;<br>➢ Hydrologic electrical power plants and provision of raw water/treated water, water industries, liquid waste management;<br>➢ Other enterprises in areas related to water resources as well as available potentials that may support in achieving the target of the Public Corporation. |

## Appendix H Main Items of Public Corporation's Roles and Responsibilities Described in Legal Documents (2/5)

| Item | | Description |
|---|---|---|
| 4 | Duty for Rehabilitation Work | GR No.93/1999 on PJT I:<br>Article 7:<br>The rehabilitation cost is the Company's responsibility decided on the Company's work plan and budget plan<br>Draft GR on PJT III:<br>Article 7:<br>(1) Public Corporation may conduct rehabilitation work;<br>(2) The level of expense for rehabilitation activities that has been become the responsibility of the Public Corporation is to be determined in the Public Corporation's Work Plan and Budget Plan. |
| 5 | River | GR No.35/1991 on River:<br>Article 9:<br>(1) Construction authority and responsibility of the river ….. may be delegated to State-owned Enterprise (SOE)<br>(2) Delegation of authority and responsibility as referred in sub-article (1) shall not release the Ministry's responsibility to the river construction<br>Article 11:<br>River construction planning as referred to in sub-article (1) and (2) may be carried out by Regional Government or SOE according to river basin unit that is under respective authority and responsibility |
| 6 | River Structure | GR No.35/1991 on River:<br>Article 12:<br>(1) River structure construction that is intended for public interest shall be executed by Government or SOE<br>Article 13:<br>(1) Exploitation and maintenance of river and river structure ….shall be carried out by Government or SOE<br>Article 14:<br>(2) Implementation of river and river structure commercialization …… shall be carried out by SOE |
| 7 | Reservoir | GR No.35/1991 on River:<br>Article 15:<br>(2) Construction of reservoir that is intended for public interest shall be carried out by Government or SOE<br>Article 16:<br>(1) Exploitation and maintenance of reservoir shall cover the following activities:<br>a. reservoir water level monitoring<br>b. reservoir use management for various requirements<br>c. dam maintenance management<br>d. management of reporting system, evaluation and flood warning sign<br>(3) Reservoir management as referred to in sub-article (1) shall be carried out by respective parties who constructed the related reservoir.<br>Article 17:<br>(2) Reservoir protection shall cover the following activities:<br>a. Greenbelt area protection<br>b. Regular/periodical inspection on dam, reservoir, and its surrounding area<br>c. Protection in relation with reservoir exploitation (utilization)<br>(3) Reservoir protection as referred to in sub-article (2) shall be carried out by respective parties who constructed the related reservoir |
| 8 | Management of River | Public Works Decree N0.63/PRT/1993 regarding River Border Line, River Benefit Area, River and Former River Control Area:<br>Article 13:<br>(1) River management and exploitation guidance of river shall be carried out by General Directorate, Regional Government, and certain Legal Entity based on respective authority and responsibility to the relevant river. (Note: Legal Entity is regarded as Public Corporation)<br>(2) In implementing the provision as referred to sub-article (1), then relevant agency shall make inventory that covers:<br>a. wellspring for data/information such as; name, location, and water discharge of the river; |

## Appendix H Main Items of Public Corporation's Roles and Responsibilities Described in Legal Documents (3/5)

| Item | | Description |
|---|---|---|
| | | b. riverbed for data/information such as; name, location, length and capacity of the river;<br>c. land-acquired river border area for data/information such as; location, dimension of the river, acquisition year and fund source.<br>(3) Implementation of provision as referred to sub-article (2) shall be executed by Directorate General, Dinas and certain Legal Entity.<br>Article 14:<br>(4) Land use permit in river benefit area of delegated rivers to certain Legal Entity shall be completed with technical recommendation from certain Legal Entity, and permit will be endorsed by:<br>- Governor, in case the relevant river flows within one Province<br>- General Director on behalf of Minister, in case the relevant river flows within more than one Province.<br>Article 18:<br>(1) Monitoring of implementation of the provisions within this Ministerial Regulation shall be carried out by working unit or certain Legal Entity who manages relevant river based on respective authority and responsibility.<br>(2) Report of monitoring result as referred to sub-article (1) shall be submitted to:<br>➢ General Director, for monitoring of river area/basin under Minister or certain Legal Entity authority;<br>➢ Dinas, for monitoring of river area/basin under Regional Government or certain Legal Entity authority. |
| 9 | Financing for Construction, Exploitation and Maintenance of River Structure | GR No.35/1991 on River:<br>Article 30:<br>(1) Financing of river structure exploitation and maintenance that is intended for public interest shall be borne by Government or SOE in line with respective authority and responsibility |
| 10 | Technical recommendation on C-class mining | Public Works Decree No.458/KPTS/1986 regarding River Protection in relation with C-Class Mining:<br>Second Dictum Item 3.c:<br>Regarding river which is located within a particular Legal Entity's working area, its technical recommendation shall be issued by the relevant Legal Entity<br>Note: 'Legal Entity' means Public Corporation |
| 11 | Management of C-Class Mining | East Jawa Governor Decree No.29/2003 regarding Management of Sand Mining Activities:<br>Article 5:<br>(1) Mining Permit can only be awarded to places that have been specified by Jasa Tirta I Public Corporation.<br>Article 6:<br>(1) Permit is issued by the Governor after obtaining:<br>➢ Consideration from the pertinent/local Regent/Mayor;<br>➢ Technical Recommendation from Jasa Tirta I Public Corporation as the management of Kali Brantas, Kali Surabaya, Kali Porong And Kali Marmoyo Rivers.<br>Article 7:<br>(1) The permit holder is obliged to:<br>a. conduct mining activity in line with the requirements and technical provisions as specified in the permit;<br>b. periodically submit written report on the implementation of his/her activity to the pertinent local Regent/Mayor, Provincial Service of Public Works for Water Resources in East Java and Jasa Tirta I Public Corporation;<br>c. pay the c-class mining service fee to Jasa Tirta I Public Corporation and C-Class Mining Tax to Regency/Municipality Government in accordance with the prevailing regulations;<br>(5) Rights, Authorities and Obligations of Jasa Tirta Public Corporation<br>a. inventory and determine mining locations along the Kali Brantas, Kali Surabaya, Kali Porong And Kali Marmoyo Rivers;<br>b. award technical recommendation and requirements of mining and sand mining locations;<br>c. stipulate the amount of mining service fee in accordance with the prevailing regulations; |

## Appendix H Main Items of Public Corporation's Roles and Responsibilities Described in Legal Documents (4/5)

| Item | | Description |
|---|---|---|
| | | d. collect and receive C-Class Mining Service Fee;<br>e. periodically conduct surveillance and inspection together with the Provincial Service of Public Works for Water Resources in East Java;<br>f. determine and stipulate the landing, base and hoarding location together with the Provincial Service of Public Works for Water Resources in East Java and Regent/Mayor. |
| 12 | Surveillance of C-class Mining | Public Works Decree No.458/KPTS/1986:<br>The surveillance is the responsibility of Provincial Water Resources Services. |
| 13 | Responsibility of Ministry | GR No.93/1999 on PJT I:<br>Article 17:<br>The Ministry of Finance and/or the Ministry (Kimpraswil) are not responsible for all of the actions against the Law done by the Company and also for the loss that exceeds the state's wealthy that has been separated into the Company, except if (Ministries' misconduct)<br>Note: Company mentioned herein means the Public Corporation |
| 14 | Capital | Draft GR on PJT III:<br>Article 12: (in the case of new PJT III)<br>(1) The Public Corporation capital is state assets that is differentiated from State Budgeting and does not comprise of stocks.<br>(3) The amount of state capital as mentioned in paragraph (2) above, derives from national assets in the form of land, buildings, equipments, supplies, old metal and an excavation ship including its equipments; all from inventory of …. (PIPWS)….<br>(4) Not included as state capital, as mentioned in paragraph (3) above, is reservoir, weir, dike, tunnels, and river streamlining. |
| 15 | Collection of Fee | GR No.6/1981 on Contribution of O&M cost for Water Resources Development Infrastructure:<br>Article 2:<br>Fee for financing exploitation and maintenance of water resources infrastructures covers:<br>(1) Fee collected as compensation from the parties mentioned in Article 3 paragraph (1) which have gained benefits from the availability of water from water resources and water resources infrastructures as outcomes of the Corporation's management, either for commercial or individual use.<br>(2) Fee collected as compensation from those who because of their businesses/activities have caused contamination on water and water resources within the area of the related Corporation.<br>Article 3:<br>(1) Fee for financing exploitation and maintenance of water resources infrastructures as referred to in Article 2 is imposed to legal entities, social institutions, and individuals which/who gain direct benefits from the availability of water as outcome from the development of water resources infrastructures, either for commercial or individual use, shall be collected by the Corporation.<br>(2) Rule as referred to in paragraph (1) does not effect on farmers who utilize water for their farming which have been imposed Regional Development Fee (*IPEDA*), and plantation model, seeding and or experiments of Government institutions within Corporation's area.<br>Article 4:<br>(1) Minister of Finance and Minister of Home Affairs determine the amount as well as the implementation of compensation on Fee for Financing Exploitation and Maintenance of Water Resources Infrastructures for relevant Water Service Corporation, which is gained from Regional Development Fee (*IPEDA*) within Corporation's Area.<br>(2) The Corporation has the right to receive part of the Regional Development Fee (*IPEDA*) mentioned in paragraph (1) through related Regional Government Level II. |
| 16 | Entitlement of Fee Collection | Kimpraswil Decree No.342/KPTS/M/2002 on Authorization of PJT I as Corporation that is Entitled to Collect and Receive Fee:<br>First Dictum:<br>Authorization of Jasa Tirta I Public Corporation, formerly referred to as Jasa Tirta Public Corporation which was established based on Government Regulation No.5 Year 1990 and later perfected with Government Regulation No.93 Year 1990 based on Presidential Decree No.58 Year 1990, is determined as a Corporation that is entitled to collect and receive Fee for financing exploitation and maintenance of irrigation infrastructures within its working area. The Fee covers:<br>a. Extraction and utilization of surface water; |

## Appendix H Main Items of Public Corporation's Roles and Responsibilities Described in Legal Documents (5/5)

| Item | | Description |
|---|---|---|
| | | b. Disposing of liquid waste to water resources;<br>c. C-class mining in water resources;<br>d. Utilization of land within river benefit and river demarcation areas, either with ownership or managed status. |
| 17 | Determination of Fee | Draft GR on PJT III:<br>Article 49:<br>Amount of fee for operational and maintenance of water resources infrastructures shall be stipulated by Minister based on Board of Directors' proposal. |
| 18 | Determining Fee for PLN | Kimpraswil Decree No.291/KPTS/2003:<br>First Dictum:<br>Determine fee rate for raw water use by PLTA in PJT I working area as Rp.21.18/kWh (rate applied in year 2003) |
| 19 | Fee Collection Service Cost | East Jawa Governor Decree No.75/2002 regarding Administrative, Operational and Fee Collection Service Cost:<br>Article 1:<br>(1) Sum of Administrative and Operational as Well as Collection Service Cost as referred to in paragraph (1) is set to be 5% (five percents) from the realization of the Collection of Funding Fee for the Exploitation and Maintenance of Irrigation Infrastructure in the Working Area of Jasa Tirta I Public Corporation<br>Article 2:<br>The share of Administrative and Operational as Well as Collection Service Cost as referred to in Article 1, shall be stipulated as follows:<br>a. 20 % (twenty percents) are spent for the operational expenses of Advisory Group for Permit on Extraction and Utilization of Surface Water (KP3A);<br>b. 35 % (thirty five percents) are spent for expenses of documentation, permit management, and coordination with relevant Dinas/Institution. Its management is undertaken by the Public Works for Irrigation Service of East Java Province;<br>c. 25 % (twenty five percents) are presented to Finance Service of East Java Province as Collection Service;<br>d. 20 % (twenty percents) are spent for expenses of permit management and report within Jasa Tirta I Public Corporation. |
| 20 | Profit Utilization | GR No.93/1999 on PJT I:<br>Article 61:<br>45 % of net profit is used for (a) general reserve, (b) social education, (c) production service, (d) pension fund, and refund contribution.<br>Article 62:<br>Remaining profit shall be submitted to State Treasury as Development Fund which belongs to the State |

# *Supporting Report I*

# *INSTITUTIONAL PLAN*

**Supporting Report I**

# INSTITUTIONAL PLAN

## Table of Contents

## List of Tables



## List of Figures

# Supporting Report I

# INSTITUTIONAL PLAN

## I1 Institutions Involved in River Basin Management

There are three types of organization in the water sector:

a) Central Government Agencies,
b) Regional Government Agencies,
c) Foreign-funded Projects, such as the Jeneberang River Basin Development Project.

The partial implementation of the *otonomi daerah* legislation has decentralized management and funding of water resources to provinces and, especially, to kabupaten/kota. The role of central and provincial governments is now (or should be) limited mainly to policy-making and the provision of technical and financial assistance on demand only. The exception to this is the execution of trans-kabupaten/kota tasks by provincial technical implementation units (TIUs). In water resources management these TIUs are known as Balai PSDA and have (nominally) WRM responsibilities within river basins that cross kabupaten/kota boundaries. A partial chart of the water sector organization appears in Figure I.1.1.

## I2 Central Government Agencies

The Ministry of Public Works (MPW - until October 2004 Ministry of Settlement and Regional Infrastructure (MSRI - Kimpraswil)[1] has overall responsibility for the management of water resources in Indonesia through Directorate General of Water Resources (DGWR). In addition to water resources, MPW is responsible for the management of highways, housing, land use and development. Under *otonomi daerah*, however, day-to-day management of the O&M of rivers, river infrastructure and irrigation systems has been decentralized[2] to provincial and, more radically, to kabupaten/kota government offices. The role of MPW is (or should be) largely restricted to policy formulation and dissemination, regulation and standard setting, and funding capital projects. It has also retained technical and administrative control over externally funded development projects for the present, although Dinas PSDA are allowed some supervisory responsibilities. The Director General of Water Resources (DGWR), who reports to the Minister, is responsible for all water resources development and management in Indonesia. The nature of *otonomi daerah* has, however, changed with the issuing of the new Law No. 32 of 2004 on regional administration. This has taken back some authority from kabupaten and kota to provincial and central governments. Specifics reported by the media are given in Supporting Report H, Sections H1.2 and H1.6.

The Ministry of Home Affairs (MHA) guides, regulates and financially supports regional governments through various Directorates General. It also controls the IPAIR, or Irrigation Service Fee (ISF), which involves it in the funding of irrigation O&M.

The Ministry of Agriculture (MOA) is indirectly but closely concerned with WRM in irrigation because of its provision of agricultural support services to farmers using irrigation (e.g. extension, marketing and credit) and through R&D. MOA also has responsibilities for watershed and soil management in unforested areas.

The Ministry of Forestry, through Provincial BPDAS[3], is supposed to regulate the use of forested watersheds sustainably, but appears to have little authority over strong agencies such as Perhutani and individual kabupaten. This is particularly noticeable where areas of forest within trans-kabupaten river basins have (under *otonomi daerah*) been transferred to kabupaten. BPDAS are said to "coordinate" watershed management but they need more authority and funding to do this effectively.

The Ministry of Finance (MOF) manages the classification and evaluation program for the collection of PBB (land and property tax) which is redistributed to regional government and can be used (in addition to IPAIR) for funding irrigation O&M.

---

[1] In this report, MPW is used for all present and future references, and MSRI (or Kimpraswil) for references earlier than October 2004.

[2] This means, under *otonomi daerah*, transfer of functional *and* funding responsibility.

[3] Regional Office of Watershed Management reporting to DG Land Rehabilitation and Social Forestry Affairs in the MFP.

The Ministry of State-Owned Enterprises (BUMN), originally part of the Ministry of Finance, has responsibility for all matters concerning the establishment, operation, performance, funding and, if necessary, termination of Perum and Persero corporations throughout Indonesia. MPW, as a sectoral ministry, is responsible for supervision in respect of its sectoral activities and performance.

Tim Koordinasi, re-established under Presidential Decree No. 123/2001 should provide top level coordination of policies and strategies in the water sector. This interim arrangement is intended to evolve into a National Water Resources Council (NWRC) of ministers responsible for various aspects of WRM and, in particular, overall management of the major river basins that cross two or more provinces. The NWRC would include a permanent advisory group of stakeholders, NGOs and public representatives, and would be replicated at province and river basin levels. When the new water law becomes effective, the NWRC should be implemented without delay.

## I3 Regional Government Agencies

Through decentralization, responsibility for WRM has been progressively transferred to regional government (Provincial and now Kabupaten Governments). The main agencies responsible in South Sulawesi Province and the Jeneberang river basin are

(i) At provincial level, the Provincial Water Resources Management Service (Dinas Pengelolaan Sumber Daya Air – Dinas PSDA) and its technical implementation unit (TIU), the Balai PSDA (Regional Office of Water Resources Management) for Jeneberang RB (river basin),
(ii) Also at provincial level, the Provincial Water Resources Coordination Committee (Panitia Tata Pengaturan Air – PTPA), only partially functioning in South Sulawesi province,
(iii) At Jeneberang RB level, the River Basin Water Resources Management Committee (Panitia Pelaksana Tata Pengaturan Air – PPTPA), formally established and operational in Jeneberang RB but not yet meeting regularly,
(iv) At kabupaten/kota level, the Kabupaten or Kota Water Resources Service (in several organizational forms),
(v) At farmer level, for O&M of tertiary irrigation systems, P3A and higher level farmer groupings, only partially implemented.

As reported in Supporting Report H above, Law No. 5/1974 governing regional administration has been replaced by Law No. 22/1999[4]. As a result, more autonomy has passed to the kabupaten/kota level for WRM functions within kabupaten/kota boundaries while the province now has less. However, the river basin that crosses kabupaten/kota boundaries is the responsibility of the province (if within provincial boundaries) or, increasingly, basin level management agencies. Separate river basins within kabupaten/kota boundaries can be managed by the kabupaten/kota if they so wish.

Basin level management agencies are either provincial technical implementation units (TIUs) or UPTDs[5], known as Balai PSDA, or river basin management corporations ((Perum Jasa Tirta or PJTs).

### I3.1 Dinas PSDA Sulawesi Selatan (Provincial Water Resources Management Service for South Sulawesi)

The Governor of South Sulawesi Decree No. 214/2001, and Provincial Regulation No. 18/2001, state that the Dinas PSDA is responsible to the Governor for implementing various authorities in water resources management and, specifically

(i) "To formulate technical policy planning of development, management, general improvement, guidance and licensing according to the Governor's policy;

[4] This was revised by Law No. 32/2004 in September 2004 by DPR (House of Representatives). Supporting Report H mentions that the new law has returned some authority to central and provincial governments.
[5] Unit Pelaksana Teknis Dinas

(ii) "To technically control and supervise the water resources management services according to the Governor's policy;
(iii) "Administration Management;
(iv) "Management of Technical Implementation Unit of the Service (UPTD; i.e. Balai PSDA).

Neither Decree nor Regulation provide a mission statement and after the above statement there is no further mention of the UPTD(s).

A possible mission statement is suggested below:

(i) Formulation of policy, regulations and standards, and planning,
(ii) Providing support for developing or modifying trans-kabupaten/kota water resource infrastructure,
(iii) Providing support for trans-kabupaten/kota O&M of irrigation and river infrastructure,
(iv) Licensing and keeping records of (1) changes in trans-kabupaten/kota water structures and irrigation facilities, (2) surface water use, (3) C-class mining in river, and (4) wastewater discharge in river,
(v) Technical assistance to kabupaten/kota Dinas PSDA (or Sub-dinas Pengairan).

To carry out its permanent mandate, the Dinas PSDA is organized into four sub dinas, responsible for: technical development; rivers, lakes and dams; irrigation and swamps; and utilities and beneficiaries. These units are supported by an Administration Division comprising 4 subdivisions for planning, personnel, finance and general affairs. The Dinas PSDA's technical implementation unit for the Jeneberang RB, the Balai PSDA, is based in Gowa and reports to the head of Dinas PSDA. The Dinas PSDA structure is charted in Figure I3.1. The present total number of PNS (permanent government employee) staff is about 460 inclusive of all Proyek Induk, PIRASS and any other projects. The Dinas PSDA alone (less all projects and UPTD) has about 160 PNS staff.

The institutional and administrative (that is, non-technical and non-financial) work of the Dinas PSDA is specified partially in various documents including:

(i) Governor's Decree No. 214/2001 establishing the Dinas PSDA;
(ii) Job descriptions based on the above decree are said to be established for most sub dinas and the Administration Division;
(iii) Procurement procedure is specified in a separate President's Decree No. 80/2003 that applies to all Government Units;
(iv) Inventory control is specified in the National Treasury Inventory System (IKMN) and is applied to all Government units;
(v) Forms used for other personnel or administrative tasks usually lack supporting manuals, for example, performance evaluation which is said to be done annually.

The activities of the four sub dinas are summarized below.

(1) Sub Dinas for Technical Development

Stated responsibilities of this unit include: planning and executing surveys and investigations (e.g. soils); formulating and producing technical plans for water resources (river, swamp, groundwater, irrigation) development, rehabilitation etc.; supervising and controlling plan implementation; collecting and processing hydrological and water quality data; maintaining inventories of river and irrigation infrastructure. The unit has a mobile laboratory which is currently out of action.

(2) Sub Dinas for Rivers, Lakes and Dams

Stated responsibilities of this Sub Dinas include: maintaining inventory and developing/supervising conservation and improvement programs for rivers, lakes and dams; providing technical standards for implementation; planning, supervising and controlling the execution of O&M programs; training O&M staff; and natural disaster mitigation. There is no mention of the interface with the Balai PSDA or kabupaten/kota dinas PSDA in these responsibilities. It is assumed that many of the responsibilities and the relevant staff would eventually pass to Balai PSDA. And under *otonomi daerah* kabupatens/cities are separate from provincial Dinas PSDA, apart from policy guidance and, when requested by kabupaten/kota, technical assistance.

(3) Sub Dinas for Irrigation and Swamps

The stated responsibilities of this Sub Dinas include: developing and implementing improvement programs for irrigation and swamps; planning and supervising the operation and maintenance of irrigation and swamps; maintaining the inventory of infrastructure and its condition; training O&M staff. There is no mention of the interface with the Balai PSDA or kabupaten/kota dinas PSDA in these responsibilities. It assumed that many of the responsibilities and the relevant staff would eventually pass to Balai PSDA. And under *otonomi daerah* kabupaten/kota are separate from provincial Dinas PSDA, apart from policy guidance and, when requested by kabupaten/kota, technical assistance.

(4) Sub Dinas for Utilities and Beneficiaries

The stated responsibilities of this sub dinas include for non-irrigation water utilization: improving inter-agency cooperation; disseminating information to the community; training and extension services; licensing water users; recommending on C-class mining applications; supervising and controlling a) use by beneficiaries of water resources and State land, and b) liquid waste disposal to water bodies; providing technical assistance to beneficiaries.

## I3.2 Balai PSDA

The Balai PSDA for Jeneberang SWS (Satuan Wilayah Sungai), established by South Sulawesi Governor Decree No. 212/2001 and Provincial Government Regulation No. 18/2001 and

launched in 2002, is the Technical Implementation Unit (UPTD) of the Dinas PSDA. The Governor Decree was issued in accordance with Minister of Home Affairs (MHA) Decree No. 179/1996. The working area of the Balai PSDA in the Jeneberang SWS (as supplied by the Head of Balai PSDA to the Study Team) is about 8,000 $km^2$ and is illustrated in Figure I3.2. According to the Governor Decree No. 212/2001, the Balai PSDA's work area includes the Pangkajene Kepulauan, Maros, Gowa, Takalar, Jeneponto, Bantaeng, Bulukumba, Sinjai, Selayar and Makassar area. It is noticeable from Figure I3.2 that a considerable part of the western half of the northern boundary does not follow watersheds, apparently contravening the requirement that Balai PSDA is a *river basin* management agency.

As for the Dinas PSDA, there is no mission statement of specific main activities for the Balai PSDA in the Governor's Decree.

However, functions as originally defined in MHA Decree No, 179/1996 are as follows:

(i) To operate and maintain trans-kabupaten/kota water resources and infrastructure in the Jeneberang river basin for:
   a) Technical and semi-technical irrigation schemes.
   b) Raw water supply to various utilities and industries. (Currently no payment is made for raw water supply. A water tax is paid which goes to the Provincial Treasury and not specifically towards the cost of water resource management. Licenses to use/extract water are not yet issued.)
   c) Rivers and river infrastructure.
   d) Lakes, dams and check dams.
   e) Flood control and drought handling.
   f) Swamps.
   g) Water pollution control. (Balai PSDA Jeneberang has no equipment and no trained staff, therefore provincial Bapedalda undertakes some factory and river sampling using its own laboratory facilities. In addition, Dinas PSDA is apparently sampling water bodies around sugar factories in Maros and Takalar. There is no analytical laboratory in Kota Makassar.)
   h) Coastal protection.
   i) Estuaries and deltas.
   j) Sources of ground water.
(ii) Monitoring and data processing of quantity of quality and quantity of water.
(iii) Water allocation and distribution to meet basin needs.
(iv) Technical recommendations for licensing water and water resources.
(v) Monitoring and inventory of condition and function of water resources infrastructure.
(vi) Control of pollution and waste dumping in water and water resources.
(vii) Water resources extension services.

To execute some priority tasks from this list, the Balai PSDA with a present total staff of 23[6] is organized in three sections and a subdivision for administration (6 staff). The sections are Operation and Data Management (5 staff), Maintenance and Repair (5 staff), and Security and Control (5 staff). Job descriptions have been prepared and issued based on Governor Decree No. 212/2001.

The main tasks of the Balai PSDA's sections within the unit's work area should be, according to the Governor's Decree, as follows:

(i) Operation and Data Management Section: recommending water use permits and distributing raw water to users; collecting and managing hydrological data and data for water volume and quality;.
(ii) Maintenance and Repair Section: monitoring, keeping records of, maintaining and repairing water resources and irrigation infrastructure;
(iii) Control and Security Section: implementing water quality control, flood control, drought mitigation, irrigation training.

For some perhaps good reason, water quality monitoring and control is included in the Operation and Data Management Section (and not the Control and Security Section) in the job descriptions based on the Governor's Decree.

The Balai PSDA for Jeneberang SWS was one of six Balai PSDA selected for development from 2001 to 2004 under BWRM[7], funded by the Netherlands Government and supervised by the World Bank through IWIRIP[8]. Technical assistance was also provided for the establishment of PTPA and PPTPA. The main objectives of BWRM were institutional strengthening of Balai PSDA and the coordinating bodies, with the main effort going towards establishing the Balai PSDA organization, training staff, and setting up a WRM GIS and hydrology database. Management of water allocation was limited to the preparatory stage only. Necessary equipment was reported to be procured in each year.

Discussions with the management of Dinas PSDA and Kabupaten Water Resource Services in Gowa and Takalar in March 2004 and the BWRM Final Report dated May 2004 confirmed that Balai PSDA was still mainly occupied with hydrological data collection and monitoring activity, only small fraction of its remit in SWS Jeneberang, some two years after its establishment. However, since then the Balai PSDA has apparently expanded its scope of work to include some water allocation and maintenance in primary and secondary canals. From 2005, the unit will be expected to perform O&M work in all primary and secondary canals in irrigation systems between 1,000 ha and 3,000 ha in area. Added to this work will be the O&M of systems larger than 3,000 ha in area, to be funded (in theory) by Central Government. This expansion will require a substantial increase in staff and more training.

[6] 5 structural staff and 18 non-structural staff.
[7] Basin Water Resources Management. Before 2002, the BWRM was supported by the World Bank funded Java Irrigation and Water Resources Management Project (JIWMP) for Balai PSDA in Java.
[8] Water Resources and Irrigation Reform Implementation Program

The IWIRIP is to end in December 2004 at which point the GIS program and the hydrology database is expected to be complete. However, it is clear that there is much more development work to be done before the Jeneberang Balai PSDA is a fully functioning unit. A proposed project, WISMP[9], is proposed to continue development in 2005 under the proposed World Bank Adjustable Program Loan spanning the period 2005 to 2015. It is understood that this extension has now been approved.

### I3.3 Dinas PSDA Projects

In South Sulawesi, the Dinas PSDA now manages no projects exclusively its own. Instead, it has some overall jurisdiction, on behalf of the provincial Governor, of the two main foreign-funded projects managed by (1) Jeneberang River Basin Development Project ("Proyek Induk" – see I4.1 below) and (2) South Sulawesi Major Wetland Irrigation Project (PIRASS – see I4.2 below).

### I3.4 Provincial Water Resources Coordination Committee (Panitia Tata Pengaturan Air – PTPA)

Legally established under South Sulawesi Governor's Decree No. 35/2002, the PTPA's role is to assist the Governor to plan and regulate water utilization and quality in Jeneberang RB (and the other provincial basins). There should be 8 members with official posts including the Governor as Chairman, and 30 members. The South Sulawesi PTPA is now established but not yet fully operational. It should meet three times a year.

The WATSAL proposals under the new water law call for the creation of effective coordination bodies at national level (National Water Resources Council), provincial and river basin levels. Under these proposals the PTPA would become a Provincial Water Resources Council and would include numerous non-sectoral stakeholders and NGOs[10]. Farmer representatives of irrigation schemes (P3A or GP3A) would be included in PWRCs (and RBWRCs – see I3.5 below). In this case, provincial irrigation committees will become subcommittees of PWRCs and kabupaten irrigation committees will become subcommittees of RBWRCs. According to Dinas PSDA Kabupaten Gowa, their Irrigation Committee is dormant.

### I3.5 River Basin Water Resources Management Committee (Panitia Pelaksana Tata Pengaturan Air – PPTPA)

The Jeneberang RB PPTPA was legally established in August 2002 by South Sulawesi Governor Decree No. 709/VIII/2002 to assist PTPA in, among other things, regulating basin management and water utilization and quality. It has a large membership (about 150 persons) of heads of kabupaten/kota[11] and kabupaten/kota level heads of all relevant offices (e.g. Planning, WR,

[9] Water Resources and Irrigation Sector Management Program
[10] Now the new water law has become effective, PWRCs should be established without delay.
[11] Kota Makassar and the following nine Kabupaten: Gowa, Bantaeng, Bulukumba, Jeneponto, Maros, Pangkep, Selayar, Sinjai and Takalar.

Environment, Forestry, Agriculture, Industry, etc), PDAMs and GP3As. PPTPA was made operational by the Head of Jeneberang RB Balai PSDA (Secretary) and its Chairman, holding one full meeting in September 2003. Under the WATSAL Agenda, PPTPA would be replaced by a river basin level water resources council with even wider representation from basin level stakeholders. These proposals have not yet been implemented. When they are, which should be quite soon, the Government membership from each kabupaten should be reduced to accommodate the required 50 % of non-Government members without having a too large RBWRC.

### I3.6 Kabupaten and Kota Water Resources Services

Until the creation of the PJT Corporation, the Balai PSDA and the P3As (Water Users' Associations), kabupaten and kota water resource management (WRM) services were nominally responsible for all regional O&M of rivers, and river and irrigation infrastructure, as instructed and supervised by provincial authority. Now all the above new bodies have been or are being implemented and *otonomi daerah* is being adopted, the organizational framework for WRM has altered greatly and not always for the better. In general, Kabupaten and Kota WRM responsibilities, work load and staffing should have reduced, and should reduce further as a) Balai PSDA assume greater responsibilities for trans-kabupaten/kota O&M and b) higher level P3A organizations (i.e.GP3A) are created and become effective.

Nearly all of the Jeneberang RB (96 %) is in one administrative area, Kabupaten Gowa. Kabupaten Takalar and Kota Makassar each have about 2 % of the Jeneberang RB. Because of the adoption of *otonomi daerah* and the resulting inability of national and provincial agencies to impose a uniform WRM structure in the kabupatens and cities, there are several different WR structures in the Jeneberang RB, illustrated by the name of the dinas that reports to the kabupaten/kota head:

(i) Dinas PSDA, managing three sub dinas (O&M, Development, and O&M and Benefits) dealing with the various aspects of water resource management at kabupaten level. This structure is adopted by Kabupaten Gowa. It has several advantages for WRM, namely a) the WRM kabupaten head reports direct to the head of the kabupaten or kota, not the case with other structures, b) the field management units (UPTDs, Cabang Dinas or Ranting Dinas according to the kabupaten/kota concerned) report directly to the head of WRM.

(ii) Dinas PU (Pekerjaan Umum – Public Works) (managing several sub dinas e.g. water resources, highways, housing and settlement). The Takalar Kabupaten employs this structure (see I3.8 below) which has now, because of the change of Ministry name, become fashionable again.

### I3.7 Kabupaten Gowa Dinas PSDA

As mentioned earlier, Kabupaten Gowa has by far the largest area (96 %) of the JENEBERANG RB and so in some sense "controls" all the tributaries and water source areas of the basin.

In its overall organization, no less than 11 dinas for different sectors report to the Kabupaten Head (Bupati), including the Dinas PSDA responsible for water resources, together with the usual finance, personnel and administrative support services.

The title "Dinas PSDA" is based on the provincial Dinas PSDA model (by Kabupaten decision) as described in section I3.1 above, which means that the head of Kabupaten Dinas PSDA reports direct to the Kabupaten Bupati rather than a second level official. The dinas' task is water resources management within the kabupaten's territory as defined by current legislation.

Four sub dinas and one administrative division (for financial, personnel and administrative services) report to the head of Dinas PSDA. The Sub Dinas are Development and Control, Operation and Maintenance, Rural Irrigation and Benefit Improvement, and Fishpond Irrigation, Swamp, Lake and Reservoir.

The main responsibilities of the four sub dinas are summarized below.

(1) Development and Control
  (i) Surveying, collecting, analyzing and mapping water resources data;
  (ii) Planning and programming development of irrigation;
  (iii) Undertaking or supervising development or rehabilitation of irrigation.

(2) Operation and Maintenance
  (i) Distributing irrigation water after measuring water discharge;
  (ii) Coordinating with related agencies;
  (iii) Evaluating and improving the maintenance of technical irrigation areas;
  (iv) Collecting data and mitigating natural disasters in the irrigation areas;
  (v) Collecting data regarding the cropping plan and implementation;
  (vi) Monitoring cropping activities in each cropping season;
  (vii) Evaluating cropping implementation.

(3) Rural Irrigation and Benefit Improvement
  (i) Surveying, designing, supervising, evaluating rural irrigation development and rehabilitation;
  (ii) Issuing licenses and collecting fees for water utilization, C class mining, irrigation and surface water management;
  (iii) Collecting data on water resources utilization;
  (iv) Undertaking training and development of water users associations;
  (v) Undertaking legal extension services in water resources matters.

(4) Fishpond Irrigation, Swamp, Lake and Reservoir
  (i) Identifying and implementing development for irrigation, fishpond, swamp, lake and reservoir;
  (ii) Operating and maintaining infrastructures of irrigation, fishpond, swamp, lake and reservoir.

This sub dinas is not fully operational. Provincial Dinas PSDA are currently undertaking most of the tasks in this work area, apparently because river O&M is under provincial control.

(5) Technical Implementation Units (UPTDs)

To implement the dinas' tasks in the field, there are 9 UPTDs, with about 207 staff (85 PNS, 122 non-PNS), based in kecamatan offices and covering 16 kecamatan in total. The work of the UPTDs (originally ranting dinas) is almost entirely O&M of irrigation including primary, secondary and tertiary canals, while coordinating with WUAs. The WUAs are said to be taking little part in the O&M of the tertiary system despite training and support from various institutions. The UPTDs are unable to undertake significant training themselves because of limited funding. If more finance was available they could do more.

(6) Other Observations

Some other observations are as follows:

(i) The Irrigation Committee is not currently functioning although it has been formally established.
(ii) Concerning HRD, none is undertaken by the Kabupaten except on-the-job training when needed. The province provides what training is available.
(iii) There are no formal non-technical, non-financial procedure manuals. The relevant kabupaten perda are the main documented source of information.
(iv) Coordination is said to be good with both Provincial Dinas PSDA and Kabupaten Takalar. The province provides necessary support and funding (although insufficient for need) and Takalar collaborate well on such tasks as cross-kabupaten irrigation O&M[12].
(v) The Balai PSDA is not yet operating and maintaining the cross-kabupaten irrigation and other systems within its remit. This work is being done at present by 30 people, contracted to and paid by Balai PSDA, but managed by Gowa Dinas PSDA.
(vi) The major problem encountered is said to be limited funding which does not allow the Dinas PSDA to fully achieve its objectives.

## I3.8 Sub Dinas Pengairan Takalar

The Sub Dinas Pengairan Takalar is established as part of Dinas Pekerjaan Umum Daerah Kabupaten Takalar by the latest Bupati Decree No. 373/2001 and Kabupaten Regulation No. 8/2003. As mentioned above, this is the second and older type of water resources management structure at kabupaten level, although now appropriate due to the changed Ministry name. The other three sub dinas reporting to the head of Dinas Daerah PU Kab. Takalar are Regional Infrastructure (including a Roads and Bridges Section), Equipment, and Regional Settlement.

[12] Kabupaten Takalar have some complaints about water distribution during the dry season, however.

Until 2002, this kabupaten dinas was a ranting dinas under the Cabang Dinas for Gowa and Takalar which was responsible to the Provincial Dinas PSDA. So the present arrangement represents a major change.

The Head of Sub Dinas Pengairan has two sections reporting to him: Operation Section and River, Tertiary Canal and Spring Water Section. Operation Section is responsible for O&M of irrigation, hydrology and planting systems, while River, Tertiary Canal and Spring Water Section appears to carry out surveys of irrigation systems and disseminates information to P3As. The Sub Dinas Head also has 8 groups named *juru pengairan* (originally ranting dinas) of tertiary irrigation workers including gate operators to operate and maintain the tertiary system. These work under the technical control of the Operation Section.

Trans-kabupaten irrigation between Takalar and Gowa is operated according to a MOU between the two kabupaten and apparently gives little trouble until the dry season when there are frequent water shortages in Takalar. Although most of the tertiary schemes have been handed over to P3As, much coordination and assistance appears to be necessary and gatemen still report to the Sub Dinas. Water is allocated by PIRASS[13] to the trans-kabupaten system under the two-year maintenance agreement.

### I3.9 Dinas Cipta Karya Kota Makassar

Dinas Cipta Karya in Kota Makassar is authorized under the latest Provincial Regulation No. 30/2000 dated February 2001. Other legislation also applies such as GR No. 8/2003 (Organization Structure of Government Institutions), Presidential Instruction No. 7/1999 (Accountability of Government Institution Performance) and Decree of State Administration Institution (LAN) No. 239/IX/6/8/2003 (Performance Indicators). In addition, Walikota[14] Decree No. 19/2001 specifies this dinas' main tasks down to section level.

The dinas' stated overall objectives include the improvement of society's quality of life by environmental management and the development of public infrastructure. Its organization follows the standard four core operating units and an administration division with four subdivisions. Funding is obtained from Central, Provincial and Kota Governments in varying proportions. Staffing comprises 84 in total, 57 PNS and 27 on contract, estimated to be more than required for the current workload.

Current activities in the municipality and islands include:

(i) Landscaping and constructing Barombong traditional houses;
(ii) Constructing water gates, water pumps, drainage infrastructure, tertiary canals and similar items;
(iii) Installing water supply pipe network;
(iv) Installing public lighting systems;

[13] JBIC Irrigation Project - Proyek Irigasi dan Rawa Andalan Sulawesi Selatan.
[14] City Mayor

(v) Rehabilitation of municipal infrastructure;
(vi) Operation and maintenance of municipal infrastructure;
(vii) Maintenance of Baranglompo Island dock.

An anomaly noted in section I4.1 below, is that the main drainage channels and Pampang pumping station are still being operated and maintained by Proyek Induk 9 years after completion. This infrastructure should have already been handed over to the Municipality.

## I3.10 Farmer Groups

(1) Organization

As stated earlier in this report, where no river basin management corporation exists, operation and maintenance of the main irrigation system which includes headworks, feeder canals, primary canals, secondary and sub-secondary canals, down to the tertiary turnouts**,** is the responsibility of Dinas PSDA and Kabupaten PSDA.

In accordance with recent irrigation legislation (which will be changed under Law No. 7/2004), operation and maintenance of the on-farm system, which includes tertiary and quaternary canals, is now the responsibility of Water Users Associations (WUAs) or more commonly known as P3As (Perkumpulan Petani Pemakai Air). On average, one P3A, is currently responsible for five tertiary units of about 300 ha total area but can be as high as 900 ha. The main functions of the P3As are:

(i) To equitably allocate irrigation water within the tertiary system for which they are responsible according to annually prepared plans,
(ii) To maintain the tertiary irrigation system adequately (that is to be able to function sustainably),
(iii) To collect and distribute the IPAIR (irrigation service fee) and ensure that it is used to fund irrigation O&M, assisted if necessary by local government,
(iv) To ensure that members comply with relevant regulations issued by government and farmer governing bodies.

The P3A consists of a head and vice head answerable to the village chief, a water manager (ulu ulu), a secretary, treasurer, and the component farmer groups. The P3A head has to liaise with the gatekeeper (juru pintu) who controls water supplied to several tertiary systems and belongs to the local UPTD, and with the MOA extension officer (who looks after several villages) concerning crop planning and water management. The work of the P3A is said to be supervised by staff of the responsible kabupaten UPTD. The UPTD reports to the head of water resources management in the kabupaten/kota, and supervises the work of P3As and GP3As (federations of P3As).

(2) Issues

A comprehensive evaluation of P3As undertaken by questionnaire in 2000[15] in South Sumatra identified some institutional issues that may well apply to P3As in the Jeneberang River basin. These were:

(i) Generally supervision, training and technical support is inadequate;
(ii) The success of the P3A system depends on whether there is a tradition of community action, which may be non-existent;
(iii) There are no clear incentives for farmers to participate, particularly those with small plots who are struggling to make ends meet;
(iv) A reported lack of tertiary maintenance due to under-funding. This may have improved through recent P3A empowerment;
(v) The reported diversion of IPAIR funds on a massive scale to the various P3A functionaries such that only 10-15 % of the funds are actually used for maintenance in some schemes.

One could add:

(vi) The likelihood of considerable overlapping of responsibilities and therefore over-manning between UPTDs in Jeneberang River basin and P3A bodies. However, this assumes that farmer groups have become more effective and efficient. Evidence from Kabupaten Gowa suggests that this not the case and that the P3A situation may be worse than in the above evaluation.

### I3.11 Other Provincial Water-related Agencies

(1) BAPPEDA[16] South Sulawesi Province

The main tasks and functions of Provincial BAPPEDA are set out in South Sulawesi Provincial Regulation No. 21/2001 and Governor Decree No, 225/2001. Overall objectives are:

(i) To set up, develop, coordinate, facilitate: provincial government, the private sector, society, kabupaten and kota to generate synergy between the various agencies and sectors;
(ii) To guide provincial government agencies in preparing and implementing annual development plans and programs,
(iii) To monitor and evaluate the results of sectoral plans and programs,

The dinas is organized into five divisions namely: Economic; Institution and Human Resources Development; Water Resources and Regional Infrastructure; Information and Controlling Development; and Macro Planning and Development Financing. A Secretariat provides administrative, financial, HRD and programming support.

[15] Institutional Study in Way Sekampung Irrigation Scheme: Report 4, October 2000
[16] Provincial Office of Badan Perencana Pembangunan Daerah (BAPPEDA - Provincial Planning Agency)

BAPPEDA's main activities are:

(i) Executing the preparation of APBD[17] 2004;
(ii) Coordinating the planning activity of every sector with a related office/agency;
(iii) Revising Strategic Plan;
(iv) Evaluating and controlling dinas' activity;
(v) Drafting regional regulations;
(vi) Conducting reinforcement of lower level institutions (e.g. P3A);
(vii) Advocating health funding for the poor;
(viii) "Socialization" to all relevant institutions and parties.

In executing the above, the South Sulawesi BAPPEDA liaises with and coordinates all 18 provincial dinas and the 28 kabupatens and cities in the Province. It has a total PNS staff of about 126.

(2) BAPEDALDA[18] South Sulawesi Province

The South Sulawesi BAPEDALDA office's latest enabling legislation is Provincial Regulation No. 22/2001, Governor Decree No. 180/2001 (departmental/divisional tasks), and Governor Decree No. 14/2003 (management, controls for water and air pollution, permanent stipulated quality for water, and liquid waste emission to water bodies, air).

Overall objectives are

(i) To improve awareness of environmental problems and measures to resolve these;
(ii) To improve cooperation among institutions in studying and solving environmental problems;
(iii) To improve monitoring of environmental damage and water resource pollution;
(iv) To develop an environmental information system and apply sanctions for breaking environmental regulations.

Nowhere is there an objective to "improve the environment" or "protect the environment".

BAPEDALDA's organization follows the provincial model with four operating divisions *(bidang)*: Institution and Capacity Development (9), Environmental Impact Preventive Analysis (9), Protection, Observation and Rehabilitation (12); and Adherence to the Law (14). Current staff numbers appear in brackets. A Secretariat for administrative support services with about 21 persons brings the dinas' total PNS staff to about 65.

In attempting to achieve the above objectives, BAPEDALDA is said to:

(i) Control and rehabilitate damage to the ecosystem;

[17] Anggaran Pendapatan dan Belanga Daerah (APBD - Provincial Government Revenue and Expenditure Budget)
[18] Provincial Office of Badan Pengendali Dampak Lingkunan Daerah (BAPEDALDA - Environmental Impact Management Agency).

(ii) Protect the ecosystem and biodiversity of the Maros-Pangkep *karst* area;
(iii) Study (by environmental impact analysis (EIA) etc) the Makassar development area;
(iv) Develop and manage the provincial environmental laboratory;
(v) Monitor the rehabilitation of farm and forest;
(vi) Compile regional environmental status and update environmental information;
(vii) Develop and coordinate the execution and training of AMDAL (comprehensive long term EIA) UKL-UPL (short term EIA).

There is no mention of:

(i) Performing environmental impact analyses for all new projects,
(ii) Ensuring the regular monitoring of river water quality and, for this purpose, checking effluent treatment processes,
(iii) Managing the "Clean River Campaign" (PROKASIH – Program Kali Bersih) in the Province.

As one consequence of *otonomi daerah*, the provincial office has little knowledge of, and no direct control over, the activities or staff levels in BAPEDALDA offices in kabupatens and Kota Makassar. Kabupatens and kota BAPEDALDA offices are merely *expected* to comply with regulations and current policy. The official provincial role is to "guide, supervise and coordinate". (This applies, in theory, to every provincial dinas.)[19]

As is noted elsewhere in this report, to date and despite more than ten years of the PROKASIH campaign, no licenses are yet issued for discharge of trade effluent into water bodies and no penalties are imposed for discharge of pollution loads in excess of a permitted standard.

[19] The situation is understood to have changed under the new regional autonomy law (Law No. 33/2004), with some authority returned to provincial and central governments. But until the law is publicly available thr Study Team have had to rely on press reports..

## I4 Foreign-funded Development Projects

### I4.1 Jeneberang River Basin Development Project (JRBDP)

The JRBDP, otherwise known as Proyek Induk (Proyek Induk Pengembangan Wilayah Sungai Jeneberang – PIPWS Jeneberang), is the main foreign-funded development project in the Jeneberang RB. It was first established by DGWR decree in 1986 and after several changes was reorganized according to the latest DGWR Decree No. 110/KPTS/D/2002 as charted in Figure I4.1. The JRBDP General Project Manager reports, via the Head of the Region II Sub-Directorate, to Director of the Eastern Region Directorate of Water Resources, but is also under the general supervision of Dinas PSDA acting for the South Sulawesi Governor. Total project staff in April 2004 amounted to 175, of which 63 were permanent government employees.

According to the above DGWR Decree, the objectives of JRBDP are:

(i) To increase water supply and mitigate flooding;
(ii) To improve efficiency and productivity of water resource utilization;
(iii) To motivate the community to develop and distribute water resources;
(iv) To increase community involvement in O&M of WR infrastructures.

Development of the Jeneberang River basin under JRBDP is undertaken by three umbrella projects: (i) PPSA (Water Resources Development and Management), (ii) PAB (Raw Water Supply) and (iii) PBPP (Flood Control and Coastal Protection) each under its own project manager.

The Bili-Bili Dam Project is included under the Sub-Project Manager for Management as charted in Figure I4.2. This project, now completed, will be operated by JRBDP until the projected handover to PJT Jeneberang, currently scheduled for 1 January 2007. Total staff in April 2004 amounted to 60, including Pampang pumping station, of which 8 were permanent employees. There were 17 non-permanent staff engaged in security operations.

Past JRBDP projects have included:

(i) 2 Master Plans for river basin development, the last completed in 2002;
(ii) 5 Feasibility Studies for smaller dams, the last completed in 2001;
(iii) Detail design of 120 embung (small reservoirs) and construction of 48 embung;
(iv) Construction of Bili-Bili Multi-purpose Dam, completed in 1999 and handed over by contractor in 2000;
(v) Construction of Jeneberang Rubber Dam, completed in 1997;
(vi) Jeneberang Long Storage Dam, completed in 1993;
(vii) Regulation Pond and Pampang Major Drainage Channel, completed in 2001;
(viii) Major Drainage Channel of Kota Makassar, completed in 1993;
(ix) 3 sabo dams and 5 sand pockets, completed in 2001;

(x) Raw water transmission main from Bili-Bili Dam to Somba Opu PDAM, completed in 1996;
(xi) Jeneberang River Flood Control Infrastructure, completed in1993;
(x) Environment Improvement around Bili-Bili Dam (green belt and arboretum).

It is understood that all the above projects are still being operated and maintained by Proyek Induk staff. A curious case concerns the main drainage channel in Kota Makassar and the Pampang pumping facility which is still being operated and maintained by Proyek Induk 9 years after completion.

JRBDP is currently wholly responsible for the Bili-Bili Dam Project and the operation of the dam. JRBDP will continue to operate and maintain the Bili-Bili Dam and associated infrastructure, and indeed that part of the Jeneberang River basin selected for the PJT Jeneberang Corporation until the Corporation is operational[20] and ready to take over this responsibility.

The multi-purpose dam was completed ahead of schedule in 1997 with a reservoir capacity of 375 million $m^3$ for use in Kota Makassar and surrounding areas. Raw water is piped for treatment to the Somba Opu (PDAM) near Makassar. The dam also provides water for the Bili Bili irrigation system which serves an area of 23,660 ha. The PLN hydropower plant rated at 20 MW and with an annual output of 77 GWh is under construction, and is expected to complete in November 2005, about one year later than planned.

The Project's present organization structure shown in Figure I4.1 had, in April 2004, a total staffing of about 175 including the General Project Manager, of which about 63 are PNS and 112 are non-PNS personnel.

## I4.2 South Sulawesi Major Wetland Irrigation Project (PIRASS[21])

The overall objective of this project is, throughout South Sulawesi Province, to: rehabilitate dams and irrigation systems; develop irrigation systems; develop swamps; and develop irrigation for fishponds. Since its inception in the 1970s, the project has completed the following types and total area of irrigation schemes:

| Irrigation Scheme Type | Area (ha) |
|---|---|
| Technical | 250,000 |
| Semi-technical | 62,000 |
| Simple | 18,000 |
| Village | 184,000 |
| TOTAL | 514,000 |

The project estimates that a total of 900,000 ha of potential irrigation area is available, which leaves some 386,000 ha to be developed comprising 156,000 ha in swamps, and a further 230,000 ha of rainfed paddy.

[20] Currently estimated for the beginning of 2007 (see Supporting Report H)
[21] PIRASS = Proyek Irigasi dan Rawa Andalan Sulawesi Selatan.

More recently, ten irrigation schemes funded by OECF/JBIC have been completed amounting to some 78,700 ha and costing some Rp. 100 billion. None of these schemes have been fully handed over to regional governments[22]. Thus responsibility for operation and maintenance appears to be shared between PIRASS[23] and either provincial or kabupaten water resources services, according to scheme size. It was explained that this arrangement reflected the fact that scheme management was handed over but not the infrastructure which remained in the ownership of Central Government. In addition, neither provincial nor kabupaten are understood to have sufficient funding for adequate O&M of completed facilities. Clearly, this presents a long term problem that should be addressed with some urgency. Projects should not be required to operate and/or maintain infrastructure after the maintenance period.

There are eight irrigation schemes presently being developed, amounting to some 88,000 ha (including the 23,660 ha of the Bili Bili-Bissua-Kampili scheme) and costing an estimated Rp. 650 billion. Except for Bili Bili-Bissua-Kampili (2004), they are scheduled to complete in 2006 or 2007.

Funding is currently provided from JBIC, the Islamic Development Bank and the APBN budget. Amounts for 2004 are, respectively, Rp.90 billion, Rp.18 billion and Rp.63 billion. The Japanese Government has been a consistent contributor to the project from its beginning in the 1970s.

The project's organization, operation and main tasks were most recently specified in MSRI Decree No. 72/KPTS/M/2004, in DGWR Decree No. 259/KPTS/D/2003 and in the PIRASS Project Manager's Decree No. OR.01.03/PIRASS/IV/123/2004**.** The PIRASS project manager reports to DGWR through 1) the Chief of Region II Sub-Directorate and 2) Director of Eastern Region Water Resources Directorate. In addition, Head of the South Sulawesi Dinas PSDA coordinates PIRASS water resource management with that of Proyek Induk and the remainder of the routine work under Dinas PSDA. Dinas PSDA can propose, with Governor agreement, modifications to PIRASS plans, where justified, for consideration by DGWR. Dinas PSDA is also the official link between PIRASS and the kabupaten where development or rehabilitation work is undertaken, although in practice direct contact is made between PIRASS and kabupaten.

The present organization structure is shown in Figure I4.3.

Currently, PIRASS has about 315 permanent staff and 302 daily staff working in 8 project groups and three administrative groups (technical, administrative and treasury) for projects throughout South Sulawesi Province covering about 330,000 ha (technical, semi-technical and simple schemes). Two consultancy firms provide assistance.

[22] According to Law No. 7/2004, O&M responsibility should be allocated as follows: schemes ≤ 1,000 ha to kabupaten dinas; >1,000 ha and ≤ 3,000 ha to provincial dinas; >3,000 ha to MPW, which normally would assign responsibility to provincial dinas

[23] Strictly speaking, it is the PIRASS contractor that has to handover completed facilities, and that still retains some responsibility for O&M after the end of the maintenance period.

In the Jeneberang river basin[24], one of the 8 project groups is responsible for development, rehabilitation and O&M of Gowa/Takalar irrigation. This comprises three schemes currently covering 23,660[25] ha, Bili-Bili, Kampili and Bissua, all supplied with water from the Jeneberang River. The three schemes are scheduled to finish development in 2004, after which they will be managed for two years by the project before handover to Dinas PSDA (but see comments re scheme handover above). Responsibility for operation of the scheme has yet to be decided, however.

[24] This refers to the Study area and not the wider Jeneberang Satuan Wilayah Sungai (SWS).
[25] Bili-Bili = 2,360 ha; Bissua = 10,758 ha; Kampili = 10,545 ha.

## I5 Proposed Institutional Framework for New Jeneberang Corporation

This part of Supporting Report I provides some background and proposes the institutional framework for the new WRM Corporation in the Jeneberang River basin.

### I5.1 Priority River Basins

MPW envisages the development of corporations for seven priority river basins throughout Indonesia, as follows[26]:

(i) Kali Brantas River Basin: 40 rivers are corporately managed by PJT I;
(ii) Bengawan Solo River Basin: 25 rivers are corporately managed by PJT I as extension to the Brantas River basin;
(iii) Citarum River Basin: all rivers are corporately managed by PJT II;
(iv) Jratunseluna River Basin: has been studied for corporate management;
(v) Serayu Bogowonto River Basin: has been studied for corporate management;
(vi) Jeneberang River Basin: has been studied for corporate management;
(vii) Way Seputih-Way Sekampung River Basin: has been studied for corporate management.

### I5.2 Corporate River Basin Management Arrangements

After extended study and discussion, three principal options for the management of these seven river basins have been formulated:

(i) Option I envisages two regional PJTs: a) an Eastern Region PJT would manage Brantas and Bengawan Solo River Basins (currently under PJT I), Jratunseluna River Basin, Serayu Bogowonto River Basin, and Jeneberang River Basin; and b) a Western Region PJT would manage Citarum River Basin (currently under PJT II) and Way Seputih-Way Sekampung River Basin;
(ii) Option II envisages three separate PJTs grouped by region: a) Jeneberang River Basin would be incorporated under PJT I (less Bengawan Solo), b) PJT II would manage Citarum and Way Seputih-Way Sekampung River Basins, and c) a new PJT III would manage the Bengawan Solo, Jratunseluna and Serayu Bogowonto River Basins;
(iii) In Option III a National PJT would manage all seven priority river basins under some corporate structure yet to be determined.

It is understood that Option II has been approved by the new Minister for Public Works by letters to MOF and MSOE. The matter is subject to further approval by the State Secretary. It is also understood from MPW that specific and formal approval from the South Sulawesi Governor and DPRD is not needed before the Presidential Decree enabling the new Jeneberang Corporation is enacted. (This matter is further discussed in Supporting Report H Section H3.2.

[26] Strictly speaking, senior DGWR officials developed proposals under Kimpraswil.

## I5.3 Rivers and River Infrastructure to be Managed by the New Corporation

Using similar (but not identical) criteria[27] to other PJT-managed river basins, 5 first, second and third order rivers and their associated infrastructure in the Jeneberang River basin (Jeneberang RB) have been initially selected for the Corporation to manage. Selected rivers and infrastructure are listed in Table I5.1 and include, on the Jeneberang River, the Bili-Bili Dam (see Supporting Report E for technical detail) and raw water transmission main (RWTM) to Somba Opu PDAM, the Bili-Bili, Bissua and Kampili irrigation weirs, six sabo and sand pocket dams, and six hydrological gauging stations. There are a further two sabo dams and four hydrological gauging stations on three selected Jeneberang tributaries, the Jenelata, Salo Malino and Kausisi rivers.

Finally, a long water storage area ("Long Storage") is selected near the mouth of the Jeneberang, with three gates, all to be operated and maintained. This storage area is considered to be a part of the Jeneberang River. The facility is intended to store raw water for supplying users and flushing Makassar City's drainage canals.

The distribution of rivers, river infrastructure and measuring devices is shown in Figure I5.1, showing the whole river basin and in Figure I5.2, a plan of the lower Jeneberang. The five intakes for PDAM Makassar and Gowa treatment plants on the lower Jeneberang are operated and maintained by the water treatment company.

The rationale for the Corporation managing the three irrigation weirs[28] and the supply of water to primary canals is as follows:

(i) Precedent: this is the practice in other corporately managed river basins, and
(ii) The Corporation has overall responsibility for managing the water resources in the Jeneberang RB and should therefore have the final say over the abstraction of major quantities of surface water from the Jeneberang River. It should be noted that, measured over a full year, irrigation consumes about 80 % of all raw water abstracted from the Jeneberang River basin.

The Jeneberang Balai PSDA, when fully operational, would manage water received from the three weirs[29] into trans-kabupaten primary and secondary canals in accordance with demand from the tertiary systems. Other primary and secondary canals, or where the Balai PSDA is not functioning, would be operated and maintained by either Gowa or Takalar Kabupaten Water Resources Service, according to location.

[27] 1st, 2nd, 3rd order rivers with: sub-catchment areas more than or close to 10% of total river basin area, large dams, and weirs irrigating > 500 ha of potential area.
[28] Irrigating a total area of 23,690 ha.
[29] As pre-agreed between Jeneberang Balai PSDA and the Corporation.

## I5.4 Institutional Requirements

River basin management must be consistent with Government policies on good governance, decentralization, people's participation, and long term sustainability as stated in the draft National Water Resources Policy. In particular, development of the Corporation should be according to the principle of "One River Basin, One Integrated Management". This implies that ultimately the Corporation should be responsible for O&M in all rivers in the basin[30]. Also, O&M costs, at least, must be recovered from users so as to reduce the cost burden on local and central government.

The Jeneberang Corporation must deliver cost-effectively the appropriate level of O&M (not yet achieved by any Indonesian agency)[31] by ensuring that, in the Jeneberang RB:

(i) All potential sources of revenue are identified, maximized and realized, and used (apart from tax payment) only to defray water resource management costs,
(ii) Operating, maintenance and administration costs are minimized,
(iii) Quality assurance in delivering O&M is a major objective; a culture and standards for service delivery must be created and sustained,
(iv) Through (i) to (iii) financial viability is attained,
(v) To achieve (i) to (iii), full attention is given to training all personnel to the requisite standard and that only suitably qualified, capable people are recruited for jobs,
(vi) Stakeholders are actively encouraged to participate in basin management.

In terms of O&M tasks, Bili-Bili Dam is the priority. The Corporation has to operate and maintain the dam, reservoir, supply water to PLN's hydropower plant from late 2005, while satisfying the needs of irrigation (via the three irrigation weirs), PDAM and industry water supply downstream. Only the Corporation with its combination of a commercial approach (BUMN and BUMD alone of Government entities can receive payment from users) and attention to quality of service delivery can satisfy the above requirements.

The Corporation can only function properly if the present decentralization program is sustainably implemented.

[30] The new Water Law No. 7/2004 suggests in Clause 45 that each PJT Corporation should eventually manage (or "exploit") the entire river basin for which it is responsible and not share it with the Balai PSDA. According to the Law, the Balai would then only operate and maintain primary and secondary irrigation canals for trans-kabupaten/kota irrigation systems in corporately managed river basins. It is expected that the relevant GR on WRM will clarify this point and provide the basis for future river basin management planning.

[31] A new definition of "normal or standard level of O&M cost" is proposed under this project in Section I6.3 below.

## I6 Organization and Staffing Proposed for PJT Jeneberang

### I6.1 Areas of Responsibility

(1) Main Areas of Responsibility

To be consistent with other PJTs, the Corporation's main areas of responsibility, within its selected rivers and infrastructure, are proposed as:

(i) Watershed management, in collaboration with related agencies involved and under the authority of regional BPDAS[32],
(ii) Water quantity management, which includes: water use licensing and establishment of water rights, water allocation and distribution (including management of the Bili-Bili reservoir and the three irrigation weirs at Bili-Bili, Bissua and Kampili);
(iii) Water quality management, which includes: a) effluent discharge licensing which controls water pollution through enforcement of the law; b) water quality monitoring which is performed periodically for river water and effluent discharge from industries, and includes laboratory testing; and c) pollution control which is performed in-stream by flushing and off-stream, by helping to (1) implement legal and economic measures and (2) develop social awareness;
(iv) Flood and drought management;
(v) River area management;
(vi) Water resources infrastructure maintenance.

(2) Support Activities

The Corporation will also undertake necessary support activities (e.g. (1) collection of revenue from beneficiaries, polluters and government, and (2) in due course, development and operation of non-water business to boost revenue, such as sustainable sand mining, equipment rental, tourism and recreation) and coordination and collaboration with local government.

(3) Water Abstraction Permits

Under the new Water Law No. 7/2004, it is expected that the Corporation would recommend abstraction permits to South Sulawesi (SS) Dinas PSDA which would either itself approve or obtain approval from the Governor, depending on the size and importance of the proposed abstraction. At present, it is understood that such formal permits do not exist. Water supply exceeds demand by a considerable margin and so allocations are made relatively informally.

(4) Management of Ground Water

[32] Balai Pengelolaan Daerah Aliran Sungai (Regional Office of Watershed Management) which reports to DG Land Rehabilitation and Social Forestry Affairs in the Ministry of Forestry and Plantations. It is considered that the responsibilities of the three main agencies concerned with watershed management in the Jeneberang River.

There is another long-standing anomaly that was made legal by Presidential Decree No. 64/1972. This assigned the control of ground water to the then Ministry of Mining at the Ministry's suggestion. The arrangement was confirmed in 2000 by a Decree from the then Ministry of Energy and Natural Resources. The Study Team considers that control of ground water resources and the approval of abstractions should be in the hands of the authority responsible for surface water, i.e. MPW nationally, and the SS Dinas PSDA in the Jeneberang River basin. It is therefore recommended that such a transfer should be made as soon as convenient[33] by revising Presidential Decree No. 64/1972 and issuing a new Ministerial Decree from the Ministry of Energy and Mineral Resources.

If responsibility for the management of ground water is transferred to MPW, as recommended, and from there to the Corporation in the Jeneberang RB, the Corporation would have the following responsibilities assigned to it by Provincial Government:

(i) To recommend the issue of licenses with approval by Dinas PSDA and Governor,
(ii) To monitor execution of license conditions, including: extraction recording and reporting; payment; and the O&M by licensee,
(iii) Periodic assessment of aquifer with necessary technical assistance as part of the integrated management of all water resources.

In return for this responsibility, the Corporation would receive a license fee and a negotiated ground water supply fee.

## I6.2 Objectives

The following general objectives are suggested for the Corporation:

(i) To improve river basin management (RBM) and level of O&M to the norm[34].
(ii) To become self-financing by improving financial performance.
(iii) To conserve river environment.
(iv) To develop an effective and efficient working environment to reduce costs and deliver excellent service.
(vi) To develop private sector participation (PSP) where appropriate.

## I6.3 Sources of Finance

To achieve sustainable operation and maintenance, finance for the management of the river basin must be secured. This requires beneficiaries, polluters and Government to increasingly bear the full cost of managing the river basin by applying:

[33] This transfer was also recommended under the WATSAL program.
[34] "Normal" annual O&M cost of river infrastructure is now proposed to be "the estimated required accumulated annual O&M cost of each facility and river, including management. This annual O&M cost is based on (i) field reconnaissance, (ii) interview survey and (iii) the actual status of river infrastructure".
This definition would replace, and is believed to be less costly than, the previously employed "at least 1% of the current undepreciated asset value of each facility".

(i) The Beneficiaries Pay Principle: through water use fees and revenue from non-water services;
(ii) The Polluters Pay Principle: through pollution fees and penalties;
(iii) The Government Obligation Principle, currently expressed as the Public Service Obligation Pinciple: where Central or Regional Government pays for the provision of non-commercial but essential water services (e.g. flood management, water quality management, watershed management and water resources conservation), where such services cannot be funded by (i) and (ii).

Potential beneficiaries with an obligation to pay water use fees include: two PDAMs (Makassar City and Gowa), PLN at Bili-Bili Dam from late 2005, and one small industrial concern[35].

No functioning beneficiary is at present paying for the raw water it consumes. No polluters are paying for licenses or for discharging pollutants into water bodies. The Public Service Obligation Principle has been accepted by GOI, is already operating in other Ministries (e.g. Education), and is currently being discussed for the water sub-sector, but is unlikely to become effective before mid-2005. In this connection, PJT I has already given initial cost estimates to Kimpraswil for a) the shortfall between actual O&M expenditure and that needed for sustainable WRM and asset management and b) providing the various non-commercial river basin management services.

In the case of farmers and water for irrigation (to be provided without charge according to new Law No. 7 or 2004), there is a strong case for government[36] paying some amount to PJT Jeneberang for the supply of such irrigation water (~ 80 % of all surface water consumed). Such a cost should not be subsidized by either commercial or private consumers/users.

## I6.4 Organization Structure and Indicative Staffing

(1) Overall Structure: PJT Jeneberang as Extension to PJT I

The outline organization structure of the Jeneberang Corporation as extension of the PJT I working area and its relation to PJT I is proposed in Figure I6.1. So that Provincial Government may have some influence at the highest level of PJT I, it should appoint a senior representative to the PJT I Supervisory Council.

It is suggested that the Jeneberang Corporation is known as PJT Jeneberang or in abbreviated form, PJT Jeneberang. Its more detailed organization and indicative staffing is proposed in Figure I6.2. This estimated staffing level of 76 persons (also summarized in Table I6.1) is intended for a future steady state (in the 5th year, say) in order to allow assets controlled by PJT Jeneberang to be maintained sustainably and efficiently (not so far achieved by any PJT since POJ was formed in the Citarum River basin in 1970 as their managements are well aware and

[35] This is a sugar factory (which consumes 10,000 $m^3$/year of raw water) understood to be in financial difficulties.
[36] Central government for irrigated areas >3,000 ha: provincial government for irrigated areas >1,000 ha and ≤3,000 ha; kabupaten government for irrigated areas ≤1,000 ha.

concerned about). Start-up staff levels will be much reduced, partly for financial reasons (costs should be minimal until adequate revenue streams are assured from beneficiaries, polluters and Government, as initial funding from Government appears to be very difficult to obtain) and partly because any newly established organization must begin with a reduced functionality and staffing.

Responsibilities and staff levels for the start-up phase (say the first two years after enactment of the necessary enabling legislation[37]) are initially suggested in paragraph (3) below.

The main features of the organization are described below.

A Director of Jeneberang Operations, who should, when the extension is fully implemented, be a member of the PJT I Board of Directors, will be responsible for achieving corporate objectives within budget, and maintaining the necessary external relations within the Jeneberang River basin. He will be assisted by the PJT I Directors in their respective domains (to the extent practicable given the distance from Makassar to Malang) and will be based in Makassar City. He will also be advised by a small committee of multi-sectoral stakeholders and officials representing interests in the Jeneberang RB. He should convene regular (at least monthly, more frequently in the early stages) meetings of his subordinate managers to review plans and progress.

For logistical and other reasons[38], the Operations Director should have considerable authority to manage his Directorate within budget and without frequent reference to PJT I For the present, the authority levels currently allocated to Operations Directors in Brantas and Bengawan Solo river basins should be used. Authority limits should cover, within and outside budgets, such items as recruitment, expenditure commitment, advance payments, public statements, technical recommendations and signing documents. (This is not an exclusive list.)

Some of these authorities are included in the Operations Director's draft job description and employee specification in Table I6.2. (This is based on the suggested proforma job description/employee specification that appears in Table I6.3.) However, they should be reviewed for possible enhancement after a reasonable probation period, because of the relatively remote location of the Jeneberang River basin.

The Operations Director will be responsible for the following subordinate units:

(i) Two Water Services Divisions (see subsection (2) below);
(ii) A Technical Bureau, responsible for: technical planning (with water services divisions); preparing and monitoring execution of the annual work program; water quality planning and control (monitoring, testing and reporting); laboratory management[39] and water quality and quantity data processing;

[37] See Supporting Report H for further discussion.
[38] For example, the need to demonstrate a reasonable degree of river basin autonomy to employees and public.
[39] Initially laboratory services would be out-sourced; later PJT J would establish its own laboratory.

(iii) An Administration and Finance Bureau, responsible for providing: budgeting, management accounting and financial accounting services; personnel administration and training services; office, property and procurement services; and business development, public relations and promotional services; and

(iv) In due course, after the successful implementation of the major parts of the above units, a Non-Water Services Division should be set up to develop revenue from non-water business, such as sustainable sand-mining, tourism, equipment hire and consultancy. This division has not been structured or staffed for this report. However, both PJT I and PJT II have extensive experience in this area which could be applied usefully in the Jeneberang River basin when the time comes.

Quality management and internal audit functions will be undertaken initially from PJT I's head office in Malang.

(2) Water Services Divisions

The water services divisions and subdivisions will undertake responsibilities (i) to (vi) [except (iii) b) which deals with water quality monitoring] in section I6.1 for the selected five rivers and river infrastructure. They will formulate, with Technical Bureau, the O&M program for this infrastructure. Divisions and subdivisions will be allocated to defined areas of the Jeneberang RB and have office locations as shown in Figure I5.1 and as described below. Locations of the 17 items of infrastructure and 10 hydrological gauging stations to be managed by PJT J are also shown in Figure I5.1. Water services divisions will also have some business-related responsibilities also in their areas of jurisdiction (although these must not diminish their main O&M work): fee collection from customers, development of customer base, development of the commercial use of resources (land, water, and initially, C-class mining[40]).

Water Services Division 1 will be based at the Bili-Bili Dam site and will be responsible for operating and maintaining the Bili-Bili Dam and reservoir, the raw water transmission main (RWTM) to Somba Opu PDAM, the Bili-Bili Dam catchment area of the upper Jenberang River, and the Jenelata River, as well as all the hydrological gauging stations. The division is divided into two subdivisions as follows:

(i) Sub-Division I-1 will be responsible for the O&M of the Bili-Bili Dam and reservoir and its related infrastructure and measuring devices operated from or related to the Dam site, such as the RWTM and the 10 hydrological gauging stations;

(ii) Sub-Division I-2 will be responsible for maintaining the sabo and sand pocket dams, and for river and watershed conservation in the Bili-Bili Dam catchment and in the Jenelata River catchment. The control of legal and illegal sand-mining in these areas will be an important task for this unit.

[40] If C-class mining becomes a significant business, it should be moved to a separate non-water business unit to avoid conflicts of interest (e.g. with its watershed responsibilities in item I9.1(v)).

Water Services Division II will be based in Makassar City and will be responsible for operating and maintaining Bili-Bili, Bissua and Kampili irrigation weirs on the Jeneberang River, the river itself and its infrastructure from just below the Bili-Bili Dam to the Makassar Strait, as well as the Long Storage. This division will be divided into two sub-divisions as follows:

(i) Sub-Division II-1 will be responsible for the O&M of the three irrigation weirs and the associated stretch of the Jeneberang River;
(i) Sub-Division II-2 will be responsible for the O&M of the rubber dam and Long Storage and the associated gates, two groundsills, 11 drainage sluice gates, 3 river gates, river dykes, revetments, groynes and the jetty. The 14 gates will be operated by temporary staff living near the gates and instructed from the Bili-Bili Dam control centre. This sub-division will also undertake the necessary river conservation between Bili-Bili Dam and the Makassar Strait. A particular task will be the control of salinity levels by gate operation and other appropriate measures in the Long Storage facility.

All second level managers, except the head of Water Resources Division I, will be based in Makassar City.

(3) Corporation Start-up (2007-2008, 2 years)

The initial implementation of PJT I Bengawan Solo provides a useful guide to what can be expected in the Jeneberang River basin, both before and after enabling legislation is passed. As mentioned above, the chief restrictions on the speed of post legal corporate development are funding and the capacity of staff to learn both new skills and the corporate culture. In fact, initial funds for PJT Jeneberang may be even tighter than for Bengawan Solo because PJT I's surplus has been reduced by some Rp. 2 billion due to start-up expenditure for PJT I Bengawan Solo.

The time frame for producing and enacting the necessary legislation for PJT Jeneberang is discussed in Supporting Report H. This suggests that after the initial Presidential Decree is issued, hopefully in early 2005, a further two years will be required before the Corporation can legally start O&M operations. Until then, Proyek Induk or PIRASS and, where O&M tasks have been handed over, SS Dinas PSDA or UPTD Balai PSDA will undertake the necessary O&M work in the Jeneberang RB.

In the first two years of operation, PJT Jeneberang will undertake only the most essential operations and maintenance tasks and personnel training in view of the expected very limited funding. Such tasks would include: operation and essential maintenance of the Bili-Bili Dam, the three weirs, the raw water transmission main, the long storage gates, and the hydrological gauging stations. Where funds are limited, the emphasis should be on vital O&M of infrastructure rather than indirect support functions. During this period, funds permitting, PJT Jeneberang should be developing its institutional capacity to deliver the minimum services decided on to a standard acceptable to beneficiaries and other stakeholders. This would be done with systematic help from PJT I.

In addition, efforts should continue (again supported by PJT I) to progress legal and other actions needed to speed the generation of river basin revenue from beneficiaries, polluters and Government (via the PSO procedure).

The start-up organization, it is suggested, will comprise a much reduced Water Resources Division I managed from Bili-Bili Dam Office and a much reduced Water Resources Division II managed from the Proyek Induk Offices in Makassar. The two support sections in the longer term structure (Technical Bureau and Administration and Finance Bureau) will also reduce in line with the diminished technical workload and overall staff numbers. It is also assumed that all security tasks and staff will be subcontracted.

In accordance with the downsized structure, staff numbers reduce from an estimated 76 in the long term structure to an estimated 45 in the start-up structure. The organization structure and estimated staffing of PJT Jeneberang during the first two years is shown in Figure I6.3 and summarized in Table I6.4.

It is stressed that these staff numbers, although detailed, are best estimates using available information. They should be examined and verified against a more accurate assessment of the O&M workload and support needs during Phase III by PJT I and the manager to be appointed as Operations Director Jeneberang.

Well before the beginning of the start-up period, the three key senior officers[41] should be appointed first, in strict accord with the job descriptions and employee specifications. They, in turn, would be responsible for appointing, with senior PJT I officials, only the staff that are immediately needed from the estimated 51 (plus the subcontracted security staff). All these staff should be systematically trained and developed, technically and in the corporate culture, according to the adopted HRD program. The recruitment and development process should begin early in 2006 (at latest) if the planned 45 staff are to be ready to operate at the beginning of 2007.

Initial selection, training and development of PJT Jeneberang staff according to a proposed HRD framework and timetable are discussed in Supporting Report N.

(4) Development Phase (2009-2011, 3 years)

The following three-year period should see the further development of PJT Jeneberang, both functionally and organizationally. Funds permitting, the work of the directorate should both extend to include more of the required O&M tasks listed in Figure I6.2 and improve in quality towards the standard expected of an ISO 9001 agency, the status of its parent company. To help achieve this, the HRD program, initiated in the start-up phase, should be continued and elaborated (see Supporting Report M for more on this subject). It is unlikely that PJT

[41] Operations Director, Head of Technical, Administration & Finance Section, and Head of the Bili-Bili Division.

Jeneberang would be ready organizationally and financially to become an independent corporation before the end of this period.

During this phase, all available sources of river basin income should have been fully developed, from beneficiaries (including users of ground water which by 2011 should have been transferred from Ministry of Energy and Mineral Resources), polluters and Government's PSO funding. Furthermore, it is possible and certainly desirable, that users of the huge amounts of raw water supplied[42] through elaborate and costly infrastructure for irrigation purposes would be paying a modest water supply fee[43] to encourage water conservation, and help to defray the costs of weirs and related facilities.

(5) Expansion Phase (2012 onwards, 10-15 years)

During this phase, non-water business should be developed in order to exploit sources of income additional to those from WRM. It is desirable that such business should be organized separately from mainstream water services to avoid conflicts of interest. For example, sustainable sand-mining should be a feasible income source available to PJT J. But an important task of the Sub-Division I-2 staff (responsible for upstream O&M) based at Bili-Bili Dam site is to ensure that both legal and illegal in-stream sand-mining is properly controlled, including any legal business undertaken by PJT J.

Moreover, providing quality can be assured and *the practice is cost-effective,* certain suitable jobs and services (in addition to the existing security function) may be contracted out to private agencies. In fact, as PJT I is already successfully using such sub-contractors in the Brantas and Bengawan Solo River basins, this practice could be introduced earlier for Jeneberang, after initial necessary feasibility studies.

[42] About 80% of total water demand from the Jeneberang River predicted in early 2005 by the Study Team.

[43] For this purpose, the Water Law No. 7/2004 would need to be amended together with the associated Central and Local Government regulations and decrees. Such a policy shift would be in line with evolving international paradigms on the economic valuation of water obtained through expensive infrastructure, to encourage conservation of water resources as well as help to recover costs.

## I7 Proposed Inter-Agency Arrangements for WRM in the Jeneberang River Basin

Considering the governance of the Jeneberang River basin, a draft Presidential Decree exists for Jeneberang RB to be designated as a "strategic" river basin and is currently being discussed within MPW. If this is approved, the Corporation would be confirmed as a BUMN (which it should be anyway as an extension of BUMN PJT I), although Central Government would normally delegate management of the strategic river basin to regional government (using the framework of *deconcentration* and *assistance*[44]). Furthermore, since the Jeneberang River basin crosses several kabupaten/kota boundaries, it should be managed by Provincial agencies. However, as already noted, Kabupaten Gowa covers some 96 % of the river basin area, the first time that one kabupaten has had such a large share of a river basin to be corporatized, but probably not the last.

This relatively complex situation has to be converted into an organizational framework that attempts to satisfy all parties. For example, in view of its large share of the river basin territory, it seems reasonable that Kabupaten Gowa should eventually have some participation in governance and the financial benefits (when these materialize). While part of PJT I, PJT J might contribute, say, 5 % of retained profit for watershed conservation & community assistance in Kabupaten Gowa, but could not share power before PJT J becomes a BUMD.

At some later stage, both Central and Regional Government might, at some later stage, participate in PJT J as a BUMD as follows: Central Government with 40 %, Provincial Government with 40 %, and Gowa Government with 20 %. This would require capital investment (probably in kind) from each level of government in these ratios, or other ratios to be negotiated.

For the normal O&M of the Jeneberang river basin, PJT Jeneberang will operate under or together with several other authorities and WRM agencies in the Jeneberang RB, each having its own role and powers. These are listed below by major function with a brief statement of the proposed relationship with the Corporation.

(1) River Administration

MPW delegates to the South Sulawesi Governor the final authority on all matters concerning WRM in the Jeneberang RB. Some of this WRM authority will be delegated in turn to the SS Dinas PSDA. Other ministries delegate similar authority to the Governor in their respective sectors, in particular State Ministry of Environment for environmental management. Thus, licenses for the discharge of wastewater into rivers would be approved by the Governor after recommendation by SS BAPEDALDA or, in time, PJT J.

[44] See Law No. 25 of 1999.

(2) Technical Regulation

SS Dinas PSDA will be responsible to the Governor for regulating all aspects of WRM (including issuing and monitoring permits for water abstraction) undertaken by PJT J to ensure compliance, and for enforcing the various WRM regulations. Thus, PJT J should inform DPSDA when infringements of these regulations occur and expect appropriate enforcement action to be taken, for example, through sanctions or penalties as prescribed by law.

Other South Sulawesi sectoral agencies would have the same general responsibilities within their sectors.

For example, South Sulawesi Dinas BAPEDALDA is the provincial authority on water quality in rivers, wastewater discharge to rivers, and act as the PROKASIH coordinator for the Province. This Dinas will approve and pass wastewater discharge license applications approved by PJT J to the Governor for signature.

In the case of forestry and the related subject of watershed management (vitally important in the relatively fragile Jeneberang River basin), the position is more complex and seems to be in some kind of transitional state. The South Sulawesi Dinas Kehutanan is the provincial office of the Ministry of Forestry and should regulate the South Sulawesi forestry sub-sector by, for example, issuing logging licenses and controlling new planting and giving technical guidance to Kabupaten Dinas Kehutanan. This Dinas has now two UPTDs (Technical Implementation Units responsible for seedling production and issuing licenses for forest products respectively)[45] which implement its work in the field. However, two issues are weakening its position.

Firstly, the Gowa Kabupaten Dinas Kehutanan has become a strong agency in the Jeneberang River basin, due partly to *otonomi daerah*, and partly to its dominant "ownership" of land in the Jeneberang RB. It has a licensing section as well and negotiates directly with the regional BPDAS, discussed in the next paragraph.

Secondly, another agency, the regional BPDAS Jeneberang-Walanae[46], is mandated to regulate the use of forested watersheds, but appears to have little authority over strong agencies such as Inhutani (Ministry of Forestry-owned Plantations Company which plants and fells teak and other plantations). Moreover, there seems to be some duplication and overlap of responsibilities between this BPDAS and the Provincial Dinas Kehutanan (for instance in reforestation for which the BPDAS receives funding), not helped by the fact that the Provincial Dinas reports to the Governor and the BPDAS reports to a central government agency.

To improve the effectiveness of watershed conservation in South Sulawesi, a forum of interested parties has been recently set up by BPDAS. Its 100 members include representatives from

[45] There were originally 8 UPTDs but much of their work has been allocated to the various Kabupaten Dinas Kehutanan under the *otonomi daerah* program.

[46] Regional Office of Watershed Management reporting to DG Land Rehabilitation and Social Forestry Affairs in the Ministry of Forestry.

Hasanuddin University, SS Dinas PSDA, both BPDAS[47], SS Dinas Kehutanan, SS Dinas Pertambangan and Energy (Mineral Resources and Energy Services), SS BAPEDALDA, Proyek Induk PWS Jeneberang and several NGOs. Unfortunately, its work area is very large, covering the whole of South Sulawesi Province, so its ability to be effective, for example, in the Jeneberang River basin will be limited. One solution to this problem would be to form, as already suggested by the Directorate General of Land Rehabilitation and Social Forestry Affairs, a Local Watershed Forum or Committee to deal specifically with Jeneberang River basin. The Study Team might prefer, as Chairperson of this local forum, a senior official from provincial Dinas Kehutanan or even BPDAS, rather than Kabupaten Gowa, because of the contentious issue of Jeneberang River basin governance.

The fact of the strong Kabupaten Gowa Dinas Kehutanan is a result of the present *otonomi daerah* legislation and will be difficult to unwind. The apparent overlap and lack of communication between BPDAS and SS Dinas Kehutanan is a structural problem both functionally and organizationally. Considering the particular importance of effective watershed conservation to water supply in the Jeneberang River basin, the above problems should be urgently addressed.

The South Sulawesi Office of Energy and Mineral Resources would, for the present, regulate the issue and use of licenses for ground water consumption. However, as already mentioned, the Study Team is recommending (in line with the WATSAL agenda) that ground water should be managed and regulated by the agency responsible for surface water, that is MPW (under the new Water Law No. 7/2004) so that all WRM is under the same agency. At provincial level, ground water would then be regulated by SS Dinas PSDA. Finally, it is recommended that the regulation of sand-mining within river control areas should also pass from MEMR to MPW so that in the Jeneberang River basin SS Dinas PSDA would undertake this task. This would include the issue of sand-mining licenses, and enforcing their use. This arrangement is in line with international practice.

(3) River Basin Operation and Service Provision

In line with varying practice in other PJT-managed river basins, the PJT J will be assisted in the in-stream management of the Jeneberang RB by the Dinas PSDA's UPTD or technical implementation unit, the Jeneberang SWS Balai PSDA[48]. PJT Jeneberang will manage water resources and distribute water to users and consumers in its selected 5 rivers as explained in section I6.4. The Balai PSDA will undertake similar tasks in the remaining rivers. A comparison of PJT Jeneberang tasks with those of Balai PSDA is given in Table I7.1. This table also includes the Study Team's understanding of the similar position in the Brantas and Citarum river basins.

[47] Jeneberang-Walanae and Saddang-Makale
[48] The working area of the Jeneberang SWS Balai PSDA comprises the Pangkajene Kepulauan, Maros, Gowa, Takalar, Jeneponto, Bantaeng, Bulukumba, Sinjai, Selayar and Makassar areas according to Governor Decree No. 212/2001.

It should be noted that the Jeneberang SWS Balai PSDA is still, two years after operations began, in start-up training/data collection mode and will be unable to execute its full legal responsibilities for the foreseeable future (see section I3.2).

At present, the Water Resources Services of the Kabupaten Gowa and Takalar are filling the gap, if only partially. Collaboration between these two services is said to be good, except for the distribution of inadequate water to Takalar irrigation systems in the dry season.

(4) Infrastructure Development and Major Rehabilitation

PJT Jeneberang and Balai PSDA will be responsible for O&M and minor rehabilitation (funds permitting) work in the Jeneberang RB. They will call upon the Dinas PSDA (which in the absence of further Proyek Induk or PIRASS funding would have to apply to MPW) for assistance in any major rehabilitation or development work. Except in emergencies, such work would normally be carried out according to the current Master Plan.

(5) WRM Coordination and Stakeholder Participation

The coordination of WRM in the JRB is described in sections I3.4 and I3.5. The two coordinating committees, PPTPA[49] at river basin level, and the provincial PTPA[50] are established but are not fully functional. The committees were formed to assist the planning and regulation of WRM (especially raw water allocation and quality) at river basin and provincial levels and to advise the Governor accordingly. Both committees have some, but insufficient, stakeholder representation. This deficiency should be put right when the committees are converted to Water Resource Councils after the formation of the National Water Resources Council. PJT J should advise (with Dinas PSDA and Balai PSDA respectively) both committees/councils on matters concerning its own activities and should implement decisions of the PTPA within its jurisdiction.

A particular task of the PTPA will be to agree, based on recommendations from PPTPAs, the annual framework of water rights (including irrigation water supply) in the Jeneberang River basin; and then ensure through bodies such as PJT Jeneberang and Balai PSDA that water allocations are in accordance with these. Unfortunately, the GR on Water Use Rights, which will regulate the application of these rights, is unlikely to be issued before the end of 2005.

It is recommended that a small stakeholder committee should be formed to meet regularly with, and advise, the PJT Jeneberang Operations Director on decisions and issues concerning Jeneberang RB and its service areas.

[49] Panitia Pelaksana Tata Pengaturan Air – River Basin Water Resources Coordination Committee.
[50] Panitia Tata Pengaturan Air – Provincial Water Resources Coordination Committee

## I8 Implementation/Capacity Development Plan

The objective of the Capacity Development Plan in the institutional sub-sector is to educate selected senior managers and others who will execute procedures in this sub-sector, in the theory and practice of organizational structuring, job analysis, staff planning and budgeting, and personnel administration. The program will therefore concentrate on some matters (except for staff planning and budgeting, and personnel administration) that will be probably undertaken and certainly decided in the PJT I head office in Malang.

However, as part of management education and training, these subjects should be taught to senior personnel and practiced by them in a study environment. It would be beneficial if the basic tenets of good management could be included as well. (This training course should interface seamlessly with that on business planning.) Exercises to be practiced on the course would include the preparation of job descriptions and employee specifications for the more important functional jobs identified for PJT Jeneberang's start-up organization.

The more routine work of staff planning and budgeting, and personnel administration (referred to here as human resources administration – HRA) will be of more direct relevance to PJT Jeneberang managers and staff and is given sufficient training time as shown below.

Heads of water services divisions and bureaus, and the lone member of the HR Section should therefore attend classroom lectures and practical exercises on:

(i) Organizational planning and development;
(ii) Job analysis/planning and job descriptions/employee specifications;
(iii) Staff planning and budgeting, and the development of staff establishments.

This course would last for 14 working days or three weeks elapsed time.

The second course on HRA would be for the lone member of the HR section and the head of the Administration and Finance Bureau. However, heads of divisions and bureaus should attend some sessions, notably those on performance appraisal and promotion.

Classroom lectures and practical exercises would examine and teach PJT I HRA policies and procedures on:

(i) Staff recruitment and posting;
(ii) Salary and allowances system and payment system;
(iii) Personnel records and MIS;
(iv) Performance appraisal and promotion;
(v) Discipline and dismissal;
(vi) Leave;
(vii) Outsourcing work;
(viii) Document control.

Classroom and practical work would require an estimated 18 working days (25 calendar days). The work should include the critical appraisal of existing documents and the development of improvements, including those recommended in Supporting Report M. In addition to the classroom time, a further 21 working days of on-the-job training has been allocated after PJT Jeneberang starts operations in January 2007.

The trainer would be a suitably qualified PJT I expert (or experts) retained for 75 calendar days in three tranches. It is recommended that he/she should be assisted by a suitably experienced academic from (say) Hasanuddin University, who could provide additional insights and maybe a wider experience.

More detail can be found in Supporting Report N.

# *Tables*

## Table I5.1 Rivers Selected for Management by Public Corporation

| 1st Order River | 2nd Order River | 3rd Order River | Length (km) | Catchment Area at Confluence (km²) | % | Infrastructure & Measuring Stations |
|---|---|---|---|---|---|---|
| **Jeneberang** | | | **85.50** | **762.01** (at river mouth) | **100.0** | Rubber Dam<br>Kampili Weir (10,545 ha)<br>Bissua Weir (10,758 ha)<br>Bili-Bili Weir (2,360 ha)<br>Bili-Bili Multipurpose Dam<br>Raw Water Transmission Main<br>Hydrological Gauging Station (6)<br>Sabo Dams/Sand Pocket Dams (6) |
| | **Long Storage** | | **4.50** | **15.76** | **2.1** | Flushing Gate<br>Intake Gate<br>Tidal Gate |
| | Garassi | | 16.47 | 45.32<br>10.75 | 5.6 | |
| | | Burunguntea | 6.04 | 27.10 | 1.4 | |
| | | Salo Bontorea | 5.06 | | 3.6 | |
| | Salo Tetebatu | | 6.57 | 6.33 | 0.8 | |
| | **Jenelata/Sapaya** | | **38.45** | **232.69** | **30.5** | Hydrological Gauging Station (3) |
| | (Largest Tributary) | Bela Punrangan | 9.21 | 11.28 | 1.5 | |
| | | **Binanga Tokka** | **24.26** | **77.53** | **10.2** | |
| | | Munggunturu | 6.47 | 13.27 | 1.7 | |
| | | Balang Kampala | 10.44 | 32.64 | 4.3 | |
| | | B. Pateteang | 5.26 | 29.95 | 3.9 | |
| | | Tallanggantarang | 6.55 | 13.50 | 1.8 | |
| | Binanga Jajang | | 9.73 | 22.43 | 2.9 | |
| | Jene Rakikang | | 19.16 | 41.24 | 5.4 | |
| | | Bulu Tanetelang | 5.26 | 8.14 | 1.1 | |
| | | Parigi/Asana | 3.26 | 17.23 | 2.3 | |
| | Binanga Bengo | | 6.62 | 14.23 | 1.9 | |
| | Salo Bengo | | 8.48 | 22.55 | 3.0 | |
| | | Salo Patene | 8.66 | 8.88 | 1.2 | |
| | **Salo Malino** | | **18.67** | **85.89** | **11.3** | Sabo Dam No.6 |
| | | Salo Ahuwa | 6.53 | 16.69 | 2.2 | Hydrological Gauging Station (1) |
| | | Salo Bulang | 9.96 | 17.95 | 2.4 | |
| | Salo Angasia | | 5.63 | 5.36 | 0.7 | |
| | **Kausisi** | | **18.91** | **37.50** | **4.9** | Sabo Dam No.8 |
| | | Salo Kanipa | 4.10 | 8.39 | 1.1 | |
| TOTALS =**1** | 14 (**3 selected**) | 14 (**1 selected**) | **190.29** | --- | --- | 17 – Major Infrastructures<br>10 – Hydrological Stations |

TOTAL RIVER BASIN CATCHMENT AREA = 762.01 km²

Source: Interim Report Table 10.1

**Notes:** 1. Criteria for selecting rivers and river infrastructure to be managed by PJT Jeneberang:

a) 1st, 2nd, and 3rd order rivers with a sub-catchment area more than or close to 10 % of the total river basin area, or other significant features
b) Large dams and weirs irrigating > 500 ha of potential area
c) Other significant infrastructure and measuring stations (Kausisi)
d) Long Storage is considered to be part of the Jeneberang River

2. Drainage infrastructure and waterways for Makassar City currently managed by Proyek Induk are excluded. They should be transferred to Makassar City Dinas Cipta Karya as already instructed.
3. Bold letters and shaded figures are for selected rivers.

# Table I6.1 PJT Jeneberang: Allocation of Employees at the End of 5 Years (2007-2011)

| | Job Title | Technical & | Water Services Division I | | | Water Services Division II | | | | **Total** | PNS | Non PNS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Adminstrative | Div Off. and | SubDiv I-1 | SubDiv I-2 | Division Office | SubDiv II-1 | SubDiv II-2 | | | | |
| | | Support | General Affairs | Dam O&M | Upstream O&M | | Weir O&M | R. Dam/L.S.O& | Downstream O&M | | | |
| | Location of premises ----> | Proyek Induk | Bili-Bili Dam | | | Proyek Induk | | | | | | |
| 1 | Head of Operations Directorate | 1 | | | | | | | | **1** | 1 | 0 |
| 2a | Head of Technical Bureau | 1 | | | | | | | | **1** | 1 | 0 |
| 2b | Head of Adm. & Finance Bureau | 1 | | | | | | | | **1** | 1 | 0 |
| 2c | Legal Advisor | 1 | | | | | | | | **1** | 1 | 0 |
| 2d | Head of Water Service Division | | 1 | | | 1 | | | | **2** | 2 | 0 |
| 3a | Head of Program Section | 1 | | | | | | | | **1** | 1 | 0 |
| 3b | Head of HR Section | 1 | | | | | | | | **1** | 1 | 0 |
| 3c | Head of OM & Environment Section | 1 | | | | | | | | **1** | 1 | 0 |
| 3d | Head of Finance Section | 1 | | | | | | | | **1** | 1 | 0 |
| 3e | Head of General Affairs Section | 1 | 1 | | | | | | | **2** | 2 | 0 |
| 3f | Head of Sub-Division | | | 1 | 1 | | 1 | | 1 | **4** | 4 | 0 |
| 4a | Engineering Staff (2) | 1 | | | | | | | | **1** | 3 | -2 |
| 4b | Water Quality Analyst / Hydrologist | 1 | | 1 | | | | | 1 | **3** | 0 | 3 |
| 4c | Survey & Equipment Staff | 1 | | | | | | | | **1** | 1 | 0 |
| 4d | Administration Staff (2) | 2 | | | | | | | | **2** | 0 | 2 |
| 4e | Finance/Accounting Staff | 1 | | | | | | | | **1** | 1 | 0 |
| 4f | Computer Engineer | | | 1 | | | | | | **1** | 0 | 1 |
| 4g | Public Relations Coordinator | 1 | | | | | | | | **1** | 0 | 1 |
| 4h | Structural Engineer | 1 | | | | | | | | **1** | 3 | -2 |
| 4i | Telecommunication Engineer | | | 1 | | | | | | **1** | 0 | 1 |
| 4j | Geologist/Soil Mechanic/Engineer | 1 | | | | | | | | **1** | 0 | 1 |
| 4k | Geologist | | | | | | | | | **0** | 0 | 0 |
| 4l | Reforestation Specialist **[[for Dinas Forestry]]** | | | | | | | | | **0** | 0 | 0 |
| 4m | Irrigation Engineer (Staff) | | | | | | 1 | | | **1** | 0 | 1 |
| 4n | Mechanical/Electrical Engineer (Staff) | 1 | | | | | | | | **1** | 2 | -1 |
| 4o | Hydraulic Engineer | | | | | | | | 1 | **1** | 1 | 0 |
| 5a | Field Inspector/Warning Crew | | | 1 | 1 | | | | 1 | **3** | 0 | 3 |
| 5b | Spillway Spv & Gate Operator | | | 4 | | | 6 | 4 | | **14** | 0 | 14 |
| 5c | Telecommunications | | | | | | | | | **0** | 0 | 0 |
| 6a | Mechanics | | | | | | | | | **0** | 0 | 0 |
| 6b | Computer Operator/Typist | 2 | 1 | 1 | 1 | 1 | | | 1 | **7** | 0 | 7 |
| 6c | Office Boy/Girl | 2 | | | | | | | | **2** | 0 | 2 |
| 6d | Security **[[subcontracted]]** | [3] | [6] | | | | | | | **0** | 0 | 0 |
| 6e | Drivers | 3 | 2 | 3 | 3 | 3 | 2 | | | **16** | 0 | 16 |
| 6f | Sampling Staff | 2 | | | | | | | | **2** | 0 | 2 |
| 6g | Draftsman **[[replaced by computer engineer]]** | | | | | | | | | **0** | 0 | 0 |
| | **TOTAL** | **28** | **5** | **13** | **6** | **5** | **10** | **4** | **5** | **76** | **27** | **49** |
| | | | | | | | | | | | | **76** |
| | | | | | | | | | | | | |

## Table I6.2 Job Description / Employee Specification for: PJT Jeneberang Operations Director

| | | |
|---|---|---|
| **1.** | **Position:** | PJT Jeneberang Operations Director |
| **2.** | **Reports to:** | PJT I Board of Directors |
| **3.** | **Immediate subordinates:** | Head of Water Services Division I<br>Head of Water Services Division II<br>Head of Technical Bureau<br>Head of Administration and Finance Bureau |

**4. Purpose of job:**

(i) To improve river basin management (RBM) and level of O&M to the norm[1] in rivers selected for PJT Jeneberang.

(ii) To become self-financing by improving financial performance and developing all revenue sources.

(iii) To conserve river environment.

(iv) To develop an effective and efficient working environment to reduce costs and deliver planned levels of service.

(v) To develop and maintain the required relations with regional governments, customers, major stakeholders and the community a) in the Jeneberang River basin and b) in the service areas.

(vi) To develop private sector participation (PSP) where appropriate.

**5. Specific responsibilities:**

(i) Assisting Board of Directors (BOD) to formulate policy; disseminating policy to immediate subordinates and ensuring that it is carried out.

(ii) Planning, controlling, coordinating and supervising the activities of his / her immediate subordinates.

(iii) Promoting and encouraging among all his / her subordinates, the motivation to quality, efficiency and effectiveness.

(iv) Ensuring that all BOD decrees, procedures, instructions are disseminated and complied with.

(v) In the Water Services Divisions to:

- ensure that in each WS divison's working area: necessary O&M is performed, water is distributed to users, land and water use and C-class mining is commercialized and that the necessary technical recommendations are made;
- ensure that fees are collected;
- ensure that services are extended to the community.

(vi) In the Technical Bureau to:

- ensure preparation and controlled implementation of RKAP (Corporate Work Plan Budget) and RKOP (Corporate Work Plan Operations), including the necessary investment plan to support

[1] "Normal" annual O&M cost of river infrastructure is defined as the estimated required accumulated annual O&M cost of each facility and river, including management. This annual O&M cost is based on (i) field reconnaissance, (ii) interview survey and (iii) the actual status of river infrastructure.

a) O&M of WR infrastructure, b) river basin management, c) WR commercialization, and d) WR infrastructure rehabilitation;
- ensure conduct of surveys / investigations for O&M purposes;
- ensure design and implementation of necessary construction work;
- ensure that river water quality is monitored and controlled.

(vii) In the Administration and Finance Bureau to:

- ensure that cash flow is planned and controlled and that all transactions are properly recorded and accounted for;
- ensure that planning, budgeting, monitoring and controlling capital and routine expenditure and revenue is properly undertaken, and that the necessary financial reports are prepared and circulated;
- ensure that taxes are collected and paid;
- ensure that all HR administrative procedures are properly carried out and the necessary HR records are maintained;
- ensure that the remuneration system is properly operated and that performance assessments are correctly undertaken;
- ensure that all HRD procedures are correctly undertaken, and that TNAs are regularly carried out by managers;
- ensure that the various administrative services are properly delivered, namely: office, protocol, public relations, maintenance of buildings and other owned assets, health and safety, procurement, inventory and storage, and transport.
- ensure that an asset register is maintained

**6. Common management responsibilities:**

(i) Maintenance of organization structure, efficient staffing levels
(ii) Development of subordinates
(iii) Delegation of authority to subordinates to undertake their responsibilities [where not already specified]
(iv) Coordination of supervised groups
(v) Cooperation with related groups
(vi) Appraisal of immediate subordinates' performance for training, promotion
(vii) Use of advisers where necessary
(viii) Communication with superiors and subordinates
(ix) Development of improved processes and procedures
(x) Public / community relations
(xi) Being aware of and conforming to the legal and social environment

**7. Particular cooperation / coordination with:**

(i) Water Services Units of: South Sulawesi Provincial Government and relevant Kabupaten / Kota Governments
(ii) Proyek Induk PWS Jeneberang, PIRASS

**8. Limits to authority[2]:**

(i) Approval of revenue / expenditure / capital budgets: only by BOD decision.

(i) Recruitment of staff at any level: only by BOD decision.

(ii) Expenditure commitment (e.g procurement of goods and services): according to BOD Decree No. KP.046/KPTS/DA/2004.

(iv) Authority to give advance payments: not more than Rp 15 million.

(iii) Authority to give public statements on behalf of PJT I: according to BOD Decree No. KP.019/KPTS/DA/2002.

(iv) Authority to issue technical recommendations: according to BOD Decree No. KP.018/KPTS/DA/2002.

(iv) Signing authorities: according to BOD Decree No. KP.020/KPTS/DA/1999.

(v) Authority to deal with complaints from stakeholders / clients: according to BOD Decree No. KP.117/KPTS/DA/2003

(vi) [Other]

**9. Job holder specification:**

(i) Qualifications required:
- Education: S-1
- Stratum: A-c (?)

(ii) Experience required:
- Minimum 12 years (?)
- Minimum 3 years (?) as Head of Water Services Division, Technical Bureau or Administration and Finance Bureau, or in a comparable or more senior position elsewhere

(iii) Particular personal characteristics required:
- Proven managerial ability
- Minimum IQ of 105 (enough?)

(iv) Training
- Finance Management for Non-Finance Officials
- Strategic Planning
- Corporatization of Water Resources Management
- Quality Awareness
- Selecting Potential Employees
- Use of Computer with Standard Programs
- Additional general and personnel management training

[2] These limitations are understood to be some of those currently applicable to PJT I Operations Directors. This list should be supplemented when the final version is established. Regarding recruitment and expenditure, two levels are usual: one within budget limits and one exceeding budget limits.

## Table I6.3 Possible Proforma Job Description/Employee Specification

**Position:**

**Reports to:**

**Immediate subordinates:**

**Purpose of job:**

**Specific responsibilities:**

[all main responsibilities - in sufficient detail for practical application]

**Common management responsibilities:**

- Maintenance of organization structure and efficient staffing levels
- Development of subordinates
- Delegation of authority to subordinates to undertake their responsibilities [where not already specified]
- Coordination of supervised groups
- Cooperation with related groups
- Appraisal of subordinates' performance for training, promotion
- Use of advisers where necessary
- Communication with superiors and subordinates
- Development of improved processes and procedures
- Public / community relations
- Aware of, and conforming to the legal and social environment

**Particular cooperation / coordination with:**

**Limits to authority [or any other limitation]:**

It is assumed that each job holder has sufficient authority to perform their tasks. Where this not so, limits are specified. Such limits can include:

- Recruitment [up to what level – within budget / more than budget]
- Expenditure commitment [e.g procurement of goods and services – up to what amount: within budget / more than budget]
- Advance payment [up to what amount: within budget / more than budget]
- Giving public statements
- Issuing technical recommendations
- Signing documents
- Other

**Job holder specification:**

- Qualifications required:
- Experience required: [years, types of experience]
- Particular personal characteristics required:

# Table I6.4 PJT Jeneberang: Employee Allocation during The First Year of Operation (2007)

| | Job Title | Technical & | Water Service Division I | | | Water Service Division II | | | | **Total** | PNS | Non PNS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Adminstrative | Division Office | SubDiv I-1 | SubDiv I-2 | Division Office | SubDiv II-1 | SubDiv II-2 | | | | |
| | | Support | & Gen Aff Sec | Dam O&M | Upstream O&M | | Weir O&M | R.Dam/L.S.O&M | Downstream O&M | | | |
| | Location of premises --> | Proyek Induk | Bili-Bili Dam | | | Proyek Induk | | | | | | |
| 1 | Head of Operations Directorate | 1 | | | | | | | | **1** | 1 | 0 |
| 2a | Head of Technical Bureau | 1 | | | | | | | | **1** | 1 | 0 |
| 2b | Head of Adm. & Finance Bureau | 1 | | | | | | | | **1** | 1 | 0 |
| 2d | Head of Water Service Division | | 1 | | | 1 | | | | **2** | 1 | 1 |
| 3a | Head of Program Section | 1 | | | | | | | | **1** | 1 | 0 |
| 3d | Head of Finance Section | 1 | | | | | | | | **1** | 1 | 0 |
| 3e | Head of General Affairs Section | 1 | 1 | | | | | | | **2** | 1 | 1 |
| 3f | Head of Sub-Division | | | 1 | | | 1 | | | **2** | 2 | 0 |
| 4a | Engineering Staff | 1 | | | | | | | | **1** | 1 | 0 |
| 4b | Water Quality Analyst | | | | | | | | | **0** | 0 | 0 |
| 4d | Administration Staff | 2 | | | | | | | | **2** | 0 | 2 |
| 4e | Finance/Accounting Staff | 1 | | | | | | | | **1** | 1 | 0 |
| 4f | Computer Engineer | | | | | | | | | **0** | 0 | 0 |
| 4h | Structual Engineer | | | | | | | | | **0** | 2 | -2 |
| 4i | Telecommunication Engineer | | | 1 | | | | | | **1** | 0 | 1 |
| 4k | Geologist | | | | | | | | | **0** | 0 | 0 |
| 4n | Mechanical/Electrical Engineer | 1 | | | | | | | | **1** | 2 | -1 |
| 5a | Field Inspector/Warning Crew | | | 1 | | | | | | **1** | 0 | 1 |
| 5b | Spillway Spv & Gate Operator | | | 4 | | | 6 | 4 | | **14** | 0 | 14 |
| 5c | Telecommunications | | | | | | | | | **0** | 0 | 0 |
| 6a | Mechanics | | | | | | | | | **0** | 0 | 0 |
| 6b | Computer Operator/Typist/Secy. | 1 | 1 | 1 | | 1 | | | | **4** | 0 | 4 |
| 6c | Office Boy/Girl | 1 | | | | | | | | **1** | 0 | 1 |
| 6d | Security **[[subcontracted]]** | [2] | [3] | | | | | | | **0** | 0 | 0 |
| 6e | Drivers | 2 | 1 | 2 | | 2 | 1 | | | **8** | 0 | 8 |
| 6f | Sampling Staff | | | | | | | | | **0** | 0 | 0 |
| 6g | Draftsman **[[discontinued]]** | | | | | | | | | **0** | 0 | 0 |
| | **TOTAL** | **15** | **4** | **10** | **0** | **4** | **8** | **4** | **0** | **45** | **15** | **30** |

## Table I7.1 WRM Functions of PJT Jeneberang (Proposed), PJT I and PJT II Compared with Those of Balai PSDA

| Function/task | PJT Jeneberang + Balai PSDA | PJT I[1] + Balai PSDA | PJT II + Balai PSDA |
|---|---|---|---|
| **1. Watershed Management**<br>Multi-sector approach required involving in-stream and off-stream aspects. | **PJT J**<br>Proposed member of multi-sectoral watershed management committee to regulate use of watershed, led by Balai PDAS[2] in upstream / forested areas and by MOA for downstream areas. Should implement in-stream measures in own rivers.<br>**BPSDA**<br>Also member of the watershed management committee. Should implement in-stream measures in own rivers. | **PJT I**<br>No direct role.<br>**BPSDA**<br>No direct role. | **PJT II**<br>Collaboration with BPSDA and other agencies<br>**BPSDA**<br>Collaboration with PJT II and other agencies |
| **2. Water Quantity Management**<br>*2.1 Water Use Licensing*<br>Technical recommendations to grant / refuse applications according to annual water allocation plan. Decisions by South Sulawesi PWRS. | **PJT J**<br>In own 7 rivers. Installing water meters to monitor compliance.<br>**BPSDA**<br>In own rivers. Installing water meters to monitor compliance. [Regulation of PJT J for PWRS not recommended] | **PJT I**<br>In own 40 rivers.<br>**BPSDA**<br>Not known. | **PJT II**<br>In own 74 rivers plus tributaries. This is effectively all rivers in the Citarum river basin.<br>**BPSDA**<br>No role. |
| *2.2 Water Allocation*<br>Annual plan approved, by PPTPA[3] followed by PTPA[4]. | **PJT J**<br>Plans allocation of water to users in all rivers annually.<br>**BPSDA**<br>Provides data to PJT SS on water requirements. Assists with water allocation planning. | **PJT I**<br>Plans allocation in own rivers.<br>**BPSDA**<br>Plans allocation in own rivers. | **PJT II**<br>Plans allocation of water to users in all rivers annually.<br>**BPSDA**<br>No role |
| *2.3 Water Distribution*<br>Based on annual water allocation plan. | **PJT J**<br>Distributes to users in own 7 rivers.<br>No role in distributing water within irrigation schemes. O&M of relevant infrastructure.<br>**BPSDA**<br>Distributes water to users in remaining rivers based on annual plan. Liaises with PJT J on water needs. Distributes irrigation water, in feeder, primary and secondary trans-District / City canals. O&M of relevant infrastructure | **PJT I**<br>Distributes to users in own 40 rivers.<br>**BPSDA**<br>Distributes raw water to trans-kabupaten irrigation systems | **PJT II**<br>Distributes to users in all rivers.<br>Operates and maintains primary and most secondary canals.<br>**BPSDA**<br>No water distribution role.<br>Operates and maintains some secondary canals.<br>Responsible for some irrigation development. |

[1] Brantas River Basin only.
[2] Regional Office of Watershed Management, under DG Land Rehabilitation and Social Forestry Affairs in the Ministry of Forestry and Plantations (see text for comment).
[3] Panitia Pelaksana Tata Pengaturan Air (River Basin WR Coordination Committee).
[4] Panitia Tata Pengaturan Air (Provincial WR Coordination Committee).

**Table I7.1 WRM Functions of PJT Jeneberang (Proposed), PJT I and PJT II Compared with Those of Balai PSDA**

| Function/task | PJT Jeneberang + Balai PSDA | PJT I[1] + Balai PSDA | PJT II + Balai PSDA |
|---|---|---|---|
| *2.4 Raw Water Supply Tariff*<br>Provincial Government approves tariffs based on recommendations and negotiations with users. Authorized by Kimpraswil and Governor Decree (industry tariff) | **PJT J**<br>Based on financial study, recommends to South Sulawesi PWRS, raw water tariffs to specific users / consumers<br>**BPSDA**<br>No role | **PJT I**<br>Recommends raw water tariffs.<br>**BPSDA**<br>No role | **PJT II**<br>Recommends raw water tariffs for specific users / consumers. Not for irrigation water supply<br>**BPSDA**<br>No role. |
| **3. Water Quality Management**<br>*3.1 Effluent Discharge Licensing*<br>Approvals granted by Head of South Sulawesi BAPEDALDA | **PJT J**<br>Recommends and issues licenses for wastewater discharging to own 7 rivers. By compliance monitoring, supervises execution of license conditions. Imposes sanctions and penalties (when authority has been delegated by BAPEDALDA[5])<br>**BPSDA**<br>Recommends licenses for wastewater discharging to own rivers. Supervises execution of license conditions. Imposes sanctions and penalties (when authority has been granted by South Sulawesi BAPEDALDA). | **PJT I**<br>No role at present<br>**BPSDA**<br>No role | **PJT II**<br>Recommends and issues (after Governor's approval) licenses for wastewater discharge to all rivers. Supervises execution of license conditions.<br>**BPSDA**<br>No role. |
| *3.2 Water Quality Monitoring* | **PJT J**<br>Monitors water quality in own 7 rivers. Informs BPSDA and BAPEDALDA of substandard quality. Studies possible sources of pollution and helps to develop countermeasures.<br>**BPSDA**<br>Monitors water quality in own rivers. Informs BAPEDALDA of substandard quality. | **PJT I**<br>Monitors water quality in own 40 rivers.<br>**BPSDA**<br>Monitors water quality in own rivers. | **PJT II**<br>Monitors water quality in all rivers.<br>**BPSDA**<br>No role. |
| *3.3 Water Pollution Control* | **PJT J**<br>In-stream: ensuring adequate water flows for flushing.<br>Off-stream: 1) helping to implement legal / economic measures against polluters; 2) public / community education programs.<br>**BPSDA**<br>No major role. | **PJT I**<br>In-stream: ensuring adequate water flows for flushing.<br>Off-stream: 1) helping to implement legal / economic measures against polluters; 2) public / community education programs. | **PJT II**<br>In-stream: ensuring adequate water flows for flushing.<br>Off-stream: 1) helping to implement legal / economic measures against polluters; 2) public / community education programs.<br>**BPSDA**<br>No major role. |

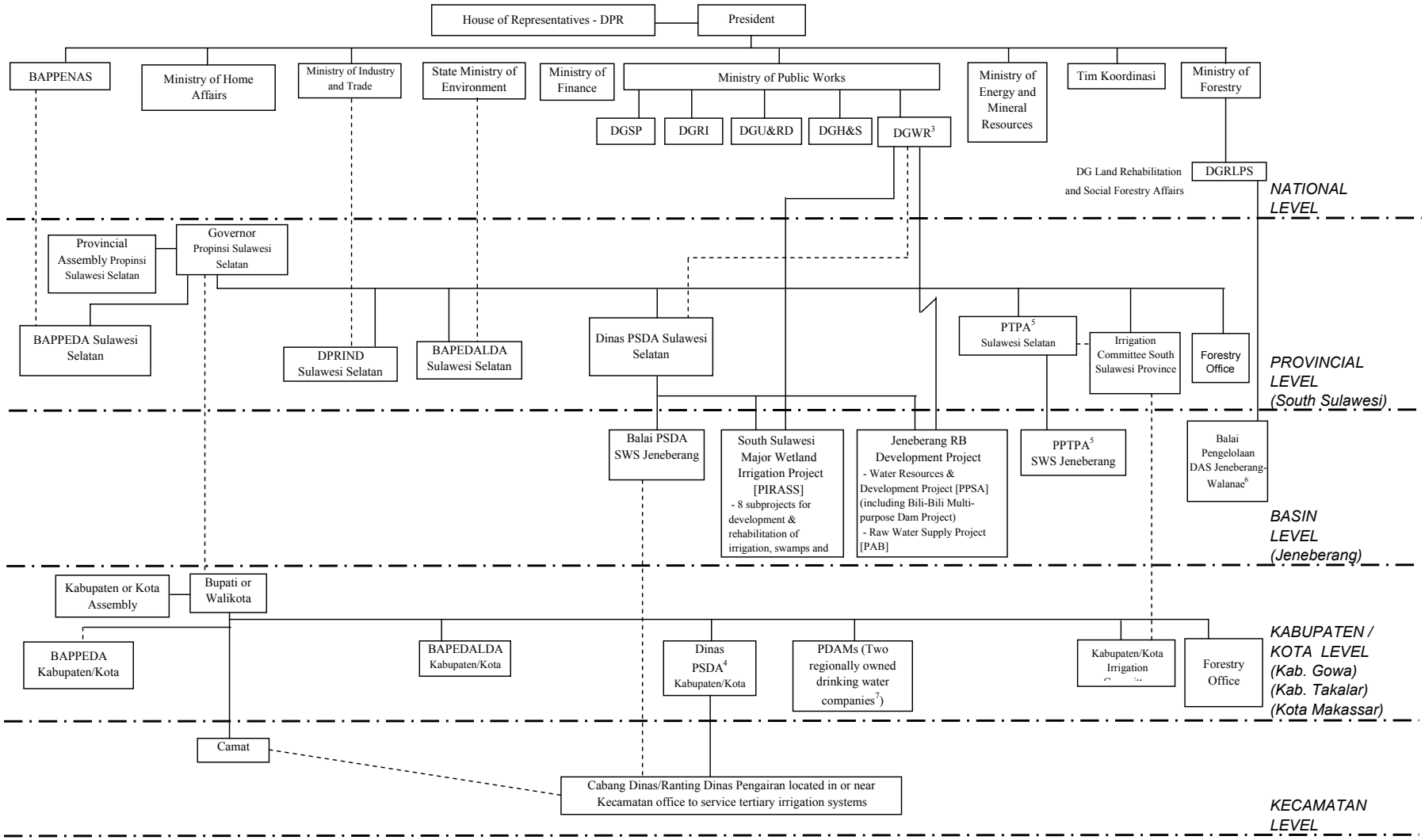
[5] The Study Team recommends that SS Bapedalda is assigned the necessary authority to enforce the current environmental legislation in the Province, including the conditions of effluent discharge licenses. Such authority would include the ability to impose sanctions and penalties for infringements of license conditions and to assign such authority to PJT I Jeneberang.

**Table I7.1 WRM Functions of PJT Jeneberang (Proposed), PJT I and PJT II Compared with Those of Balai PSDA**

| Function/task | PJT Jeneberang + Balai PSDA | PJT I[1] + Balai PSDA | PJT II + Balai PSDA |
|---|---|---|---|
| | | **BPSDA**<br>[No information] | |
| **4. Flood & Drought Management**<br>*4.1 Predicting flood and operating flood control facilities according to procedure.*<br>*4.2 Monitoring dyke damage.*<br>Executing or arranging repair.<br>*4.3 Drought Management* | **PJT J**<br>In own 7 rivers.<br>**BPSDA**<br>In own rivers. | **PJT I**<br>Flood management within SATKORLAK PBA[6] and SATLAK PBA[7].<br>Drought management with Provincial Office of Agriculture and Food Crops and District / City Governments.<br>**BPSDA**<br>Flood management: no role<br>Drought management: as PJT I. | **PJT II**<br>In all rivers<br>**BPSDA**<br>No role. |
| **5. River Area Management**<br>*5.1 River corridor maintenance.*<br>*5.2 Land use management plans* | **PJT J**<br>5.1 In own 7 rivers.<br>**BPSDA**<br>5.1 In own rivers. | **PJT I**<br>5.1 In own 40 rivers<br>**BPSDA**<br>5.1 In own rivers | **PJT II**<br>5.1 and 5.2 In 1st, 2nd and 3rd order rivers.<br>**BPSDA**<br>5.1 and 5.2 In 4th and higher order rivers. |
| **6. Water Resources Infrastructure Maintenance** | **PJT J**<br>One storage dam, one rubber dam and 15 other items of infrastructure in own 7 rivers. No rehabilitation and development role, which would be undertaken by Proyek Induk PWS Jeneberang.<br>**BPSDA**<br>Infrastructure in own trans-district / city rivers plus primary and secondary irrigation infrastructure in trans-district / city irrigation schemes | **PJT I**<br>In own 40 rivers. Also minor rehabilitation. No development role.<br>**BPSDA**<br>In own rivers. Also minor rehabilitation. No development | **PJT II**<br>In all rivers. No rehabilitation and development role.<br>**BPSDA**<br>No role. No rehabilitation and development role |
| **7. Master Planning**<br>Prepares master plans for main activities for which responsible. | **PJT J**<br>For whole river basin.<br>**BPSDA**<br>No role. | **PJT I**<br>For whole river basin.<br>**BPSDA**<br>No role | **PJT II**<br>For all river systems.<br>**BPSDA**<br>No role. |

[6] Provincial Disaster Coordination Implementing Unit
[7] District Disaster Management Implementing Unit

# *Figures*




**Notes:** 1. The chart presumes full implementation of "Otonomi Daerah"; hence there is no direct line of responsibility/command between Province and Kabupaten/Kota levels.
3. Director General of Water Resources.
4. Because of irregular otonomi daerah implementation, different WR organizations exist at Kab/Kota level: Dinas PSDA (managing 3 WRM sub-dinas) - Kab. Gowa; Dinas PU + Sub Dinas Pengairan - Kab. Takalar.
5. After formation of National Water Resources Council, proposed replacements for PTPA and PPTPA are believed to be Provincial Water Resources Councils and River Basin Water Resources Councils
6. Balai PDAS Jeneberang-Walanae is one of the two Regional Offices of Watershed Management in South Sulawesi Province. (The other is Balai PDAS Saddang-Makale)
7. Makassar PDAM and Gowa PDAM

**Figure I1.1 Outline of Existing Governmental Water Sector Organization for the Jeneberang River Basin**


**Figure I3.1 Organization Chart of Water Resources Management Services of South Sulawesi**

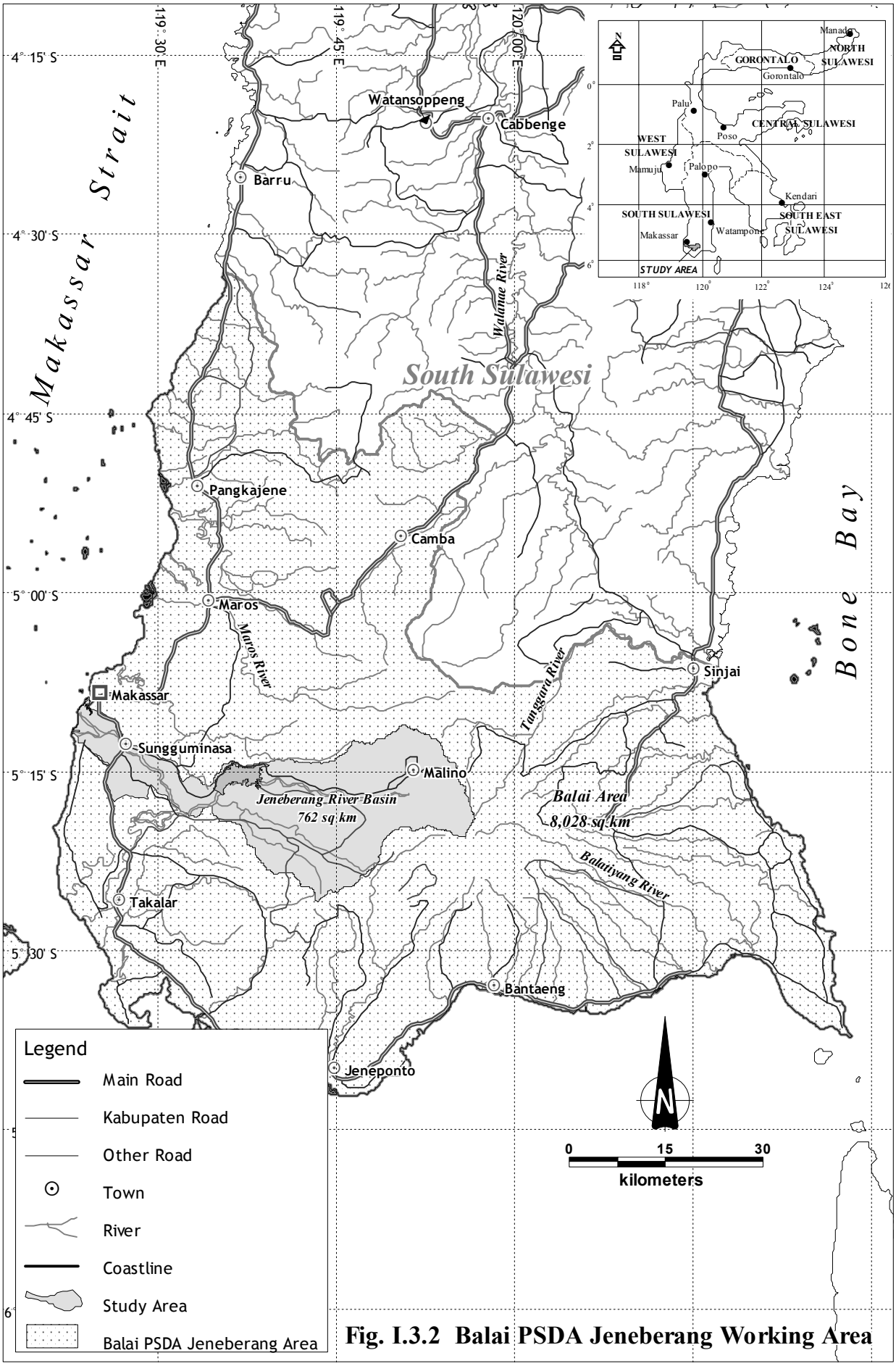



**Fig. I.3.2 Balai PSDA Jeneberang Working Area**

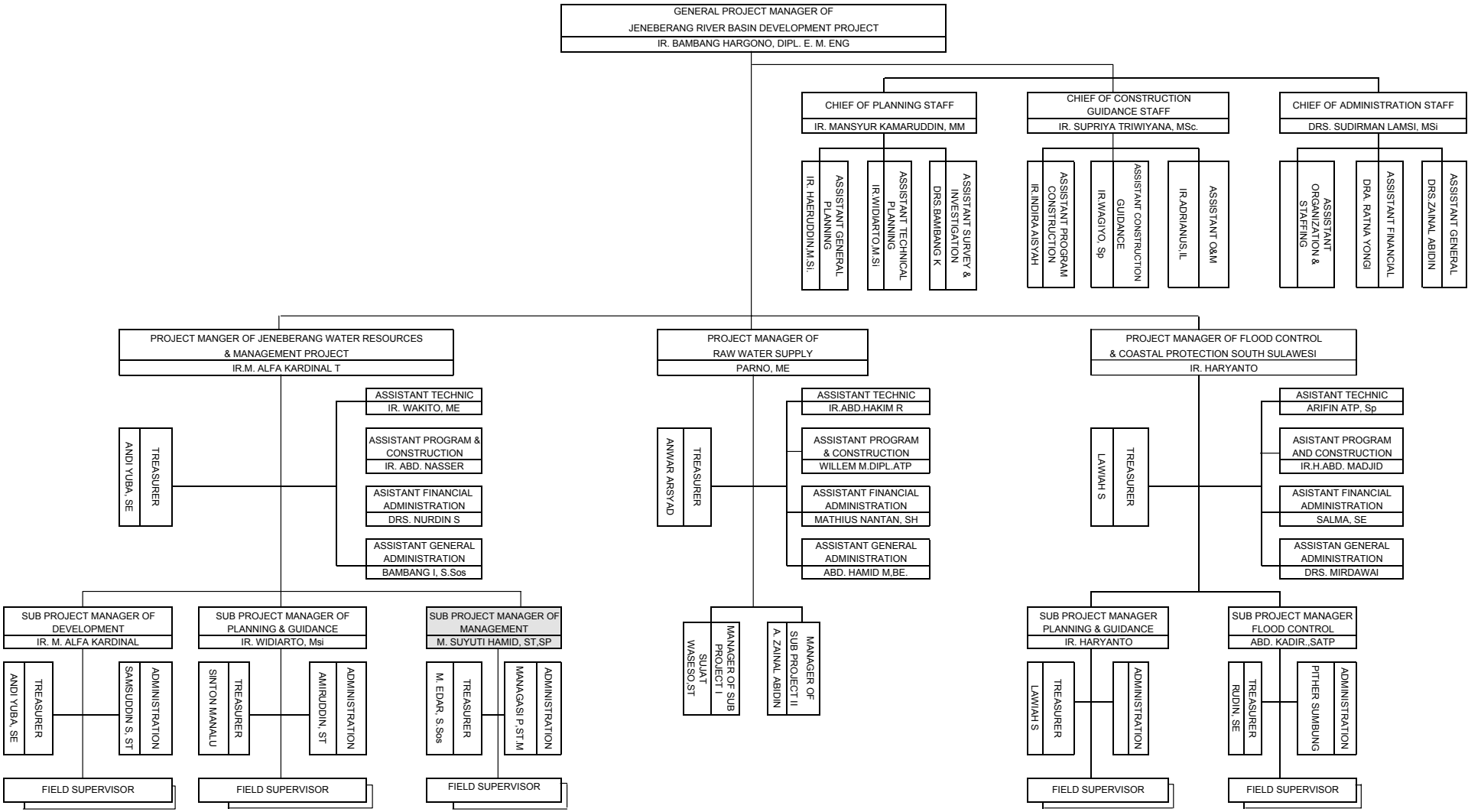



**Figure I4.1 Organization Chart of Jeneberang River Basin Development Project**

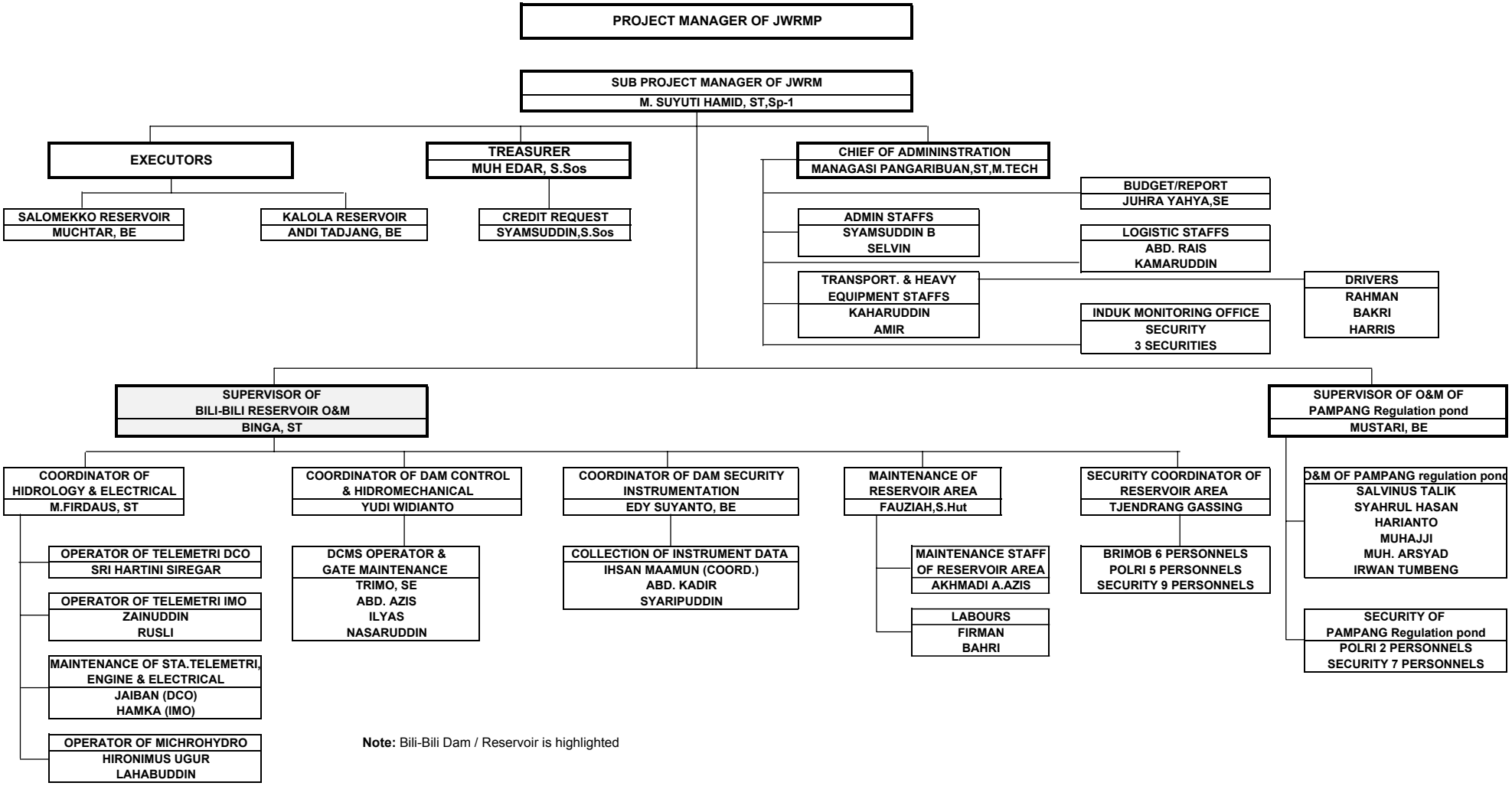





**Figure I4.2 Organizational Structure of Jeneberang Water Resources Management Sub-Project (2004)**

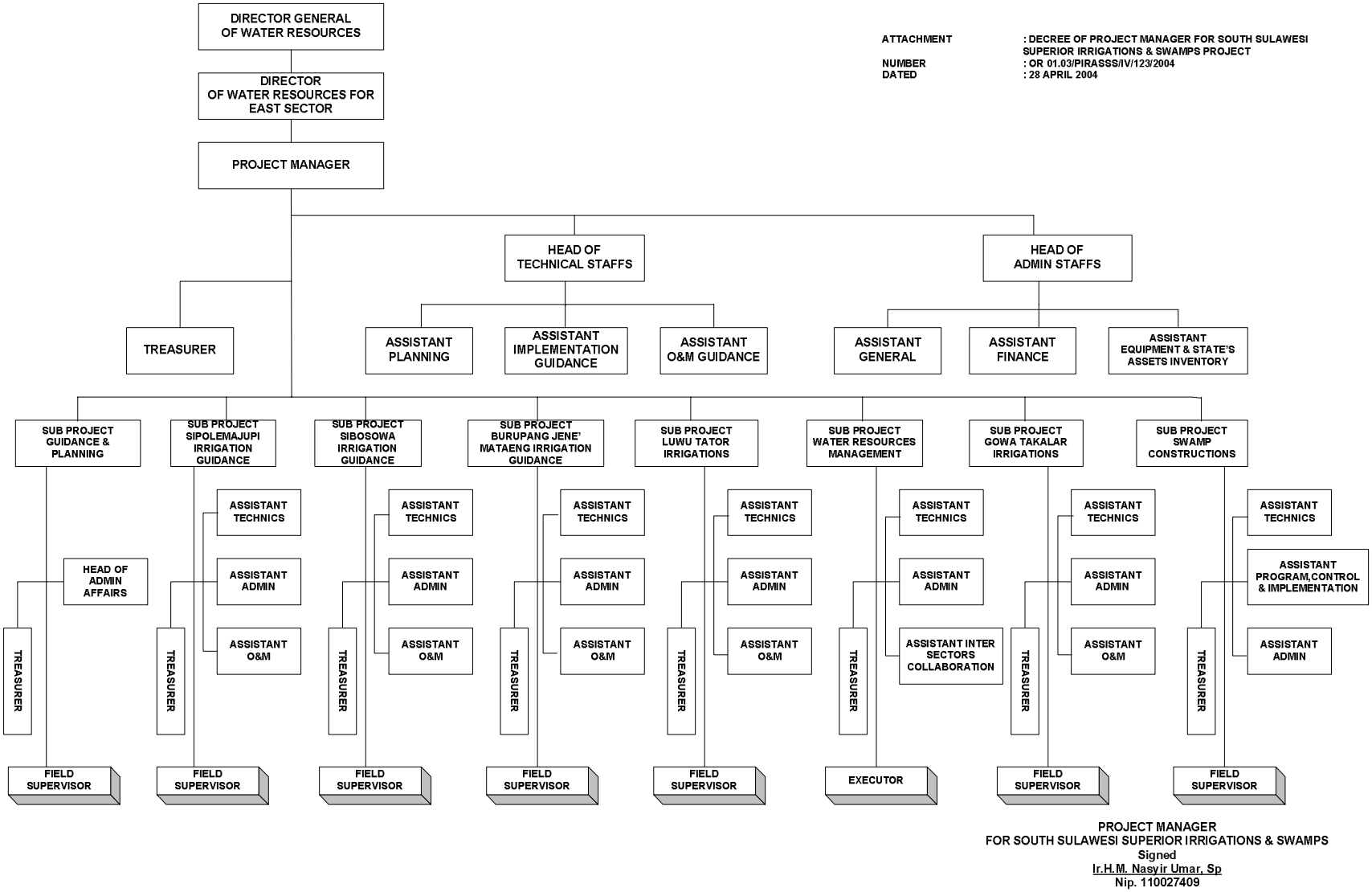



**Figure I4.3 Organization Chart of South Sulawesi Prominent Irrigation and Swamp Projects (PIRASS)**

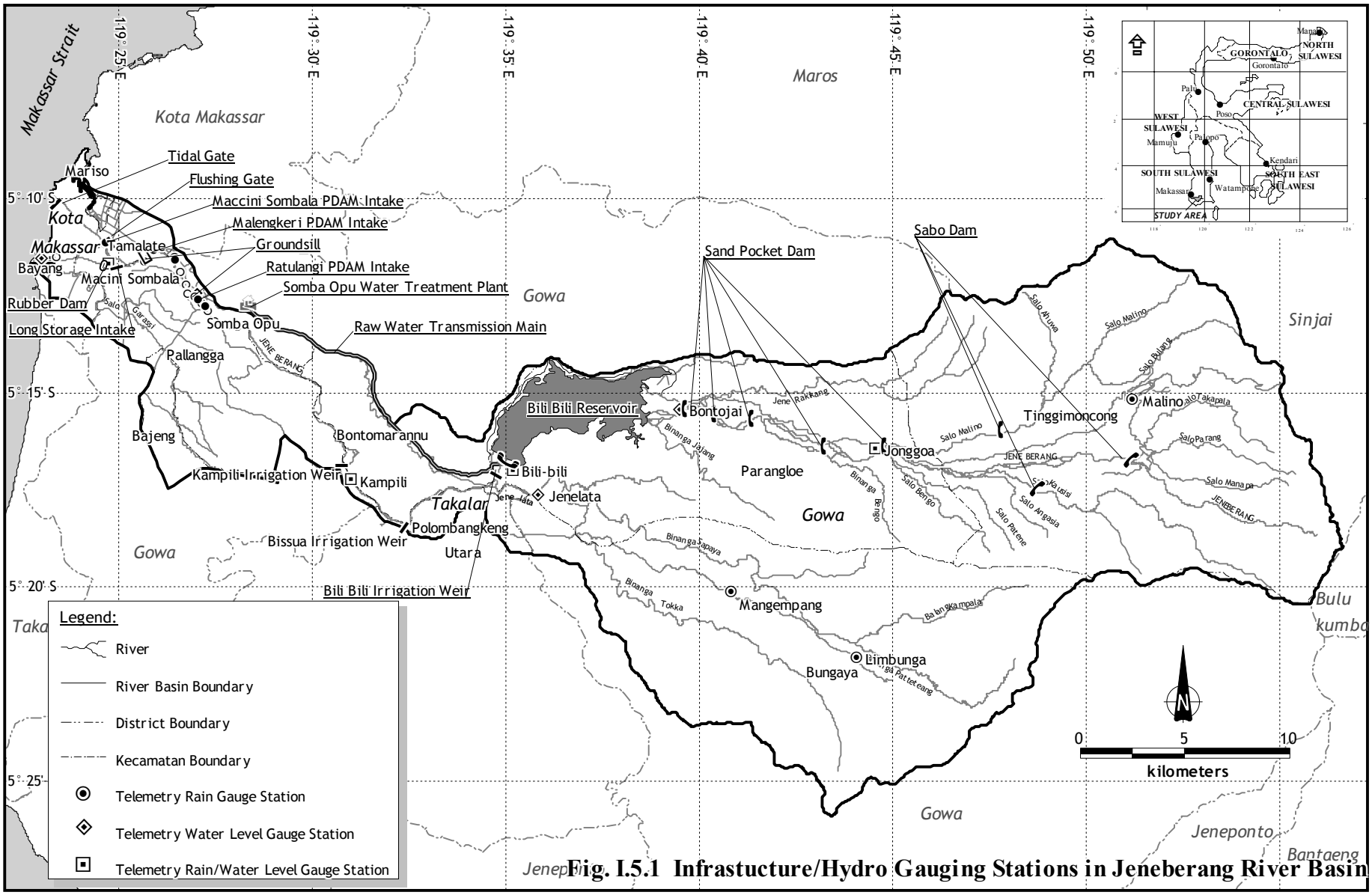



**Fig. I.5.1 Infrastucture/Hydro Gauging Stations in Jeneberang River Basin**

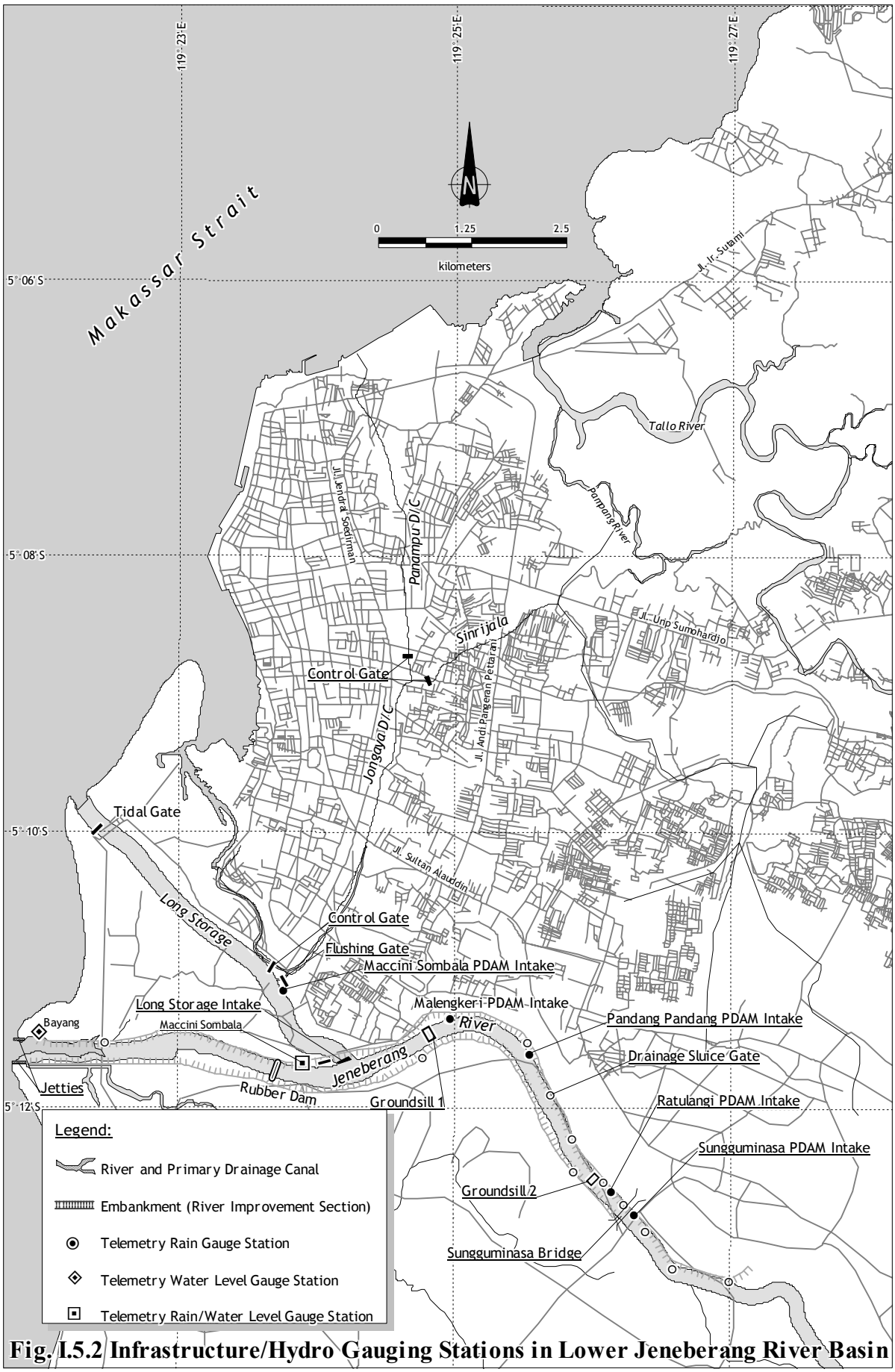



**Fig. I.5.2 Infrastructure/Hydro Gauging Stations in Lower Jeneberang River Basin**

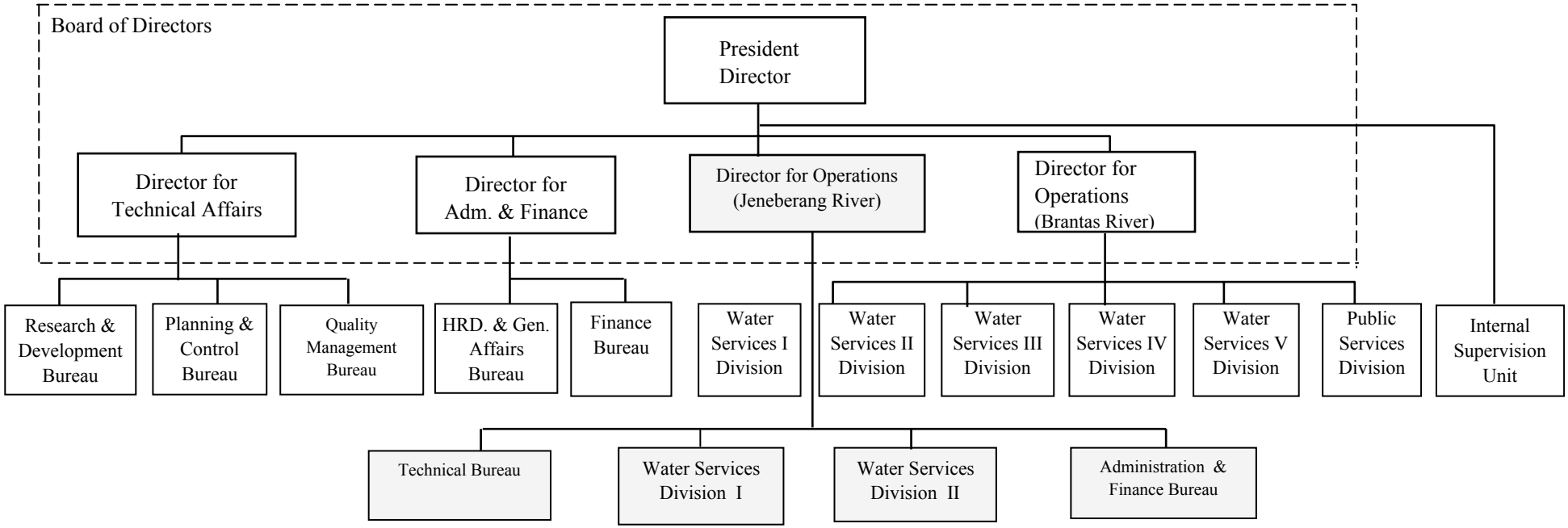
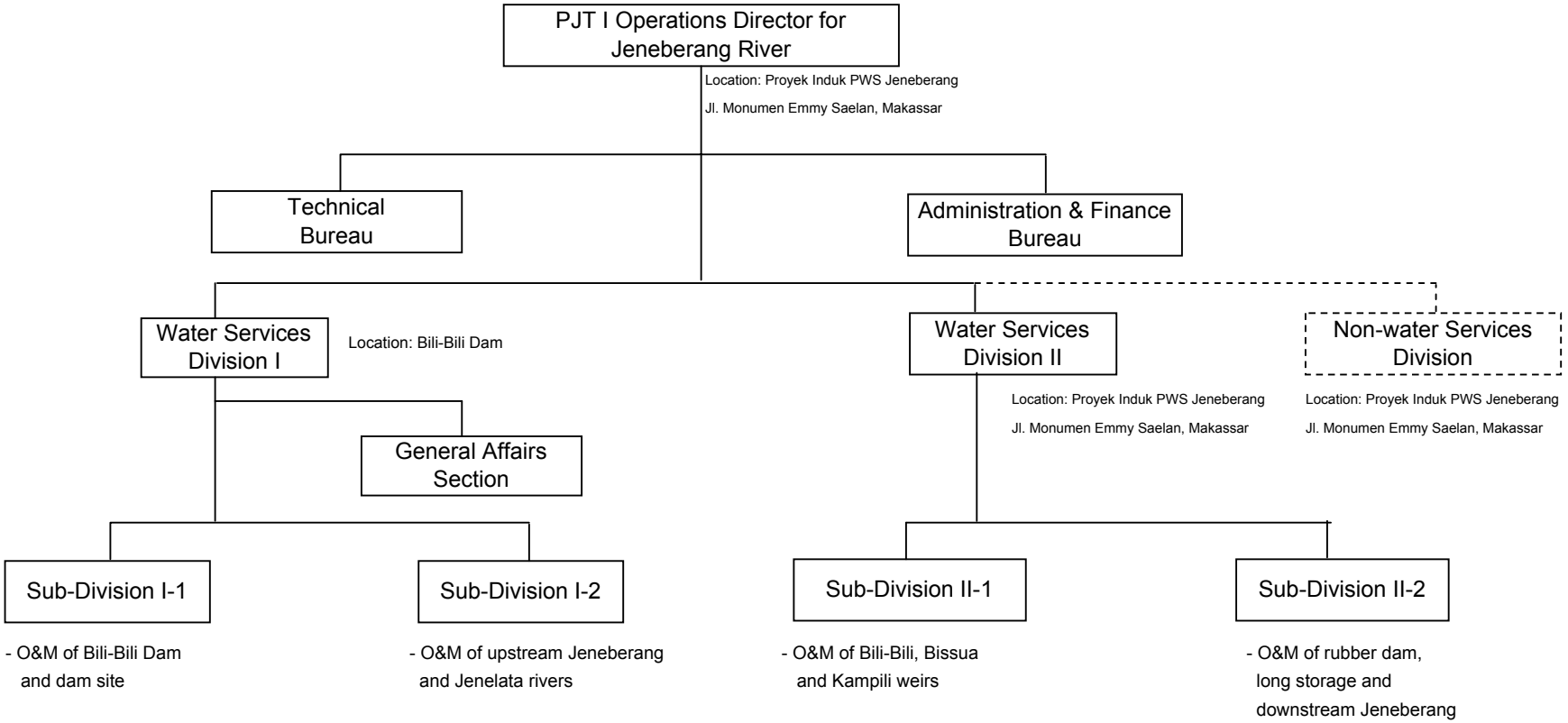



**Figure I6.1 Organization Structure of Jasa Tirta I Public Corporation (PJT I) including "PJT Jeneberang" (see highlighted boxes)**

## Overall Organization

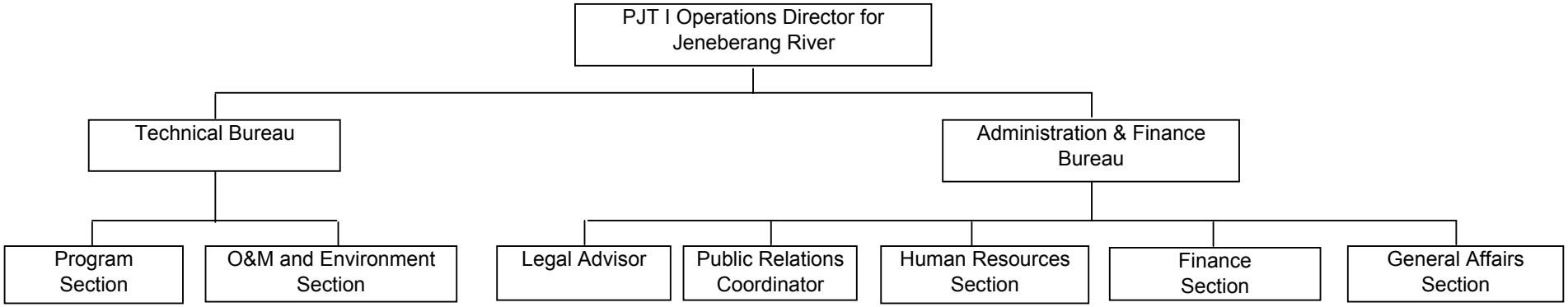



**Overall total staff:** **76**

**Notes:**
1) The General Affairs Section attached to Water Services Division I is primarily responsible for dam site security
2) Non-water services are excluded from this chart. However, it is expected that such services will, in due course, include sustainable sand mining, tourism, equipment hiring and consultancy.

**Figure I6.2 PJT Jeneberang as Extension of PJT I (1/4)**

## Technical and Administrative Support




| | | | | | |
|---|---|---|---|---|---|
| **Head of Operations Directorate** | 1 | | **Administration & Finance Bureau staff details:** | | |
| **Technical Bureau staff details:** | | | Head of Administration & Finance Bureau | 1 | |
| | | | Legal Advisor | 1 | |
| Head of Technical Bureau | 1 | | Public Relations Coordinator | 1 | |
| Head of Program Section | 1 | | Head of Human Resources Section | 1 | |
| Engineering Staff | 1 | | Administration Staff | 1 | |
| Head of O&M and Environment Section | 1 | | Head of Finance Section | 1 | |
| Water Quality Analyst | 1 | | Finance / Accounting Staff | 1 | |
| Sampling Staff | 2 | | Computer Operator / Typist | 1 | |
| Structural Enginner | 1 | | | | |
| Mechanical/Electrical Engoineer | 1 | | Head of General Affairs Section | 1 | |
| Geologist /Soil Mechanic Engineer | 1 | | Administration Staff | 1 | |
| | | | Office Boy/Girl | 2 | |
| Computer Operator/Typist | 1 | | Security | [3] | |
| Survey & Equipment Staff | 1 | | Drivers | 3 | |
| Sub Total: | 13 | | Sub Total: | 15 | **Subcontracted** |

**Technical and Administrative Support Total: 28 persons**

**Figure I6.2 PJT Jeneberang as Extension of PJT I (2/4)**

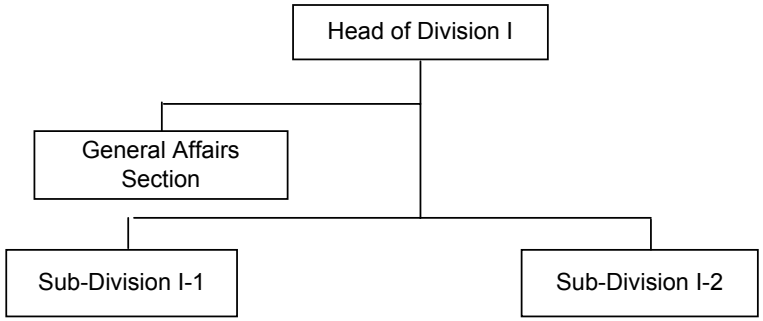
## Water Services Division I

Location: Bili-Bili Dam Site

**Infrastructure and Tasks:**

| | |
|---|---|
| Bili-Bili Dam | O&M of Bili-Bili Dam:<br>* Main, left wing & right wing dam<br>* Inlet/Outlet structure<br>* Flood control gate<br>* Spillway<br>* Diversion channel |
| Bili-Bili Dam Site and related operations basin-wide | O&M of Telemetry Hydrological Gauging Station<br>* Telemetry gauging stations (10)<br>* Warning stations (2)<br>* Supervisory control station<br>* Monitoring station<br>O&M of Raw Water Transmission Main<br>* PC pipes (16.0 km)<br>* Steel pipes (0.25 km)<br>* Valves with valve chambers (25 units)<br>Flood forecasting & warning |
| Upper Jeneberang | O&M of Sand Pocket & Sabo Dams<br>* Sand pocket dams (5)<br>* Sabo dams (3)<br>River conservation in the River Administration Area<br>Collaboration with SS Dinas Forestry and others in watershed conservation in Bili-Bili Dam Catchment Area |

Notes:
1) The boundary between Divisions I and II will be placed on the Jeneberang River just below Bili-Bili Dam (except for Raw Water Transmission Main).
2) Control of legal and illegal sand mining will be included in the work of the Upstream River Sub-Division.




**Head of Water Services Division I** 1

**General Affairs Section Staff details:**

| | |
|---|---|
| Head of General Affairs Section | 1 |
| Computer Operator / Typist | 1 |
| Security* | [6] |
| Driver | 2 |
| Sub Total: | 4 |

*: Subcontructed [staff numbers not correct]

**Sub-Division I-1 [Dam O&M] staff details:**

| | |
|---|---|
| Head of Sub-Division I-1 | 1 |
| Hydrologist / water quality expert | 1 |
| Telecommunication engineer | 1 |
| Computer Engineer | 1 |
| Gate operator | 4 |
| Field Inspector / warning crew** | 1 |
| Computer Operator / Typist | 1 |
| Driver | 3 |
| Sub Total | 13 |

**: In addition, six personnel are to be subcontracted

**Sub-Division I-2 (Upstream O&M) Staff details:**

| | |
|---|---|
| Head of Sub-Division I-2 / Civil Engineer | 1 |
| Field Inspector*** | 1 |
| Computer Operator | 1 |
| Driver | 3 |
| Sub Total: | 6 |

***: In addition, three personnel area to be subcontracted

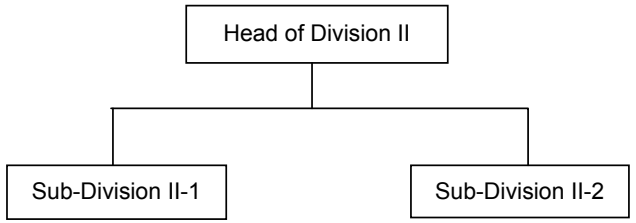
**Division Total : 24 persons**



**Figure I6.2 PJT Jeneberang as Extension of PJT I (3/4)**

## Water Services Division II

Location: Proyek Induk PWS Jeneberang, Jl. Monumen Emmy Saelan, Makassar




| **Infrastructure and Tasks** | |
|---|---|
| Middle Jeneberang (weirs) | O&M of Bili-Bili Weir |
| | * Diversion weir (1 unit 69.0 m long) |
| | * Intake structure (1 unit) |
| | O&M of Bissua Weir |
| | * Diversion weir (1 unit 239.3 m long) |
| | * Intake structure (1 unit) |
| | O&M of Kampili Weir |
| | * Diversion weir (1 unit 91.0 m long) |
| | * Intake structure (1 unit) |
| | River conservation in the River Administration Area between BiliBili Dam and Kampili Weir |
| Rubber Dam/ Long Storage | O&M of rubber dam |
| | * Rubber gate with control equipment |
| | * Bed protection with crushed stone |
| | * Revetment (316 m) |
| | O&M of long storage |
| | * Intake sluice gate |
| | * Flush gate to drainage channel (2) |
| | * Outlet box culvert |
| | * Tidal gate |
| Lower Jeneberang | O&M of river structures below Kampili Weir |
| | * Groundsill (2) |
| | * Drainage sluice gates (11) |
| | * River dyke (21.1 km) |
| | * Revetment (11.4 km) |
| | * Groyne (43) |
| | * Jetty |
| | River conservation in the River Administration Area below Kampili Weir |

| | |
|---|---|
| **Head of Water Services Division II** | 1 |
| Computer Operator / Typist | 1 |
| Driver | 3 |

**Sub-Division II-1 (Weirs O&M) Staff details:**

| | |
|---|---|
| Head of Sub-Division II-1/ Civil Engineer | 1 |
| Irrigation engineer | 1 |
| Gate operator | 6 |
| Driver | 2 |
| Sub Total: | 10 |

**Sub-Division II-2 (Downstream O&M) staff details:**

| | |
|---|---|
| *Downstream River Section* | |
| Head Sub-Divn II-2 / Civil Engineer | 1 |
| Hydraulic Engineer | 1 |
| Hydrologist/Water Quality Engineer | 1 |
| Field Inspector | 1 |
| Computer Operator | 1 |
| *Rubber Dam / Long Storage Section* | |
| Gate Operator | 4 |
| Sub-Total | 9 |

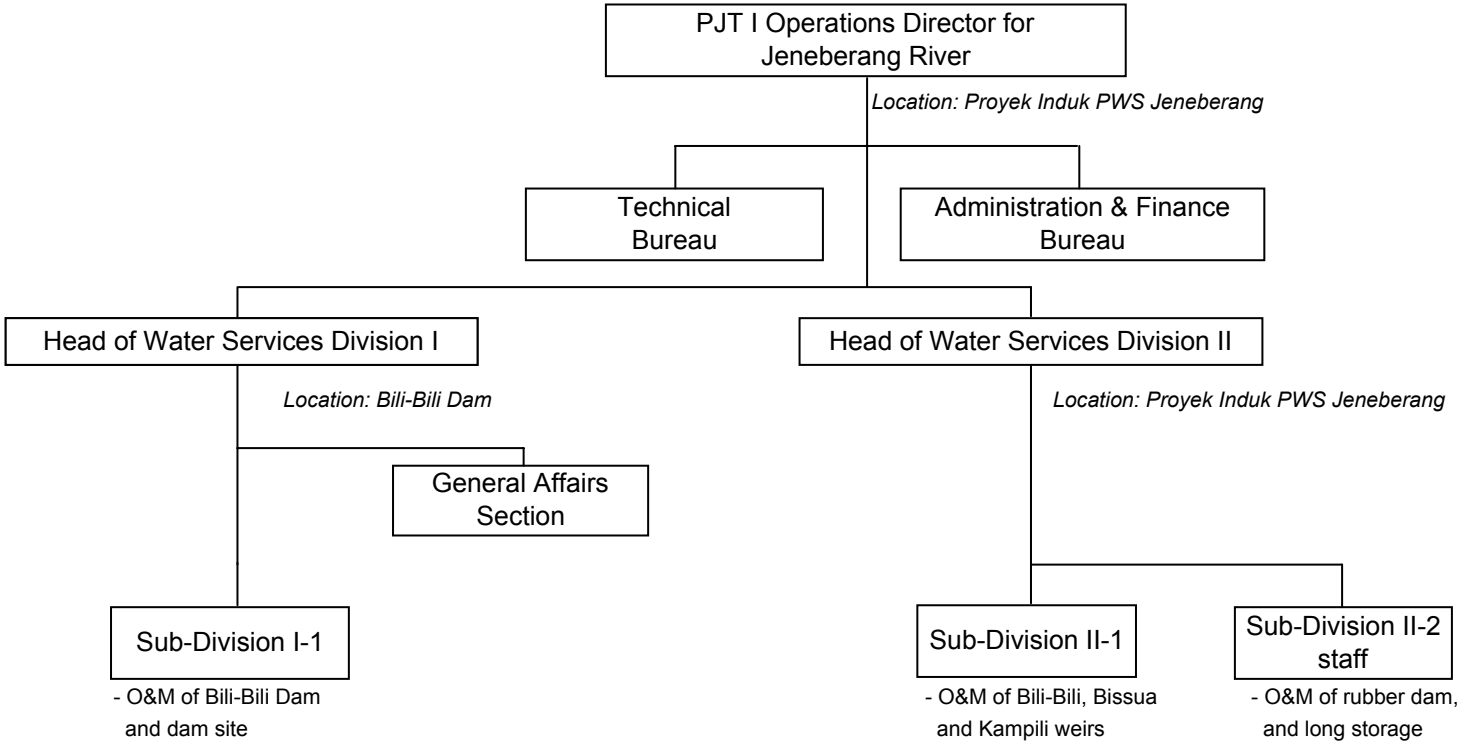
**Division Total:** **24 persons**

**Notes:** 1. The 14 river gates along the lower Jeneberang River will be operated by temporary staff living near the gates. Gate operation instructions will be given by BiliBili Dam Control (supervised by Head of Sub-Division I-1

2. The work of the Downstream River Section should include the control of salinity in Long Storage by appropriate means.

**Figure I6.2 PJT Jeneberang as Extension of PJT I (4/4)**

## Overall Organization

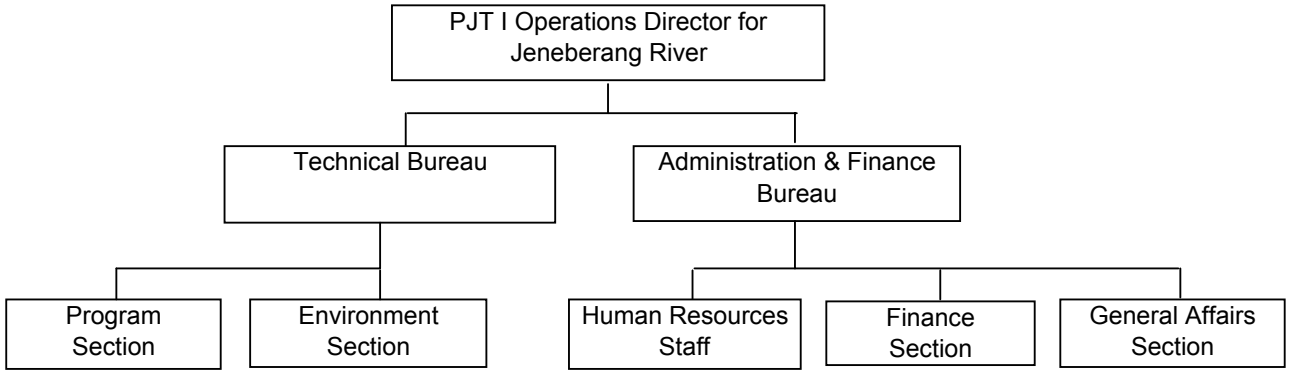



**Overall total staff:** **45 persons**

**Notes:**
1) Only essential tasks will be performed during the start-up period, that is O&M of the BiliBili Dam site including the Raw Water Transmission Main, and of the three major weirs downstream of the BiliBili Dam
2) Job titles of the long term organization have been retained for reference even where no staff have been allocated
3) All security operations in and around BIliBili Dam and PJT I Jeneberang office premises would be subcontracted

**Figure I6.3 PJT Jeneberang as Extension of PJT I: Start-up - the First Two Years (1/4)**

## Technical and Administrative Support




| | | | |
|---|---|---|---|
| **Head of Operations Directorate** | 1 | **Administration & Finance Bureau staff details:** | |
| Public Relations Coordinator | | | |
| | | Head of Administration & Finance Bureau | 1 |
| **Technical Bureau staff details:** | | Legal Advisor | |
| | | Public relations Coordinator | |
| Head of Technical Bureau | 1 | Computer Operator / Typist | 1 |
| Head of Program Section | 1 | Head of Human Resources Section | |
| Engineering Staff | 1 | Administration Staff | 1 |
| Head of O&M and Environment Section | | Head of Finance Section | 1 |
| Water Quality Analyst | | Finance / Accounting Staff | 1 |
| Sampling Staff | | | |
| Engineering Staff | | Head of General Affairs Section | 1 |
| Mwchanical/Electrical Engineer | 1 | Administration Staff | 1 |
| | | Telecommunications | |
| Computer Operator/Typist | | Mechanic | |
| Survey & Equipment Staff | | Office Boy/Girl | 1 |
| Sub Total: | 5 | Security | [2] **Subcontracted** |
| | | Drivers | 2 |
| | | Sub Total: | 10 |

**Staff Total:** **15 persons**

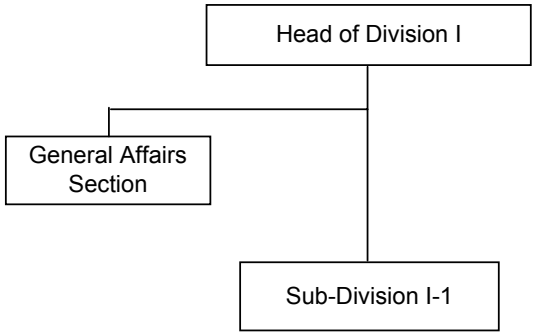
**Note:** For reference, all job titles in the long term organization are retained here, even where no staff are allocated

**Figure I6.3 PJT Jeneberang as Extension of PJT I: Start-up - the First Two Years (2/4)**

## Water Services Division I

Location: Bili-Bili Dam Site

| **Infrastructure and Tasks:** | *[**Note**: Shaded items will not be operated and maintained during the first two years]* |
|---|---|
| Bili-Bili Dam | O&M of Bili-Bili Dam:<br>* Main, left wing & right wing dam<br>* Inlet/Outlet structure<br>* Flood control gate<br>* Spillway<br>* Diversion channel |
| Bili-Bili Dam Site and related operations basin-wide | O&M of Telemetry Hydrological Gauging Station<br>* Telemetry gauging stations (11)<br>* Warning stations (2)<br>* Supervisory control station<br>* Monitoring station<br>O&M of Raw Water Transmission Main<br>* PC pipes (16.0 km)<br>* Steel pipes (0.25 km)<br>* Valves with valve chambers (25 units)<br>Flood forecasting & warning |
| Upper Jeneberang | O&M of Sand Pocket & Sabo Dams<br>* Sand pocket dams (5)<br>* Sabo dams (3)<br>River conservation in the River Administration Area<br>Collaboration with SS Dinas Forestry and others in watershed conservation in Bili-Bili Dam Catchment Area |




| | | |
|---|---|---|
| **Head of Water Services Division I** | 1 | |
| **General Affairs Section Staff details:** | | |
| Head of General Affairs Section | 1 | |
| Computer Operator / Typist / Secy. | 1 | |
| Security | [3] | **Subcontracted [staffing not correct]** |
| Driver | 1 | |
| Sub Total: | 3 | |

| **Sub-Division I-1 [Dam O&M] staff details:** | | **Sub-Divn I-2 [Upstream River O&M] Staff details:** |
|---|---|---|
| Head of Sub-Division I-1 | 1 | Head of Sub-Division I-2 / Civil Engineer |
| Hydrologist / water quality expert | | Soil Mechanic / Engineer |
| Telecommunication engineer | 1 | Geologist |
| Computer Engineer | | Reforestation specialist |
| Gate operator | 4 | Structural Engineer |
| Field Inspector / warning crew | 1 | Field Inspector |
| Computer Operator / Typist | 1 | Computer Operator |
| Driver | 2 | Driver |
| Sub Total | 10 | Sub Total: |

**Division Total :** **14 persons**

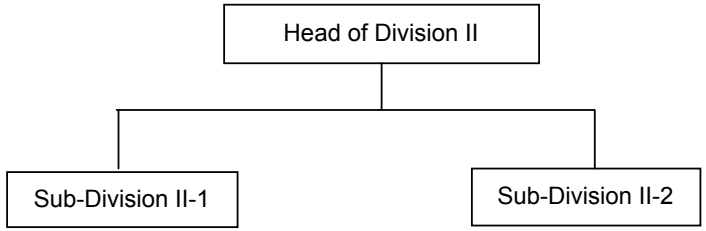
**Notes:**
1) The boundary between Divisions I and II will be placed on the Jeneberang River just below BiliBili Dam. (except for Raw Water Transmission Main)
2) For reference, all job titles in the long term organization are retained here, even if they have no staff allocated



**Figure I6.3 PJT Jeneberang as Extension of PJT I: Start-up - the First Two Years (3/4)**

## Water Services Division II

Location: Proyek Induk PWS Jeneberang, Jl. Monumen Emmy Saelan, Makassar




| **Infrastructure and Tasks** | *[**Note**: Shaded items will not be operated and maintained during the first two years]* |
|---|---|
| Middle Jeneberang (weirs) | O&M of Bili-Bili Weir |
| | * Diversion weir (1 unit 69.0 m long) |
| | * Intake structure (1 unit) |
| | O&M of Bissua Weir |
| | * Diversion weir (1 unit 239.3 m long) |
| | * Intake structure (1 unit) |
| | O&M of Kampili Weir |
| | * Diversion weir (1 unit 91.0 m long) |
| | * Intake structure (1 unit) |
| Rubber Dam/ Long Storage | O&M of rubber dam |
| | * Rubber gate with control equipment |
| | * Bed protection with crushed stone |
| | * Revetment (316 m) |
| | O&M of long storage |
| | * Intake sluice gate |
| | * Flush gate to drainage channel (2) |
| | * Outlet box culvert |
| | * Tidal gate |
| Lower Jeneberang | O&M of river structures below Kampili Weir |
| | * Groundsill (2) |
| | * Drainage sluice gates (11) |
| | * River dyke (21.1 km) |
| | * Revetment (11.4 km) |
| | * Groyne (43) |
| | * Jetty |
| | River and watershed conservation below Kampili Weir |

| | |
|---|---|
| **Head of Water Services Division II** | 1 |
| Computer Operator / Typist | 1 |
| Driver | 2 |

**Sub-Division II-1 (Weirs O&M) Staff details:**

| | |
|---|---|
| Head of Sub-Division II-1 / civil engineer | 1 |
| Irrigation engineer | |
| Gate operator | 6 |
| Driver | 1 |
| Sub Total: | 8 |

**Sub-Division II-2 (Downstream O&M) staff details:**

| | |
|---|---|
| *Rubber Dam / Long Storage Section* | |
| Electrical/Mechanical Engineer | |
| Gate Operator | 4 |
| *Downstream River Section* | |
| Civil Engineer | |
| Hydraulic Engineer | |
| Hydrologist/Water Quality Engineer | |
| Structural Engineer | |
| Field Inspector | |
| Computer Operator | |
| Sub-Total | 4 |

**Division Total:** **16 persons**

**Notes:** 1. The 14 river gates along the lower Jeneberang River will be operated by temporary staff living near the gates. Gate operation instructions will be given by BiliBili Dam Control (supervised by Head of Sub-Division I-1)

2. The work of the Downstream River Section should include the control of salinity in Long Storage by appropriate means.

**Figure I6.3 PJT Jeneberang as Extension of PJT I: Start-up - the First Two Years (4/4)**

# *Supporting Report J*

# *ADMINISTRATIVE AND FINANCIAL MANAGEMENT*

**Supporting Report J**

# ADMINISTRATIVE AND FINANCIAL MANAGEMENT

## Table of Contents

## List of Tables



## List of Figures



## Appendix

# Supporting Report J

# ADMINISTRATIVE AND FINANCIAL MANAGEMENT

## J1 Administrative Management

### J1.1 Framework of Administration

A corporation shall be running with a management cycle; Plan-Do-Check-Action. In order to accomplish mission of the corporation, it is necessary to make a corporate management plan, recruit personnel for the organizational task force, and implement the plan using resources of organization, human resources and budget. After the evaluation and periodical monitoring, the findings should be fed back for improvements.

(1) Formulation of the long-term plan

Based on the decree of Ministry of State-owned Enterprise (MSOE) KEP-102/MBU/2002 and SOE (BUMN) master plan 2002 (which covers 2002-2006), the public corporation should prepare long-term strategic plan which covers the aim and target to be achieved by the corporation during coming 5 years. The aim of the corporation is, as stipulated in Government Regulation (GR) No.93/1999 (which includes articles of incorporation of PJT I and will also be applied to PJT Jeneberang), to fulfill the human need through efficient and sustainable water resource utilization, and to implement duties of river basin management.

The plan should also include historical background of the basin, vision, mission, objective, strategy, policy, constraints and program of implementation according to GR No.13/1998 on Public Corporation (this GR is now under revision). Long term plan which must be signed by the Supervisory Board and the Board of Directors should be sent to State Ministry of State-owned Enterprise (SMSOE)[1] via Ministry of Public Works (MPW)[2] for approval.

Long term plan is the basic management plan of the corporation. Succeeding work plans, which should be made every year, has to follow the budget approval of the long term plan. Long term planning team will be formulated according to a decree of the board of directors. GR No.13/1998 on SOE stipulates that the long term plan should include:

- Formulation of the long-term plan
- Evaluation of the previous long-term plan implementation
- Current position of the corporation
- Assumptions used in formulating the long-term plan

[1] MSOE was reorganized as SMSOE in October 2004. This Chapter uses both wordings; i.e. MSOE when it means the organization before October 2004 and SMSOE when it means the present organization.
[2] MPW was renamed from Ministry of Settlement and Regional Infrastructure (MSRI) in October 2004. This Chapter uses both wordings; i.e. MSRI when it means the organization before October 2004 and MPW when it means the present organization.

- Determination of objective, strategy, policy and implementing program and relations among the elements
- Contents and procedure on formulating long-term plan is stipulated by MSOE Decree KEP-102/MBU/2002.

Contents of the current 5 year plan of PJT I (2004-2008) are as follows:

- Introduction (history, vision / mission, corporate culture, aim, and direction of development)
- Evaluation of the implementation of the previous long-term plan
- Corporate position (SWOT analysis and corporate strategy)
- Long-term plan materials (assumption, objectives, targets, strategy, corporate policy, activity program, program-interconnected matrix)
- Corporate financial projection
- Action and recommendation

The plan was sent to MSOE in October 2003 and officially approved in April 2004. Article 27 of GR No.13/1998 may be applied to the long term plan as well as annual work plan, stipulating that the board of directors should submit a new plan within 60 days before the end of current period. In practice, MSOE requests to submit draft final of the long term plan by the end on September.

Current long term plan of PJT I covers 5 years from 2004 to 2008. It was officially approved by MSOE to achieve work target, with an issuance of instruction that the board of directors is asked to approach to the relevant institutions, particularly MSRI and MOF in order to make PSO financed from APBN. If PJT Jeneberang starts operation from 2007 as working area extension of PJT I, the current 5 year plan must be revised. Procedure will be as follows:

1) Issuance of the board of directors decree on formation of the planning team
2) Reference to the evaluation results on the previous year performance of PJT I, BUMN master plan, GR KEP102/MBU/2002, the relevant ministry decrees on PJT Jeneberang, and PJT I internal guidelines such as No.QP/PJT/16 on the long-term plan
3) Collection of the supporting data from the relevant institutions on production, tariff, revenue, O&M cost, investment, etc. to make RJP (5 year budget plan)
4) Approval of the draft plan by the board of directors including a director of PJT Jeneberang and signing by the supervisory board members, and submission to SMSOE via MPW

To exercise supervision through the supervisory board, it is expected that one of the supervisory board members will be represented by the regional stakeholders.

RJP formulation process should involve all key staff of the entire working unit so that the formulation is truly done by total corporation effort. Direct participation of top management in working out targets, strategies, policies and implementing programs is essential for accountability and responsibility.

(2) Formulation of Annual plan

According to GR No.13/1998, the board of directors is obliged to prepare work plan and budget of the corporation. MSOE instructed in details on the formulation of annual work plan through the decree KEP-101/MBU/2002.

Based on the MSOE decree, annual work plan and budget which should cover program of O&M work plan, production, budget, financial estimation, donation to small corporations, audit schedule and other matters shall be formulated. The initial annual work plan (RKAP) must be forwarded to the SMSOE via MPW within 60 days before beginning of the fiscal year to get approval.

## J1.2 Implementation of Work Plan

Pursuant to the 5 years plan (RJP) and annual work plan (RKAP) approved by SMSOE, the management must carry out the plan to realize the targets in every area, through identifying constraints and making efforts to solve the problems. After approval of annual work plan (RKAP), if it becomes appropriate to revise the annual plan, the board of directors may decide to revise the original work plan and approve the new work plan (RKOP). Law No.19/2003 on SOE stipulates that one of the purposes to establish a SOE is to pursue profits based on principles of business management.

According to decree of MSOE KEP-100/MBU/2002, PJT's performance is evaluated by three criteria; Finance, Operation and Administration. In financial evaluation, PJT is requested among others to earn profit at 10% of return on equity ("A" rank - Healthy) or desirably 15% ("AA" rank - Very Healthy). Directors' meeting are held every Monday morning at PJT I to discuss agenda mainly related to the annual plan (RKAP) such as production, O&M work plan, HRD, etc. It is suggested that director of PJT Jeneberang should attend the meeting at least 2 times a month for the first 6 month of the initial operation and once a month thereafter.

Monthly management report will be submitted from each water service division and administrative bureau to each responsible director with information including problems to be solved and ratification of agenda of the last month. PJT Jeneberang should also make such report to the director. If necessary, the section chief of PJT Jeneberang may meet with staff of the water service division or administrative bureau of PJT I head office twice a month.

PJT I prepares quarterly report, according to the decree of the board, which covers (i) executive summary (ii) financial report (iii) performance report. Financial report consists of managerial and organizational conditions during the period, but mainly financial progress in comparison with the annual plan (RKAP) up to the date from beginning of the year, such as water supply, revenue from each customer, O&M cost, other income, profit, investment, and account receivables by customer together with B/S, P/L and Cash flow statement.

Performance report describes evaluation by score on three categories of finance, operation and administration. Report after resolution of board meeting will be submitted to MPW and SMSOE with president director's signature. After that, the report will be discussed in the supervisory board meeting and all department of the corporation. PJT I Bengawan Solo can not make their own B/S and P/L separately by themselves. PJT Jeneberang should make such report and discuss internally and/or together with PJT I head office.

In addition to the above, PJT I Management Accounting Section makes management report quarterly to discuss with every unit on financial information including cost allocation of indirect cost, non-water business development and laboratory information mainly for budget control. PJT Jeneberang also should attend in the related unit to learn current situation.

## J1.3 Corporate Monitoring and Review

Corporate monitoring and review is important activity to ensure sound corporate management, and efficiently achieve the planning targets and customer satisfaction. Management review should be regarded as one of the main responsibilities of the top management and be documented for accountability to the competent authorities over the corporation.

Monitoring and review in the existing PJT should be a good reference to the proposed corporation. PJT conducts corporate monitoring and review activity in the form of annual and quarterly reporting, regular board meeting (RD), and management coordination meeting (RKM) and others.

(1) Annual and quarterly reporting

PJT is required to prepare annual and quarterly reports in order to reveal the achievement level of planning targets, review all the activities and issues (qualitative), and assess the overall corporate performance (quantitative). These reporting works serve not only as an execution of accountability to the competent authorities, but also as internal monitoring and management review to strengthen the corporate management.

Achievement review of planning targets and overall performance assessment are undertaken, according to the system and quantitative indicators indicated by the Ministry of State-owned Enterprises (MSOE). Indicators subject to achievement review and performance assessment are detailed below.

**Indicators subject to Achievement Review and Performance Assessment**

| Type of review / category | Indicators | Brief Explanation |
|---|---|---|
| Achievement review of planning target | - Production | By service |
| | - Financial - P/L, B/S, CF | By service, directorate, and unit |
| | - Investment | |
| | - O&M expenditure | |
| | - Staffing, HRD | |
| | - Other qualitative targets | Such as introduction of regulation, etc |
| Overall performance assessment | - Return of Equity | Comparison to the standard |
| | - Return on Investment | |
| 1) Financial aspect | - Cash Ratio | Data to be processed from the financial statements of the corporation that are to be quarterly prepared |
| | - Current Ratio | |
| | - Collections Period | |
| | - Inventory Turn Over | |
| | - Total Asset Turn Over | |
| | - Own Capital Ratio | |
| 2) Operational aspect | - Realization of water supply available | Estrangement of actual volume from the water distribution pattern |
| | - Flood control | Issuance of Flood Alert Manual |
| | - Realization of irrigation water provision | Estrangement of actual volume from the water distribution pattern |
| | - Number of river flushing | Comparison to prescribed number |
| | - Water quality management | Submission of monitoring report |
| | - Level of O&M service | Comparison to operational income and annual work / budget plan |
| | | Comparison to O&M priority plan |
| | - Effectiveness of O&M | Recommended surveillance interval |
| | - ISO 9001 Management | Estrangement of actual volume from the water distribution pattern |
| 3) Administrative aspect | - Audit reporting | Submission within schedule |
| | - Corporate work & budget plan | Acceptance before fiscal year start |
| | - Quarterly reporting | Submission within schedule |
| | - Public relation : performance of SME support | Realization of fund distribution, and loan collection ratio |

Source: Extracted from Annual Report of PJT I - 2003

Concerning overall performance assessment, marking is made for each indicator to reveal the healthiness. Even though the proposed corporation is established as one of the working area of PJT I, the corporation is recommended to independently assess the performance, as a means of generating feedbacks to the corporate management strengthening.

Concerning indicators, however, it is suggested to improve some operational and administrative indicators, in order to make the performance assessment system internally workable for the better decision-making on the corporate management. Indicators subject to improvement are as follows;

Operational aspect

**Water quality management** : Rather than whether related monitoring report has been submitted within a certain due date, closer focus on whether river water quality at selected locations is varying and in accordance to the standard should be given. Although detailed performance indicators are to be collected and analyzed by the section in charge, this section

should at least report typical and important indicators such as BOD, COD and turbidity to the top management for review.

**O&M level** : Not only O&M expenditure against revenue or its comparison to the planning target, the ratio of actual O&M expenditure against complete and desirable O&M level (possibly by infrastructure type) should be added to reveal the attainment level and potential risks in the future.

**ISO 9001 Management** : In addition to the recommended interval of surveillance visit, indicators such as the number of note pointed (and closed) by the surveyor, number of important claim from customer / stakeholder, customer satisfaction, number of preventive and corrective actions taken are of importance to periodical performance assessment.

**Flood control and river flushing :** Yearly issuance of Flood Alert Manual (PSB) within a certain due date that guides in reservoir water level, discharge capacity, maintenance of related facility and equipment is an indicator, but this explains the performance related to flood control only partly. Indicator can be more operation and effect-oriented. This is also true to the indicator of river flushing.

Administrative aspect

**Audit reporting** : Rather than looking at whether the audit report has been submitted within a certain due date, an attention onto the number of important and serious notes, and improvement recommendation pointed out by the auditor should be given. Furthermore, the number of follow-up action to correspond to the notes may be added for assessment.

**Corporate work & budget plan (RKAP)** : Aside from a punctuality of planning work, attainment level of the most supreme targets (interpreted to the number of satisfactorily attained targets) may be another subject for review.

**Public relation** : Alternative indicators such as the number of public and environmental awareness programs held by the corporation and its participants (compared to the planned target) may be also used.

Overall performance assessment relies on quantitative indicators. At the same time, achievement review of planning targets (both quantitative and qualitative), and review of the activity and customer relation (qualitative) have to be prepared. The scope of monitoring and review (through annual and quarterly reporting) is summarized as follows;

**Scope of Monitoring and Review**

| Reporting type | Item | Sub-item |
|---|---|---|
| A) Annual Report | a) Introduction | - Vision and mission<br>- General policy and strategy<br>- Changes in legal / institutional framework<br>- Internal / external conditions |
| | d) Review of non-service activity | - Personnel, HRD, Technical development, Quality Management System , others<br>- Follow-up actions corresponding to the comments from inter-department meeting |
| | e) Customer / stakeholder information | - Important claims and feedbacks<br>- Results of customer satisfaction |
| | f) Issues and necessary efforts | - Issues to be solved<br>- Improvement efforts, and requests to the stakeholders |
| | g) Overall corporate performance assessment | - Financial aspect<br>- Operational aspects<br>- Administrative aspects |
| B) Quarterly report<br><br>Items and sub-items underlined are to be made externally reported. | a) Introduction | - General policy and strategy<br>- Changes in legal / institutional framework |
| | c) Brief review of service activity | - Commercial service activity<br>- Public service activity<br>- Non-water service activity<br>- Public relation activity |
| | d) Brief review of non-service activity | - Personnel, HRD, Technical development, Quality Management System , others<br>- Follow-up actions corresponding to the comments from inter-department meeting |
| | e) Customer / stakeholder information | - Important claims and feedbacks<br>- Results of customer satisfaction |
| | f) Issues and necessary efforts | - Issues to be solved<br>- Efforts, and requests to the stakeholders |
| | g) Quarterly performance assessment | - Financial aspect<br>- Operational aspects<br>- Administrative aspects |

Note : After ISO 9001 Quality Management System is certified.

From the above reviewing activity, the following decisions can be expected as feedbacks to the strengthening of corporate management;

- Improvement of corporate management system
- Revision of procedures / work instructions that are concerned with the realization process of the service and product, and O&M of facilities
- Preventive and corrective actions to mitigate the potential risks
- Resource securing and mobilization necessary for the execution of decisions

(2) Monitoring and review at periodical meetings

PJT shall run frequent monitoring and review system through the internal meetings by management level, where the updated information on external / internal conditions, achievement level of the planning targets, highlights of each activities and issues related to corporate operation are monitored and reviewed to identify problems and constraints for the better attainment of targets.

Main output from these monitoring and review meetings is any kinds of decision that leads to specific action to improve the corporate management and service quality, and prevent adverse results. Against such actions, monitoring frame is then to be prepared by identifying person in charge, schedule, necessary resource and measurable indicators. Furthermore, the monitoring result and evaluation on the action will be presented at the subsequent meeting to assess the effectiveness of the action. Minutes of meeting and evaluation report on the improvement action are all reported to the upper management level for its further review.

It is accordingly judged that the system of monitoring and review is well institutionalized into the corporate management system of PJT. Internal meetings in the PJT I includes the following;

**Internal Meetings in PJT I**

| Meeting | Notes |
|---|---|
| Monthly<br>Board of Directors Meeting<br>(RD) | To mainly review :<br>- External / internal conditions that may affect policy, strategy and management<br>- Overall performance of the corporation and each directorate<br>- Issues and efforts subject to the board approval<br>Meeting arrangement :<br>- To be held at the head office (PJT I)<br>- Board of Directors to be invited |
| Monthly<br>Management Coordination Meeting<br>(RKM) | Function as core review meeting to realize the better attainment of planning targets and deal with inter-sectional issues and coordinate actions<br>To mainly review :<br>- External / internal conditions<br>- Detailed performance review of the corporation, each directorate, and relevant units<br>- Selected / prioritized issues and efforts, related to corporate operation, that cannot be tackled by individual working units<br>Meeting arrangement :<br>- To be held at the head office (PJT I)<br>- Directors, Heads of Bureau and Division, Internal Auditor, and Corporate Secretary to be invited |
| Monthly<br>Unit Coordination Meeting<br>(RKU) | Function to prepare for RKM through sorting out and clarifying various issues and required actions before RKM<br>To mainly review :<br>- Issues and efforts, related to corporate operation, that cannot be tackled by individual working units<br>Meeting arrangement :<br>- To be held at the head office (PJT I)<br>- Heads of Bureau and Division, Internal Auditor, Corporate Secretary to be invited |
| Monthly<br>Central Management Evaluation Meeting<br>(RTM-P) | Function to realize quality target and maintain Quality Management System (QMS)<br>To mainly review :<br>- Monitoring result and assessment on QMS<br>- Customer and stakeholder claims, feedbacks, customer satisfaction analysis<br>- Result of external / internal audits<br>Meeting arrangement :<br>- To be held at the head office (PJT I)<br>- A few Directors, Heads of Bureau and Division, Internal Auditor, Corporate Secretary, quality control staffs to be invited |
| Monthly<br>Unit Management Evaluation Meeting<br>(RTM-U) | Function as the smallest review meeting for each unit (division, sub-division, bureau)<br>To mainly review :<br>- Performance of the corporation and each belonging unit<br>- Monitoring result and assessment on QMS<br>- Customer and stakeholder claims, feedbacks, customer satisfaction analysis<br>- Result of external / internal audits<br>Meeting arrangement :<br>- To be held at each belonging unit<br>- All the staff in each Bureau, and Division / sub-Division to be invited |

The proposed corporation (as a part of PJT I working area) is suggested to basically follow and make use of such system established in PJT I. Among the above, it is recommended for PJT Jeneberang that function of Unit Coordination Meeting (RKU) is to be altered to better fit into the situation that the proposed corporation will face. Considering its remoteness and needs for more independent management system, RKU may be independently conducted with full-scope of management review (similar to RKM) by the Director, Head of Divisions and Sections.

Review inputs such as i) information on external / internal conditions, ii) performance review of the corporation, iii) customer and stakeholder claims / feedbacks (related to the Jeneberang's working area) can be added to the normal scope of RKU. Such independent monitoring and review activity can enhance the capacity of corporate management and a sense of responsibility for the target realization.

If approved, a few outside observers from Dinas PSDA and district governments may join this review meeting to promptly reflect local stakeholders' feedbacks into the routine corporate management and decision-making.

Overall frame of monitoring and review through periodical meetings for the proposed corporation is shown in Table J1.1. Concerning the Board of Directors meeting, RKM and RTM-P, the Director and relevant management staff of PJT Jeneberang should attend to meetings at the head office. Monitoring (and measurement) procedure and indicators on product / service realization process and the facility maintenance condition are also stipulated in the separate procedures.

## J1.4 Internal Auditing

Law No.19/2003 on SOE stipulates that each SOE should set up an internal control unit. According to organization structure, PJT Jeneberang's operation is under the internal auditing system of PJT I head office. It should be applied so that operation system may consistent to that of PJT I head office. PJT I has an internal control unit (SPI) directly under the president director. Procedure of implementation is determined by Decree of Board of Directors No.KP.32/KPTS/DU/91 on Guideline for Implementing Internal Control based on GR. No.93/1999 and the regulation of MPW No.56/PRT/1991 on General Policy regarding Management of PJT I.

At the beginning of the fiscal year, SPI formulates work program for audit of the year (PKPT). Upon approval of the plan by the president director, SPI issues inspection letters (SPTP) to each relevant director and undertake inspection through data collection, interview, observance, photographing and other methods determined in SPTP. After inspection, SPI drafts the report on inspection result. After the clarification by audited unit regarding comments in the draft report, SPI formulates Report on Inspection Results (LHP) with recommendation and present to the president director. Audited units follow-up and report to president director. Quarterly, SPI conducts monitoring of the follow-up actions undertaken and reports the result to the president director.

The inspection objectives are finance and operation. It will be done to find any discrepancy between rules and actual works. In PJT Jeneberang at inspection, a head of section other than responsible for inspection objective should assist head office's inspector to cross check. For PJT Jeneberang's personnel, the inspection should be regarded as an opportunity of learning the experience accumulated in PJT I.

O&M of the managed assets is the main activity of water service division of PJT Jeneberang. Physical assets management is important since the book value of managed assets are far bigger than owned assets even though the managed assets are not listed in the balance sheet. The decree of MPW No. 180/KPTS/1996 on Administrative Guidance for State-owned Property managed by PJT instructs the ways of property bookkeeping and valuation. Following this guideline, it is recommended to prepare inventory of physical assets.

Inventory of physical assets must include a) verification of physical existence, b) re-valuation based on depreciation and through direct observation, and c) reconciliation of the book records with the physical existence. PJT I conducts physical existence verification but never conducts re-valuation due to the lack of book value depreciation. The physical asset issue of PJT I can be solved by keeping sub-ledger of managed assets and making calculation of depreciation. In summary, the function of the internal audit for PJT Jeneberang would be as follows;

1) To review and appraise the soundness, adequacy and application of policies, procedures, and standards on administration and accounting according to current guidelines of PJT I
2) To conduct financial audit, compliance audit, and operation and management audit
3) To analyze and evaluate audit findings
4) To provide auditor's opinions with advice to the top management
5) To prepare audit reports and monitor action taken on audit findings and recommendations

## J1.5 Public Relations Plan

PJT Jeneberang (PJT J) as a new public corporation established in the decentralization era will face different establishment process from the other PJTs. The plan of establishment already attracted attentions of the local government and community. Interest of the local community to involve in the corporation has been increasing. Proper participation and management of the stakeholders will be important for the corporation. PJT Jeneberang needs to determine the strategy of stakeholder participation and management. Proactive actions and dissemination of information will minimize unnecessary complaints and problems. Good public relation function will help each division and bureau with efficient service provision and minimizing unnecessary costs.

(1) Present Condition of Public Relations

1) Review of public relation activity by the existing agencies

Staff of PJT Jeneberang will be recruited from the related organizations which have experience and competence in water resources management. It is important to learn what kind of public relation is experienced in this sector, and decide what kind of public relation function to be prepared for the new corporation. Related organizations include Dinas PSDA, Balai PSDA, JRBDP and PJT I.

Dinas PSDA

Public relation of Dinas PSDA is largely delegated to Division of Guidance and Beneficiaries Management that has inter-departmental liaison section and consultation section. Under this division, there are a variety of consultative activities including educational training to the farmer community on irrigation management. It is pointed out that Dinas PSDA still lacks a sense of accountability on its service, therefore, needs of community for service improvement are not effectively reflected to the activity of Dinas PSDA.

Balai PSDA

Balai PSDA does not indicate a public relation unit or responsible staff. As a newly established unit, its activity is concentrated on capacity empowerment of its staff to execute main tasks. In the future, public relation activity will be essential to facilitate community participation in operation and maintenance of irrigation facility.

JRBDP

JRBDP has the General Affairs Division that has the task of handling incoming information (such as complaint or claim by customer and community). However, there is no dedicated unit or staff whose primary task is to channel such needs to relevant working unit and to handle the outward flow (dissemination) towards the external community. An important lesson to the proposed corporation is that it is necessary to systemize continuous needs identification, feed-backing and accountability functions.

PJT I

Though structural unit itself is not prepared in the organization set-up, PJT I has a public relation advisor working under Management Secretariat. PJT I carries out a series of public relation related programs, such as periodical survey on customer satisfaction (an important part of Quality Management System), environmental awareness raising and livelihood improvement. One of the main programs is “financial and technical support to small and medium sized enterprises (SMEs) and cooperatives” (referred to as PUKK), that is a

mandatory program for SOEs in Indonesia. Financial support consists of loan provision with low interest rate to any individual SMEs and cooperatives.

PJT I and other SOEs usually handles this program by assigning the examination of fund application and monitoring of fund utilization (and repayment) to the credible public and private institutions (such as Institute of Community Services attached to each university and business consultant associations). The program manages the revolving fund that is to be accumulated by the loan repayment and a certain portion of profit appropriated each year. Considering financial difficulty faced by the corporation at the initial stage, an immediate operation of the fund will be not likely.

The fund can be also utilized to the assistance for scholarship, educational institute, and community forestry activity in the form of grant provision. In addition, technical assistance to upstream farmers is also recommendable. The corporation will be able to collaborate with the Dinas Agriculture and Forestry in disseminating the farming practices to minimize the soil degradation and discharge, and the use of fertilizer.

(2) Issues to be addressed under public relation activity

In the decentralization era, closer communication and coordination with local stakeholders is a key issue for the sustainable river basin management. Establishment of the new corporation needs a series of explanation and socialization to the stakeholders on the following issues, and their participation.

1) Services of the corporation and demarcation with the local government
   a) Likely change of water resource management practices as a result of the establishment of the corporation (such as sand mining, water quality monitoring and so on)
   b) Management of river area
   c) Introduction of water and other service fees
2) Contribution and job opportunity to be generated by the corporation to the river basin community
3) Stakeholder participation in watershed management and facility maintenance
4) Gender balanced participation in the river basin management
   Existing condition shows a participation of women in decision making is still little, while they are involved in various activities which affect the river basin condition.
5) Ban on sand mining at the lower stream and alternative livelihoods

(4) Focus of Public Relations

The objective of public relations activity is to establish and maintain harmonic and collaborative relationship with the stakeholders. Public relation service with systematic structure will not only lead to the regional understanding on the corporation's role and activity, but also strengthening

the corporate management base. Main focus of public relation activity shall cover the followings:

- Promotion of accountability and awareness raising:
  Kinds of activities and services rendered by PJT Jeneberang will be the main information to be provided at the initial stage of establishment. Better understanding of responsibility of the corporation will create positive supports rather than complaints and dissatisfaction. It is necessary to introduce the corporation's services to raise community's awareness on the importance of PJT Jeneberang and explain how the local communities take advantage of such services for their benefits.
- Customer management
  Customer's service is the main task of the corporation. PDAM, PLN and other water users industries are considered as the potential customers. Proper management of customer needs will improve the service and performance of the corporation.
- Stakeholders management
  Stakeholders at the Jeneberang river basin are local governments, community groups including local NGOs, industries, universities, Dinas PSDA, Dinas of Forestry, Dinas of Mining, Dinas of Tourism, Dinas of Agriculture, and Dinas of Plantation at both provincial and Kabupaten levels. Proper participation and management of such stakeholders will contribute to integrated management of river basin. Public relations coordinator can be engaged in the coordination and facilitation to encourage stakeholder participation. Unnecessary and overlapped activities and services might be minimized and in turn will realize the better financial performance.

(5) Enhancement of accountability and awareness raising:

Public must be informed of the roles and services that are delivered by the corporation. It is also the responsibility of the corporation to disclose data and information to the public also about how the services are rendered and how the responsibilities are fulfilled. The information to be communicated to the public shall cover the followings:

- Role and contribution of PJT Jeneberang
- Achievement level of the services and responsibilities
- The corporate development plan and facility development plan in the basin
- Water supply and demand balance in the future
- Benefits and importance of water to life and watershed management
- Problems and issues in the river basin management

This activity will start after the establishment of PJT Jeneberang. At the initial stage, public relation can be handled by the administrative bureau, until public relation coordinator is recruited or appointed. Public relation coordinator is responsible for periodically joining the internal meeting in order to collect necessary information and to select information to be

disclosed. Enhancement of accountability and awareness raising will be executed by the following means:

1) Publishing and distribution of the corporate brochure, pamphlets and service leaflet in print or electronic media (website building). The corporate brochure or company profile shall cover the following
   - History and establishment of PJT Jeneberang
   - Vision and mission
   - Organizational structure and the Board of Directors
   - Corporate development plan
   - Managed infrastructure and river administrative area
   - Other relevant data and information

2) Holding of periodical info-chambers and public consultation
   Public relation shall take initiative in socialization on the particular issues in river basin management among the stakeholders, in order to ensure the same perception on these issues.

3) Holding of contest or other "event marketing" to promote the corporation
   - Event marketing is the most effective way to attract public participation and raise the awareness on the services of the corporation and issues in river basin management.
   - Contest on the best performance community group on water resource conservation, for examples:
     - garbage and disposal management
     - home yard management
     - safe and clean water campaign
     - green belt planning, etc.

4) Study tour and student camping event around Bili-Bili reservoir (linked to tourism business operation)
   - Invitation to the teacher and student at schools in Gowa and Makassar
   - Collaboration with the local community to provide camp site for students
   - Manage action research with universities to increase the awareness on the river environment

The above activities can be started after the establishment of the corporation. Aside from this, it is also noted that introduction of the corporation needs to be started from year of 2005. Toward the establishment, a few times of seminar or workshop needs arranged by the JRBDP or Dinas PSDA to introduce and gain understanding on the importance of the corporation. The website for the company can be opened from year of 2006. Furthermore, one of the rooms available in the dam control office may be utilized as an exhibition room and info-chamber as a permanent facility for information provision to the public.

## J1.6 Customer management

Direct customers of the corporation will include PDAM, PLN, industry, and plantation operator. A sound management of the corporation will be strengthened by the strong customer base. The top management of the corporation should know the present situation of the customers and their needs to the corporation. For reference purpose, outline of major customers including the financial condition is presented in Appendix J-1.

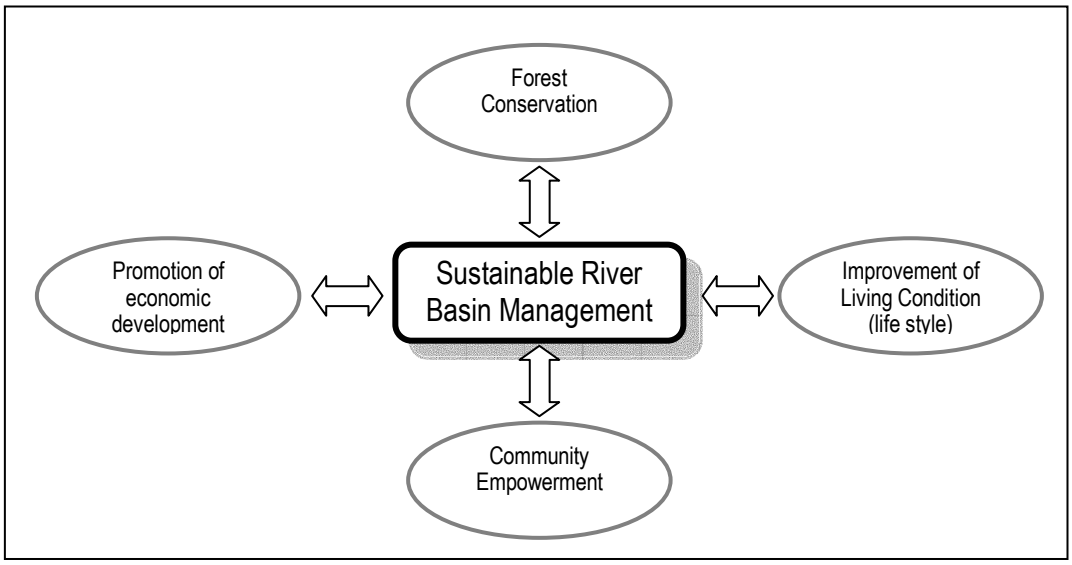
In order to continuously improve the service delivery, it is recommendable for the corporation to periodically monitor customer satisfaction, asking water quality and quantity, and service reliability through questionnaire. The result of evaluation will be reported to each business division and administrative bureau through top management. Questionnaire sample is presented in Table J1.2. In addition to this customer survey, it is suggested for PJT Jeneberang to periodically hold the discussion with the customers to identify their problems and needs.

PJT I defines the procedure on how to handle complaints from customers (and stakeholders). Complaints are directly handled by the person in charge such as the head of each water service division. Although this practice may be relevant, there is no mechanism to share and analyze the complaints and institutionalize the measures for the frequent complaints in the corporation. It is proposed that complaints will be collected and recorded by the administrative bureau (until a public relation coordinator) is appointed and distributed to the divisions concerned. Response to the customers will be prepared by those divisions, accompanied by the administrative bureau. The administrative bureau has to prepare the database for the frequent complaints and the results of customer satisfaction survey.

## J1.7 Stakeholder management

(1) Concept of Stakeholder Participation

Stakeholders participation is one of important aspects of the Jeneberang river basin management and needs to be actively enhanced by PJT Jeneberang. Stakeholders at the Jeneberang river basin are local governments, community groups including local NGOs, industries, university, Dinas PSDA, Dinas of Forestry, Dinas of Mining, Dinas of Tourism, Dinas of Agriculture, and Dinas of Plantation at both provincial and Kabupaten levels. An objective of the stakeholder participation is to ensure the harmony between the requirement of stakeholder needs (more resource utilization for economic and livelihood development) and requirement for sustainable river basin management (such as forest conservation).




**Concept of Stakeholder Participation**

(2) Promotion of Stakeholder Participation

Stakeholder participation will be managed by the public relations coordinator of PJT Jeneberang (the administrative bureau, before the coordinator is appointed). Stakeholders participation should start with their awareness raising on their duties and expected contributions in the river basin management. Responsibilities of the stakeholders except for Dinas for each sector are indicated in the table below:

**Responsibilities of Stakeholders**

| Stakeholders | Roles in River Basin Management |
|---|---|
| PJT Jeneberang | - Facilitate stakeholder participation<br>- Disseminate accurate information on river basin management<br>- Provide project/program information to stakeholders<br>- Provide technical support for the actions of the stakeholders |
| Local governments | - Provide river basin information to community<br>- Community empowerment through formal and non-formal education<br>- Infrastructure development (small scale: water supply, waste management, rural road)<br>- Participate in planning stage of the project<br>- Provide ideas about the river basin management |
| Community groups (NGO, religious, women and youth group) | - Participate in planning stage of the project<br>- Strengthen the linkage between local government and local people, and information channeling<br>- Provide technical assistance<br>- Provide ideas about the river basin management |
| Community (informal leaders, general public) | - Participate in planning stage of the project<br>- Provide ideas about the river basin management |

Providing relevant and accurate information to the stakeholders is an important activity of public relations, while avoiding misunderstanding of the stakeholders. Information from the local governments (or PJT Jeneberang) to the village level communities through the village head may not be adequately transferred. Since NGO groups have the better connection and access to the village communities, however, they have to be utilized as a channel of information

dissemination. Public relation coordinator should assist the networking and linkage strengthening between the local government (or PJT Jeneberang) and the local people.

(3) Activities for the Stakeholders Participation

Activities in which stakeholder participation will be required and promoted are considered as follows; 1) forest conservation, 2) economic development with sustainable resource utilization, 3) improvement of living conditions, 4) community empowerment and 5) organization of sand miners.

1) Forest conservation

(a) Objective

The stakeholder participation plays an important role in forest management and conservation, and needs to be actively promoted. Many people already understand an importance of forest management and conservation not only for the sustainable river basin management but also for their livelihood. A system through which PJT Jeneberang and the local government are able to render technical supports for forest conservation to the local community needs to be established.

(b) Activities for participation

Stakeholders can take a part in tree planting, community empowerment and legal support. How the stakeholders can be involved in forest conservation is summarized as below.

(i) Tree planting
- Promote planting trees for specific occasion (birthday, wedding, anniversary, etc.)
- Plant a specific type of tree (locally grown, Spatudea) to create a symbol of the community, so no one would like to cut the tree. This tree can also be used as tourism promotion
- Plant a tree that brings economic benefit such as fruit trees, coffee trees and tea
- Grow nursery trees to be used for planting trees

(ii) Community empowerment
- Teach community (NGO) and students the importance of forest conservation for their lives
- Teach community types of trees to be planted and impact of the tree planting on river basin and on their lives

(iii) Legal support
- Support regulation on prohibiting illegal logging.
- Support land use management.
- Controlling illegal logging by forming a community watch group.
- Create a rule for planting trees.

(c) Outcomes

The outcomes of forestry conservations are mitigation of landslide risk, water resource preservation, generation of livelihood activities, and rise in community awareness.

2) Economic development with sustainable resource utilization

(a) Objective

The Jeneberang river basin area is rich in forest and water resources that are closely tied with the lives of the communities and are subject to efficient utilization. Objective of economic development is to establish an economic cycle system in which the natural resources are efficiently utilized and contributing to increase in income, while ensuring sustainable resource management at a same time. Economic development activities shall be implemented with community initiative.

(b) Activities for participation

- Plantation : coffee/tea plantation is already operated in the upper stream area. Plantation can be promoted together with processing of coffee beans and tea in order to produce cake, ice cream salable to restaurants and hotels.
- Agriculture : promotion of the adequate way of utilizing slope land for cultivation which aims to increase productivity and minimize soil outflow to the river.
- Tourism : production of handicraft and souvenir made from locally available materials, operation of restaurant that serves local food.

(c) Outcomes

Generation of income-raising activities, efficient utilization of natural resources, and enhancement of tourism destination.

3) Improvement of living conditions

(a) Objective

Living conditions in some river basin area is poor, due to lack of accessibility to infrastructure and public services. Living conditions with poor garbage and sewerage management affect the river environment and water quality in particular, and need to be improved. Improvement of living conditions has to be collaboratively undertaken by the local government and community.

(b) Activities for participation

- Provision of portable water supply
- Provision of waste management through garbage collection
- Improvement of sewerage system or control sewage

- Improvement of access road conditions

(c) Outcome

Improved living conditions, improved river water quality.

4) Community Empowerment

(a) Objective

Objective of community empowerment is to raise the awareness of the stakeholders on river basin management and promote active stakeholder participation. Community empowerment has to be conducted in a variety of forms so that more people and groups are able to participate in.

(b) Activities for participation

- Campaign : campaign is an effective tool for empowerment by targeting the wider groups. Local governments together with PJT Jeneberang need to promote such campaigns.
- Education : schools have to be involved in empowerment activities by giving lectures on the river basin management. Empowerment at the younger age is more effective. Local governments and schools are responsible for such educational activity.
- Non formal education : non formal education is also used to empower NGOs and religion groups which are close to the local communities and have channel to access to. The effect of empowerment through non formal education is expected to be large.

(c) Outcome

Rise in awareness and increase in participation in the activities mentioned in the above.

5) Empowerment of traditional miners in the lower reach

(a) Objective

To ensure adequate sand mining practices along the river, PJT Jeneberang is suggested to back up a shift of traditional miners to the upper stream through preferential site allocation scheme and empowerment program.

(b) Activities for participation

Intending miners are requested to form mining co-operative (or any formal group) preferably with transporters as a condition of entry into the empowerment program. PJT Jeneberang may render technical assistance for the process of formation and strengthening of the mining co-operatives. The program comprises of the following components;

- Establishment of empowerment work team
- Design of sand mining scheme and empowerment support program
- Socialization workshop of the scheme and empowerment support program to the traditional miners
- Execution of empowerment program
  - Invitation to the traditional miners for empowerment support program
  - Co-operative (or formal group) formation and application support
  - Training for co-operative (or formal group) management and operation
  - Market survey of the sediment materials and their processing products
  - Design review of sand mining scheme and dissemination workshop
- Monitoring and evaluation of the empowerment program

After the above program, the PJT Jeneberang may provide further empowerment support to modernize those miners' co-operatives and provide the opportunity to start more value-added business activities. Proposal of such extended programs may include the followings. Expenses for such an extended training may be shared with the trainees.

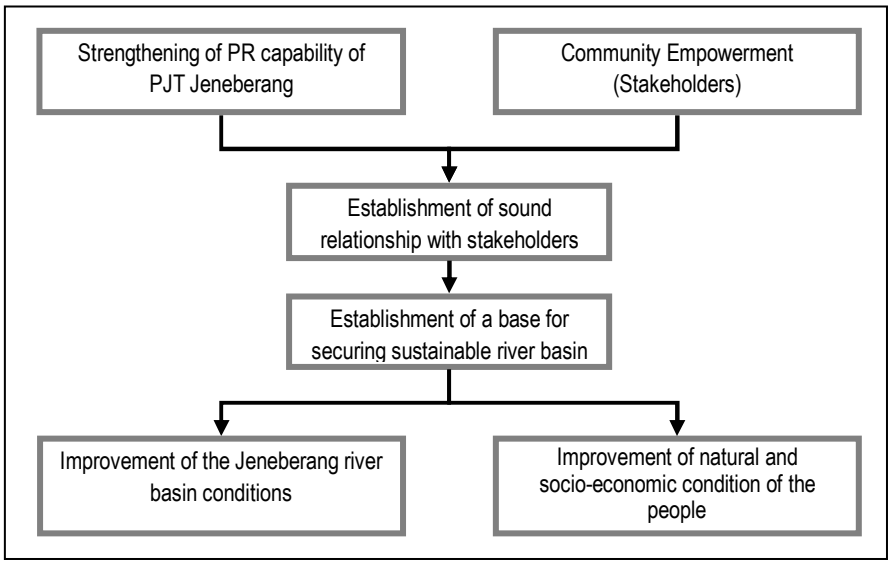
- Training for heavy equipment use and license acquisition (in association with the existing training providers)
- Training for brick or other product manufacturing (in collaboration with academic institutions that function as a program coordinator)
  - Study tour to the existing manufactures and study on market channel
  - Technical training for necessary skills
  - Training for the basic business management and operation

(c) Outcome

Shift of sand mining from the lower reach to the upper stream, and formation and empowerment of mining co-operative composed of the traditional miners in the lower reach.

(4) Strengthening of Public Relations and Stakeholder Participation

Stakeholder participation can be achieved both by strengthening of public relations capability of PJT Jeneberang and by community empowerment.




**Relation between public relations, stakeholders participation and river basin and socio-economic conditions**

(5) Specific Program for Community at the Upper Stream and Middle-Stream

Farmers at the lower stream and inhabitants at Makassar and Sungguminasa city are direct beneficiaries of the development and management of the Jeneberang river basin. Based on the stakeholder workshop conducted during the Study, communities at the upper stream area and middle stream area still argue and question about benefits of Bili-Bili reservoir construction and river basin management. Some tends to think that they are more victims than beneficiaries.

It is important to make efforts to raise the awareness of the local community especially at the middle stream area and the surrounding of the reservoir. Based on the result of the workshop, specific programs for the upper and middle stream area are suggested. The local communities and stakeholders at the upper stream are interested in nursery and tree planting and consider that tourism will be an alternative income source. At the middle stream area, there is tendency to compare the existence of water in Bili-Bili reservoir with their inadequate water supply.

**Specific Stakeholder Participation Program for the Upper Stream Area**

| Issue / objective | Action plan | Target group | Outcome / impact | Relevant stakeholder |
|---|---|---|---|---|
| Reforestatiton and watershed management | Community Nursery | 1. Specific tree group (Spatudea group)<br>2. Economic tree group ( Coffee, cacao, fruits) | • Seedling production, supporting National reforestation program ( GNRHL), community initiative reforestation<br>• Supporting soil conservation, reduce erosion | Dinas of Forestry, BPDAS, BPTH Sulsel, NGOs, Fac. of Agr. & Forestry in UNHAS, PDAM, PLN |
| | Agro-forestry & management training | 1. Coffee-farmers group<br>2.Tea-farmers goup<br>3.Cacao-farmers group<br>4. Horticulture farmers | • Suitable land management<br>• Improvement of skill and knowledge<br>• Better product quality | Dinas of Agric.<br>Dinas of Plantation<br>Leader of Farmers Group, Nittoh Teh Plantation, Fac. of Agr. |

| Issue / objective | Action plan | Target group | Outcome / impact | Relevant stakeholder |
|---|---|---|---|---|
| | | group | • Reduce soil erosion<br>• Increasing income of farmers | and Forestry in UNHAS |
| Economic enhancement of local community | Community initiative tourism development | 1. Handicraft group<br>2. Youth group for tourist promotion ( brochure, camping site)<br>3. Food and restaurant groups | • Promoting Malino and surrounding area as tourist spot<br>• Promoting characteristic of Malino<br>• Increasing number of visitors | Dinas of Trade and Industry, Dinas of Tourism, Diplome School of Tourism, UNHAS, PDAM, PLN |
| | Home industry promotion | 1. Starfruit sweets group<br>2. Bread fruit chips production<br>3. Traditional coffee shops<br>4. Cookie and cake from local produced agriculture product | • Increasing job opportunity<br>• Increasing of women's income<br>• Encourage women participation<br>• Encourage 'One village one commodity' program | PKK, Womens group, Fac of Agriculture in UNHAS, Centre for Appropriate Technology in UNHAS, Dinas of Cooperatives, PDAM, PLN |
| Bawakaraeng Disaster | Participatory warning system | 1. Community at (debris flow) disaster prone area<br>2. Volunteers | • Ensure community safety<br>• Empower community to minimize damage from (debris flow) disaster | Dinas of Social<br>Satkorlak and Satlak ORARI<br>Local Government (District, sub Distric and village) |
| Steps of activities | 1. Participatory needs assesment<br>2. Group forming ; institutional capacity building ; rule preparation, etc<br>3. Action plan formulation<br>4. Management training<br>5. Participatory field observation and OJT ( On the Job Training); skill training<br>6. Program implementation | | | |

**Specific Stakeholder Participation Program for Middle-stream area**

| Issue/ objective | Action plan | Target group | Outcome / impact | Relevant Stakeholder |
|---|---|---|---|---|
| Lack of water supply | Provision of water | Women group<br>PKK<br>Youth Group | • Improvement of living condition<br>• Supporting Clean river | Dinas of PSDA, NGO, Fac. of Agr. & Forestry in UNHAS |
| Dissatisfy of environmental condition | Garbage as fertilizer | Women group<br>PKK<br>Farmers group<br>Religious group | • Improvement of living condition<br>• Supporting Clean river<br>• Introduction of organic fertilizer | Centre for Appropriate Technology in UNHAS, Clean Tapioka Industry, Dinas of Sanitation, NGO |
| Low economic condition of community surrounding reservoir | Reservoir related program (tourism & fishery) | Women group<br>PKK<br>Youth Group<br>Religious group | • Promote event to attract tourism<br>• Provide guide<br>• Provide field trips for students | Local Government, Dinas of Tourism, Diplome School of Tourism in UNHAS |
| | | Fishermen and farmers group | • Increased skill and knowledge on fish culture and aqua culture | Fac. of Agriculture in UNHAS, Centre for Appropriate Technology in UNHAS, Dinas of Cooperatives |
| Sabo dam excavation | Brick production by small scale industry | Sand miners group | • Reduce the number of mining site at lower reach<br>• Alternative income for traditional sand miners | PIPWS Jeneberang, Dinas of Mining, Dinas of Regional Revenue, Local Industry at Makassar |
| Steps of activities | 1. Participatory needs assesment/ provision of informations<br>2. Group forming ; institutional capacity building ; rule preparation, etc<br>3. Action plan formulation<br>4. Management training<br>5. Participatory field observation<br>6. OJT ( On the Job Training); technical-skill training<br>7. Program implementation | | | |

(6) Schedule and resources

Public relations activity will be formally started at the initial state of establishment of PJT Jeneberang although some activities need to be conducted during the preparation stage. Public relation activities are tentatively scheduled as shown in the following table;

**Schedule of Public Relations Activities**

| Activities | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| **1. Activity for promoting accountability** | | | | |
| a. Publish brochure and leaflet on the corporation | | | | |
| b. Website formulation | | | | |
| c. Holding of contest or other event marketing | | | √ | √ |
| d. Holding info-cambers and public consultation | √ | √ | √ √ | √ √ |
| e. Permanent facility for information provision | | | | |
| **2. Customer and stakeholder management** | | | | |
| a. Regular meeting with customer | | | √ √ √ √ | √ √ √ √ |
| b. Stakeholder meeting | | | √ √ | √ √ |
| c. Customer satisfaction survey | | | | |
| d. Participatory need assessment for stakeholder | | | | |
| **3. Community livelihood support** | | | | |
| a. Participatory need assessment | | | | |
| b. General planning for livelihood | | | | |
| c. Operational planning for revolving fund | | | | |
| d. Start of SMEs/cooperative fund provision | After the profit is realized and accumulated | | | |
| e. Scholarship for poor families | | | | |
| f. Other support program to farmers/miners | | | | |
| **4. Awareness campaign** | | | | |
| a. Environmental awareness raising seminars | | | | |
| b. Other awareness raising program | | | | |
| c. Field study tour for students | | | | |

## J1.8 Authority to be Delegated

Based on the study of guidelines / manuals of PJT I, details of that are described in section J4, and discussion with PJT I management, it can be determined that financial and administrative management authority will be same as those of the head office and PJT Bengawan Solo. The amount of authorization of PJT I at present is summarized as follows:

**Authorized amount by PJT I**

(Unit : Rp. million)

| | For division level | For head office |
|---|---|---|
| Payment authority | | |
| - Advance payment | < 15 by Head of Bureau / Division | > 15 by Head of Finance Bureau |
| - Bill payment | None | < 5 by Head of Finance Bureau<br>> 5 by Director of Adm. & Finance |
| Contract | | |
| - Self management work | | |
| (Cost estimation) | < 50 by Head of Bureau/Division | > 50 by Head of Planning & Control Bureau |
| (Implementation) | None | < 100 by Head of Internal Affairs & Secretariat Section<br>> 100 by Head of General & HR Bureau |
| - Construction Procurement | < 50 by Head of Bureau/Division | 50-200 by Director of Operation<br>>200 by President Director |
| - Consultancy Procurement | None | < 25 by Head of R&D Bureau/Head of Plan & Control Bureau<br>> 25 by Director concerned |
| Goods and Other Service Procurement | None | < 25 by Head of HR Bureau/Head of Plan & Control Bureau<br>25-200 by Director of Adm. & Finance<br>> 200 by President Director |

Source: Extracted from guidelines of PJT I

The maximum amount of authorization to be assigned to a director will set as Rp. 50 million and maximum amount of advance payment will be Rp. 15 million, as in the case of Bengawan Solo. It is considered that the authorized amount is at a sufficient level for PJT Jeneberang, considering the distance from the Head Office and its self-governance operation. However it is suggested to discuss in the quarterly management meeting on whether there is any contract which requires prior approval or consultation of the Head Office at least during the first 2 years of operation.

**Authorization to be given to PJT Jeneberang**

| | |
|---|---|
| Contract | Rp.50 million |
| Bill Payment | Rp.50 million |
| Advance Payment | Rp.15 million |

## J1.9 ISO 9001 : 2000 Management System

Preparation and effective operation of the above management system, structured by the corporate planning, monitoring and review, internal audit, and customer and stakeholder relation management, will be vital requirement to the corporation and main responsibility of the top management at the same time. In this regard, adoption of International Standard Organization (ISO) 9001 : 2000 Quality Management System (QMS) is considered as one of effective approaches to shape and strengthen the corporate management system.

ISO 9001 QMS specifies a series of requirements on documentation, management responsibility, resource management, customer relation and product realization processes, measurement and analysis, internal audit, and others necessary to the corporate management activities.

Both PJT I and II have been certified with ISO 9001 QMS. Both corporations have set the quality policy and targets in their planning documents, as supreme goals of the corporate quality management. To achieve those targets in accordance with the quality policy, both PJTs have prepared QMS documents comprising of procedures with job flowchart, work instructions, template forms, supporting guidelines and manuals, that are required to realize the service and product of the corporation in accordance with customer requirements. External documents such as laws, regulations and decrees concerned with the corporation activity are also integrated as a part of QMS documents.

Proposed corporation is also recommended to acquire the certificate of ISO 9001 QMS. QMS should be regarded as a means of strengthening corporate management system and activities ranging from corporate planning, monitoring and review, internal audit, customer and stakeholder relation management. Introduction of QMS will also help clarifying the functional relationship among each job, and be a driver of continuous improvement for the better service and product realization, if effectively designed and operated.

Proposed corporation may start preparatory work towards acquisition of QMS certificate from the end of start-up phase, since most of quality documents such as procedures, work instructions, supporting guidelines and manuals (both for technical and non-technical matters) are well reviewed or documented under this technical assistance. Technical Section should be responsible for the preparation of QMS development as a coordinator, while receiving technical support from Quality Management Bureau of PJT I. It is also suggested that guidance seminar and training session on ISO 9001 QMS should be held for all the candidate staff during the preparatory phase of the corporation.

## J2 Financial Management

### J2.1 Framework of Financial Management

An objective of incorporation is to support sustainable national and regional development by ensuring financial sustainability together with institutional and physical sustainability. Financial sustainability of the corporation requires capital adequacy, profit making and soundness of financial ratio.

(1) Requirements by the Existing Regulations

**Purpose of incorporation**

Law No. 19/2003 on SOE Article 36 stipulates that the purpose and objectives of a Perum shall be engage in the business of rendering benefits to the public through provision of goods and/or services of appropriate quality at a price affordable by public, based on the principles of sound management.

**Paid in Capital**

According to Article 4 of the said law the state's capital for the establishment of a SOE shall come from the Sate Budget, reserve capitalization or other sources. Also it stipulates that a capital stake of the State in the establishment of a SOE with the fund coming from the State Budget should be determined in a government regulation.

According to the said Law, a new government regulation on investment of the State Capital to PJT I is needed for establishment PJT Jeneberang. For PJT Bengawan Solo establishment, GR No.45/2002 on additional capital investment to PJT I was issued.

GR No. 13/1998 on Public Corporation stipulates that Finance Minister undertakes the administration of the State Capital investment of Public Corporation.

**Working Capital**

GR No.6/1981 concerning funding the Exploitation and Maintenance of Irrigation Infrastructures authorized to collect fund as compensation from the beneficiaries of the water and water resources as well as the irrigation infrastructures, and from those whose activities have caused pollution to water and water resources for their business. (Note: This concept was recently modified in new Water Resources Law No. 7/2004 of March 2004; see Supporting Report B for detail)

GR No.93/1999 on PJT I authorized to collect and receive fees for funding O&M cost and MSRI Decree No.342/KPTS/M/2002 concerning the authority of PJT I to collect fees for funding O&M cost.

With the authority to collect and receive fee from the beneficiaries in direct or indirect manner, the corporation is expected to be independent gradually from funding by the government for the activities excluding those for social purpose, public welfare and safety, which should be covered by PSO (Public Service Obligation).

## J2.2 Procedures Applied to the Corporation

(1) Funding Plan of Paid in Capital

Generally speaking, basic sources of capital to establish a corporation, to start running and to sustain growth are equity (owner's capital), debt (borrowed capital), retained earnings and contributed capital (grant). For PJT Jeneberang capital investment will be made as follows:

1) Assets of Proyek Induk (JRBDP) to be transferred to the corporation for owned assets are planned, the value of which are calculated at Rp.3,438 million. The assets consist of office building with land and furniture, machine and tools for O&M work. This is a capital investment in kind.
2) Fresh money is required for initial operation which will be about Rp.6 billion to cover initial mobilization cost and start-up working capital. When PJT Brantas established in 1990, the central government made a capital loan in the amount of Rp.2.5 billion for initial fund which was later converted to paid-in capital without repayment. However in case of PJT Bengawan Solo, it was started as work area extension of PJT I so that PJT Brantas may use retained profits of PJT I for initial operation in Bengawan Solo River basin. The cash position of PJT I is becoming weak. During late 1990s, average cash balance was about Rp.20 billion, whereas in 2000s average cash balance decreased to Rp.10 billion.

(2) Funding Plan of Working Capital

It is expected fee collection from specific beneficiaries based on Beneficiary to Pay Principle in the form of river basin management fee. It is also expected to get compensation through APBN or APBD as indirect payment of the non-specific beneficiaries in the form of earmarking of water related tax collected by the government or other budgetary sources.

(3) Cash flow

Liquidity is the life-blood of the corporation and lack of cash is the only thing which could force the corporation out of business. There is difference in finance between the corporation and government. Government cash flow mainly comes from tax and some comes from other levies, whereas the corporation must generate cash flow from operation. Through cost recovery mechanism from beneficiaries, the corporation can get working capital. However the management has to make profit to generate cash flow for running the corporation.

(4) Cost recovery system

PJT should be running as a self-supporting corporation independent to the state budget under full cost recovery system. At present, however, revenue source of PJT is limited to surface water supply to PDAM, PLN and industry. The legislations have provided that the water users, such as factories who use rivers for liquid waste, may be required to participate in supporting the O&M cost of water resources. ISF is not available for cost recovery. Financial reform is required for PJT to achieve the target through introduction of cost recovery principle supported by the related authority including regional government. Existing Tax and Levy System in water resources management is summarized as follows:

**Existing Tax and Levy System related to Water Resource Management**

| Water use | Beneficiary payer | | Payee | |
|---|---|---|---|---|
| Surface water | | | ***Water use tax (PPAP)*** | ***Water use fee (IPAP)*** |
| | Specific water users | PDAM | Regional government | River basin management corp. |
| | | PLN | Regional government | River basin management corp. |
| | | Industry | Regional government | River basin management corp. |
| | | | ***Land & Building tax (PBB)*** | ***Irrigation service fee (ISF)*** |
| | Specific water users | Irrigation | Local government | Water users association (P3A) |
| | General users | Public | Local government | not applicable |
| Ground water | | | ***Water use tax (PPABP)*** | ***Water use fee (IPABP)*** |
| | Specific water users | PDAM | Regional government | not applicable |
| | | PLN | Regional government | not applicable |
| | | Industry | Regional government | not applicable |
| | | | ***Land & Building tax (PBB)*** | ***Water use fee (IPABP*** |
| | General users | Public | Local government | not applicable |
| Liquid waste | | | ***Liquid waste disposal tax (PPLC)*** | ***Liquid waste disposal fee (IPLC)*** |
| | Specific disposers | Industry | Regional government | Not introduced yet in South Sulawesi |
| | | | ***Land & Building tax (PBB)*** | ***Sewage fee(Biaya Tinja)*** |
| | General disposers | Public | Local government | Not introduced yet in South Sulawesi |

Source : the Study Team

## J2.3 Accounting Policy, Rules and Major Notes

(1) Policy and Rules

Law No.13/1998 instructed to Public Corporation to comply with Financial Accounting Standard. Accounting policy of PJT I is stipulated in Director's decree KP 001/KPTS/2000 based on MSRI Minster Decree No. 49/KPTS/M/2000 for Accounting Guideline. Accounting

system of PJT I also complies with financial accounting standard issued by Indonesian Accountant Association in 1999. Accounting is practiced based on the accrual basis, which means that the revenue is recognized when invoice has been issued even though the payment is not received yet. Cost is recognized when it becomes the obligation of the corporation even though it is not yet paid.

(2) Methodology of accounting system

Accounting can be categorized according to the tense as follows:

1) Past accounting

Past accounting is to be done immediately after the financial activities, and at the fiscal year end to record the annual results of operation and to report to the related authorities as well as disclose present situation of the corporation to stakeholders. PJT I basically conducts this task by using ASGL computer system.

2) Present accounting

In order to efficient budget execution, the current accounting requires promptness and accuracy. Based on the current year's operation, the following year's budget will be formulated and allocated to each department by the end of the current fiscal year.

Cost classification should be made for budget control in the accounting system without movement of cash. PJT I carry out present accounting through cost allocation manually using data base accumulated in ASGL system.

For reference, cost accounting system being planned by Balai PSDA is shown in Table J2.1 and Figure J2.1.

3) Future accounting

Future accounting is divided into medium term and long term. Medium term accounting includes finance planning for sustainable investment, such as planning of O&M, tariff making, cash flow projection and study of funding for investment. Long term accounting should be a strategic accounting to make a vision of the corporate management to appeal to the stakeholders and formulation of the master plan.

Description given above is summarized as follows;

**Methodology of Accounting System**

| Tense | Past Accounting | Present Accounting | Future Accounting |
|---|---|---|---|
| Main Purpose | Report and data base formulation | Budget execution and control | Investment and strategy formulation |
| Planning | Profit distribution after tax payment | Asset and profit management under cost allocation | Long-term and annual work plan, master plan |
| Implementation | Bookkeeping and account settlement | Cash flow management and payment verification | Tariff making and public relations |

## J2.4 Financial Management and Budget Control System of the Corporation

In PJT I, Director of Finance & Administration Bureau has a task of budget planning and control with assistance of 3 sections; Finance & Accounting Section, Management Accounting Section and Budget Section, through cash flow management on a weekly basis and budget allocation on a monthly basis for the coming 3 months.

Authority of decision making should principally be transferred to PJT Jeneberang because of the distance from PJT I head office. The amount authorized for the director is limited up to Rp.50 million; whereas even in this case the director should better have prior consultation to head office at the quarterly meetings at least for the first 2 years.

## J2.5 Sections for Financial Management

(1) Organization

In PJT I, financial management is conducted under the Administration and Finance Directorate. According to the job description of PJT I, the Director of Administration and Financial Bureau has main tasks as follows:

1) Management, administration and financial control
2) Analysis and policy evaluation and realization of investment
3) Budget allocation and utilization
4) Tariff policy

Under the director, there is a head of finance bureau who manage 3 divisions;

- Budget division
- Financial accounting division
- Management accounting division

Cash management is carried out by budget division, accounting and ASGL operation by financial accounting division, and payment verification and budget control by management accounting division.

(2) Accounting System for Financial Management

Computerized accounting system for PJT Jeneberang is planned to be installed with the same software being used by PJT I as ASGL (Accounting System General Ledger). This system was developed by PJT I with collaboration of University of Brawijaya and a certified accountant in 1990 and has been revised for improvement since 1999. The system is running parallel with manual bookkeeping so that reconciliation can be made at key points such as daily journal, account receivable/payable and cash flow. Operational flow chart of accounting system presently used by PJT I is shown in Figure J2.2.

The accounting system to be introduced covers the following functions and records;

1) Basic accounting computation programs,
2) Computation of water charges and other charges by client, based on actual records of raw water supply and other resources uses,
3) Updated status of collection of water charges and other charges,
4) Accounting record of actual O&M expenditures, classified by facility, work item and cost item (only direct cost items),
5) Inventory record of materials and equipment for O&M works.

**Computer introduction and training**

On November 4, 2004, ASGL system was introduced to the computer in JRBDP office in Makassar by PJT I and trial operation was made by the instructor from PJT I and the staff candidate of PJT Jeneberang. The result was satisfactory at the first stage of introduction. However, on the job training is inevitable to printout every needed document.

Also 7 days training by lecture was done for finance, ASGL, institution, HRD and water resources management. Lecture contents will be reported in separate documents.

As for financial management, the training was done in 3 days. The main subjects were:

| | | | |
|---|---|---|---|
| - | Planning | : | Long term plan (RJP) / work plan (RKAP) / operational plan (RKOP) |
| - | Accounting policy | : | Revenue and cost (water source and non-water source) |
| - | Bookkeeping and reporting | : | Guideline / daily journal / sub-ledger / financial statement |
| - | Payment | : | Advance payment / verification of payment documents |
| - | Tax | : | VAT (PPN) / income tax (PPh 21) / service tax (PPh 23) / corporate tax (PPh 25) |
| - | Cash flow formulation | : | Definition /function / calculation / estimation |

As for ASGL, it was done in 4 days. The main subjects were:

| | | | |
|---|---|---|---|
| - | Description of programming | : | Accounting cycle / flow chart |

- Operation : Data to be prepared / design code / menu structure / data access / data processing

Seven staff of accounting section candidate attended to the financial and ASGL training course. Training materials consist of text books, slides of power point and OHP. It seemed that the training was satisfactorily done.

## J2.6 Produced Documents and Reporting

According to accounting policy of PJT I in relation to the financial accountability, the corporation makes financial statement as follows;

1) Interim financial statement containing;
   - Balance sheet
   - Profit/Loss statement
   - Cash flow statement
   - Note to the financial statement
2) Annual financial statement containing;
   - Balance sheet
   - Profit/Loss statement
   - Cash flow statement
   - Retained profit statement
   - Note to the financial statement

B/S, P/L, cash flow statement, and profit distribution statement should be prepared on time for reporting, monitoring, evaluation and control purposes. For this purpose, PJT I developed ASGL (Accounting System General Ledger) computing system. PJT Jeneberang will introduce the same system for independent accounting.

3) Periodical reports

- Daily: Daily journal is produced by ASGL every day to verify daily transaction
- Weekly: Cash flow report is prepared by Budget Division and reported to Head of Finance Bureau
- Monthly: Financial report is prepared by Financial Accounting Division, signed by Head of Finance Bureau for reporting to Board of Directors.
- Quarterly and semiannually: Financial report is prepared by Financial Accounting Division. The report contains (i) executive summary, (ii) financial report and (iii) performance report. After resolution of Board meeting, the report is submitted to MPW and SMSOE with the president director's signature.
- Annually: Annual report is prepared by Management Accounting Division and approved by the Board of Directors and the Supervisory Board. It should be submitted to MPW and SMSOE with signature of all directors and supervisory board members.

## J2.7 Lesson Learnt

(1) Budget planning in PJT I

Each year's profit is planned in the long-term plan that should be approved by SMSOE in advance. Yearly budget planning starts by estimation of water supply revenue, which is calculated from water supply volume and tariff rate. Total revenue is estimated by adding projected revenues from non-water business. Then planned profit (about 15% of the revenue, before tax) is deducted from the revenue. The remaining balance is then allocated primarily to fixed cost items and then variable cost items. The major fixed costs consist of personnel cost (about 20% of the revenue) and general expenses including depreciation (about 10% of the revenue). The rest is allotted to cover variable costs; i.e. O&M expenditure. Thus, only a limited budget is made available for O&M works.

Since the tariff rate of raw water supply is controlled by the government at a relatively low level, existing PJTs are still not capable of attaining full recovery of the O&M cost from water supply revenues. At present, the budget available for O&M work can cover only 30 to 40 percent of the required O&M norms[3]. As the result, the water resource facilities are not properly maintained and major rehabilitation work often obliged in the past.

Conceivable measures for rectifying the above situation will be either (i) increasing raw water tariff or (ii) government funding support for some of the corporation's services for which the government shall shoulder the costs under the concept of public service obligation (PSO).

(2) PJT I Bengawan Solo

The initial investment in fresh money by the central government was not provided for PJT Bengawan Solo when it was established. Instead, the Principal Project Office (PBS) committed to shoulder some O&M works on behalf of PJT to minimize their O&M expenditures[4]. This is not a proper way of O&M implementation as far as PJT is assigned as an agency responsible for the O&M work. The government shall provide necessary funds required for the establishment.

[3] Workshop for Institutional Evaluation of Water Resources Management Agency, PTPA and PPTPA, Semarang, 20-22 August 2002 PJT I & II

[4] Final Report for the Study under JBIC SAPS for 24 Infrastructure Rehabilitation Projects July 2001

## J3 Capacity Development Needs

### J3.1 Administrative and Business Management

(1) Business planning skill

To be able to elaborate planning document and business proposal, the candidate staff who will belong to Technical and Administration / Financial Management sections (and those who move to non-water business unit at a later stage) are recommended to be familiar with the basic skills, procedure, know-how and documentation of business planning. They are supposed to mainly involve in preparation and compilation of the corporate long-term plan / annual work plan, and non-water business planning (tourism / land utilization). Business planning skill covers the following items;

- Internal factor analysis (customer / market adaptability, logistical and operational system, financial and organizational aspects)
- External factor analysis (legal, institutional, socio-economic, stakeholder aspects)
- Vision and strategy building
- Program and goal planning (action plan, facility plan, procurement plan, scheduling, staffing, financial plan)
- Monitoring / evaluation planning
- Planning documentation

A series of class-room lecture on the above will be proposed in parallel to actual planning work (through on-the-job training). Training provider can be sourced from PJT I or other institutions. Acquisition of such skills will contribute to quality improvement of the corporate plan (i.e. river basin management plan).

(2) Quality Management System Training

During the preparatory phase of the corporation, a series of guidance seminar and training session on ISO 9001 QMS should be held for all the candidate staff to learn about QMS and expedite the certificate acquisition process after the operational start.

Guidance seminar on QMS will address the following particulars in order to raise familiarity to QMS at initial stage and adequately comprehend the objectives and merits of adoption.

- History and development process of ISO 9001 QMS
- Terms and definition of QMS
- “Appearance” of QMS and structure of quality documents
- Actual operation in PJT - case study I
- Question and answer, exchange of opinion

After the above initial training process, training seminar on QMS will be held for the candidate staff to acquire information and capability to prepare for QMS in practice. Training seminar will cover the following particulars;

- Management responsibility in QMS (common)
- QMS requirements for resource management (common)
- QMS requirements for customer / stakeholder related process (for each relevant unit)
- QMS requirements for product realization process (for each relevant unit)
    * Design and development process
    * Purchasing and procurement process
    * Production and service provision process
    * Monitoring / measuring device controlling process
- QMS requirements in measurement, analysis and improvement (for each relevant unit)
- Work schedule of the preparation activities of PJT Bengawan Solo - case study (common)
- Question and answer, exchange of opinion

The above training will be provided with sufficient length of duration so as to penetrate the concept of QMS into all the candidate staff. Guidance and training provider can be sourced from PJT or other institutions specialized in QMS. Acquisition of such knowledge and skills will contribute to enhancement of familiarity to job description and process, and ultimately performance of river basin management in the future.

## J3.2 Financial Management and Accounting

(1) Financial Management Skills

Professional skill for corporate finance is required to establish and manage the new corporation. Trainees should have academic background of at least university graduate (S-1) in the faculty of finance or economy or have satisfactory experience in this field. Negotiation capability is required to deal with stakeholders. Personality is important, but negotiation skill will be promoted through team-working with PJTs' management and appropriate consultant.

The corporate performance depends largely on the financial management in the areas of planning, implementing and monitoring under the guidance of PJT I head office. Financial management skill covers the following items;

- SWOT analysis ability for the long term plan (RJP)
- Budget formulation for the annual work plan (RKAP)
- Financial analysis and evaluation
- Cash flow management
- Accounting and bookkeeping knowledge
- Depreciation
- Tax regulation
- Tariff calculation and negotiation

Certain items are covered by the training mentioned above; however, for ASGL accounting system and tariff calculation, on-the-job training is needed. Training provider can be sourced from other institutions too. Acquisition of such skills will contribute to quality improvement of the corporate operation.

(2) Accounting Skills

Accounting operator needs D-1 grade of accounting college graduate having knowledge of double entry bookkeeping as well as computer operation skill. PJT I head office accounting operator requires being at least D-3 grade of academic diploma in accounting. Accounting skill covers the following items;

- Accounting policy and methodology
- Financial statement
- Financial analysis and ratio evaluation based on guideline
- Depreciation
- Salary system
- Withholding tax and tax payment
- Computer operation

A series of class-room lecture on the above will be proposed in parallel to actual planning work (through on-the-job training). Training provider can be sourced from PJT I or other institutions. Acquisition of such skills will contribute to quality improvement of the corporate operation (i.e. river basin management plan).

## J4 Guideline and Manual

Guidelines and manuals related to (1) accounting (2) reporting (3) finance (4) corporate management and (5) public relations are listed as shown in Table J4.1. Basically all PJT I's guidelines and manuals should be applied to PJT Jeneberang, except director's authorization as mentioned above.

# *Tables*

## Table J1.1 Proposed Frame of Monitoring and Review through Periodical Meetings for the Jeneberang Corporation

| Meeting | Input Material and Agenda | Minutes, monitoring and follow-up on the decisions in the meeting | Notes |
|---|---|---|---|
| Monthly<br>Board of Directors Meeting (RD) | 1. Follow-up report of the decisions made in the previous meeting (progress and evaluation)<br>2. Information on external / internal conditions (institutional, legal, socio-economic and other major changes that may affect the policy, strategy and management of the corporation)<br>3. Performance review of the corporation, including;<br>- Brief achievement review of RKOP / RKAP, quality targets (of the corporation and each directorate)<br>- Highlights of service / non-service activity<br>- Customer / stakeholder information<br>4. Issues and necessary efforts subject to the board approval | 1. Minutes preparation<br>- Administration / Finance Director in PJT I<br>2. Minutes distribution<br>- Board of Directors | -To be held at the head office<br>-Board of Directors to be invited |
| Monthly<br>Management Coordination Meeting (RKM) | 1. Monitoring result on the decisions made in the previous meeting (progress and evaluation)<br>2. Information on external / internal conditions<br>3. Performance review of the corporation, including;<br>- Brief achievement review of RKOP / RKAP targets of the corporation, each directorate, and the relevant divisions / bureaus<br>- Highlights of service / non-service activity<br>4. Issues and efforts, related to corporate operation, that cannot be tackled by individual working units<br>5. Result of Board of Directors meeting | 1. Minutes preparation<br>- Head of unit (by turn)<br>2. Minutes distribution<br>- Board of Directors, Heads of Division / Bureau (including Jeneberang Directorate), Internal Auditor, Corporate Secretary<br>3. Responsible for monitoring of the decisions<br>- Head of Internal Audit<br>- Head of Technical Section (for Jeneberang matter)<br>4. Period of monitoring<br>Once in a month, within at least 1 (one) day before RKM | -To be held at the head office<br>-Directors, Heads of Bureau, Division, and Internal Auditor, Corporate Secretary to be invited<br>-Recommended that at least Head of Administrative / Finance Section and one Head of Water Services Division attend with Director for Jeneberang Directorate |
| Monthly<br>Unit Coordination Meeting (RKU) | 1. Monitoring result on the decisions made in the previous meeting (progress and evaluation)<br>*2. Information on external / internal conditions*<br>*3. Performance review of the corporation (Jeneberang's working area), including;*<br>- *Brief achievement review of RKOP / RKAP targets relevant to Jeneberang directorate*<br>- *Highlights of service / non-service activity*<br>*4. Customer and stakeholder claims, feedbacks*<br>5. Issues and efforts, related to corporate operation, that cannot be settled by individual working units | 1. Minutes preparation<br>- Head of Administration / Finance Section in Jeneberang Directorate<br>2. Minutes distribution<br>- Board of Directors, Heads of Division / Section in Jeneberang Directorate, other relevant Bureaus of the head office<br>3. Responsible for monitoring of the decisions<br>- Head of Technical Section in Jeneberang Directorate<br>4. Period of monitoring<br>Once in a month, within at least 1 (one) day before RKU | -To be held at Jeneberang<br>-Director for Jeneberan Directorate, the Heads of Section and Division to be invited<br><br>*Oblique input and agenda is added to the normal scope of RKU, since full-scope and independent review for the working area of Jeneberang at site is recommended before attending the whole corporation review meeting.* |

| Meeting | Input Material and Agenda | Minutes, monitoring and follow-up on the decisions in the meeting | Notes |
|---|---|---|---|
| Monthly<br>Central Management Evaluation Meeting (RTM-P) | 1. Monitoring result on the decisions made in the previous meeting (progress and evaluation of the corrective and preventive actions undertaken)<br>2. Result of external / internal audits<br>3. Monitoring result and assessment on Quality Management System (QMS)<br>- Achievement review of quality target<br>- Issues including inappropriate product / service, non-conformities, needs of procedures / work instruction revision, identified by each RTM-U<br>4. Customer and stakeholder claims, feedbacks, customer satisfaction analysis<br>5. Evaluation report on the effectiveness and efficiency of QMS (only for the first RTM-P)<br>6. Other suggestions for improvement | 1. Minutes Preparation<br>- Head of Quality Management Bureau<br>2. Minutes distribution<br>- Board of Directors, Heads of Division / Bureau (including Jeneberang Directorate), Internal Auditor, Corporate Secretary<br>3. Responsible for monitoring of the decisions<br>- Head of Quality Management Bureau<br>- Head of Technical Section (for the Jeneberang matter)<br>4. Period of monitoring<br>Once in a month, at least in the 3rd week | - To be held at the head office<br>- A few Directors, Heads of Bureau, Division, and Internal Auditor, Corporate Secretary, quality control staffs to be invited<br>- Recommended that at least Head of Technical Section or one Head of Water Services Division attend with Director for Jeneberang Directorate |
| Monthly<br>Unit Management Evaluation Meeting (RTM-U) | 1. Monitoring result on the decisions made in the previous meeting (progress and evaluation of the corrective and preventive actions undertaken)<br>2. Monitoring result and assessment on QMS<br>- Achievement review of quality target<br>- Issues including inappropriate product / service, non-conformities, needs of procedures / work instruction revision<br>3. Result of external / internal audits<br>4. Performance review of the corporation (Jeneberang's working area), including;<br>- Brief achievement review of RKOP / RKAP targets relevant to Jeneberang, and each belonging division / section<br>5. Customer and stakeholder claims, feedbacks<br>6. Other information / issues | 1. Minutes Preparation<br>- Head of Division or sub-division, and section<br>2. Minutes distribution<br>- Director for, Heads of Division / Section in Jeneberang directorate, other relevant bureaus of the head office<br>3. Responsible for monitoring of the decisions<br>- Head of division or sub-division, and section<br>4. Period of monitoring<br>Once in a month, within at least 1 (one) day before RTM-U | - To be held at each belonging unit in Jeneberang<br>- All the staff in each Section, and Division (or sub-Division) to be invited |

**Table J1.2 INDICATOR ON CUSTOMER SATISFACTION**
**RAW WATER SERVICES FOR INDUSTRY**

Area : Water Resources Division ……
Water Resources Sub Division: …… Year: ……..…

| No | Indicator description | Expectation Score | | | Perception Score | | |
|---|---|---|---|---|---|---|---|
| | | G | F | P | G | F | P |
| I | Tangible | | | | | | |
| 1 | Customers expect that PJT I conducts water conservation effort (quantity & quality) | 1 | 2 | 3 | 1 | 2 | 3 |
| 2 | In order that reservoir/dam/gate/channel function, PJT I should be maintained properly | 1 | 2 | 3 | 1 | 2 | 3 |
| II | Reliability | | | | | | |
| 3 | Customers expect that water debit (l/sec)/volume (m3) required can be fulfilled by PJT I | 1 | 2 | 3 | 1 | 2 | 3 |
| 4 | Customers expect that supply water by PJT I can be done according to schedule agreed | 1 | 2 | 3 | 1 | 2 | 3 |
| 5 | Record of water used by customers through Surface Water Abstraction Letter that is conducted with customer can be done in appropriate time | 1 | 2 | 3 | 1 | 2 | 3 |
| 6 | Customers expect that PJT I assign staff who have capability in communication | 1 | 2 | 3 | 1 | 2 | 3 |
| III | Responsiveness | | | | | | |
| 7 | Customers want/expect that every occurrence in-proper product/services, PJT I as soon as possible shall inform to the customer in 1 x 24 hours at the latest | 1 | 2 | 3 | 1 | 2 | 3 |
| 8 | Customers expect that PJT I can fulfill addition of water requirement (momentary) | 1 | 2 | 3 | 1 | 2 | 3 |
| 9 | Customers expect that PJT I could follow up their complaints as soon as possible | 1 | 2 | 3 | 1 | 2 | 3 |
| IV | Assurance | | | | | | |
| 10 | Customers expect that every PJT I officer who conduct communication in water services to the customer can assure them | 1 | 2 | 3 | 1 | 2 | 3 |
| 11 | Customers expect that every PJT I officer who comes to them are has well behaved and speak politely to the customer | 1 | 2 | 3 | 1 | 2 | 3 |
| 12 | Customers expect that every PJT I officer who comes to them should have capability to solve problem effectively | 1 | 2 | 3 | 1 | 2 | 3 |
| 13 | Customers expect that PJT I do its best to maximally fulfillment water requirement when needed | 1 | 2 | 3 | 1 | 2 | 3 |
| V | Empathy | | | | | | |
| 14 | Customers expect that every difficulties faced customer shall get special attention from PJT I as soon as possible | 1 | 2 | 3 | 1 | 2 | 3 |
| 15 | Customers expect that PJT I can spends special time to conduct communication/information for 24 hours | 1 | 2 | 3 | 1 | 2 | 3 |

Suggest/Comment (if any):
.....
.....
.....

....., .....
Customer

Note:
Expectation Value : is customer expectation on PJT I raw water services
Perception Value : is fact/actual PJT I capability on services customer according to customer perception

Sign

Customer expectation and perception regarding the PJT I services/capability, scored:
- Good/important
- Fair good/important
- Poor

Full Name

## Table J2.1 Balai PSDA Activities and Cost Accounting

| No | Balai Activity/Service | Outcome | Beneficiary | Cost Chargeable for Service | Cost Accounting for Contract | Cost Allocation for Recovery |
|---|---|---|---|---|---|---|
| 1. | Maintenance of up to date hydrology database | 1. Hydrology data available for all types of users/uses | - Public<br>- Balai PSDA & Govt. Agencies<br>- Private Institution<br>- Consultants | - Free<br>- Free<br>- Charge (cost of copying)<br>- Charge (cost of copying) | ✓<br>✓ | <br>✓<br>✓<br>✓ |
| 2. | Maintenance of GIS | 1. GIS for basin and infrastructure for WRM and regulation | - Balai and other government agencies | Free | ✓ | |
| 3. | WQ Monitoring and support to pollution control | 1. Long term and incidental WQ data | - Public<br>- Private institution<br>- Govt. Agencies (Bappedalda) | Free<br>Polluter Pays<br>Free | ✓<br><br>✓ | <br>✓<br> |
| 4. | River Infrastructure Management | 1. Well maintained river system for water delivery<br>2. Support for flood management<br>3. Control on sand mining (Gol. C) | - Public (Water Users)<br>- Private Inst.<br>- Public<br>- Public | Charge to water allocation and irrigation<br>-do-<br>Free<br>Fee (Iuran) | ✓<br>✓<br>✓<br>✓ | ✓<br>✓<br><br>✓ |
| 5. | Water Allocation | 1. Optimize water use<br>2. Increase production<br>3. Assured supply for drinking water & other priority 1 water users | - Water Users<br>- Public<br>- Water Users<br>- Public<br>- PDAM<br>- Private Institution | License Fees<br><br><br><br>Free<br>License Fees<br>License Fees | ✓<br><br><br><br>✓<br>✓<br>✓ | ✓<br><br><br><br><br>✓<br>✓ |
| 6. | Flood Management | 1. Technical support for flood control<br>2. Engineering support for flood fighting | - Public<br>- Govt. institution (involved in flood control)<br>- Public | Free<br>Free<br><br>Free | ✓<br>✓<br><br>✓ | |
| 7. | Irrigation Management (Inter-District System) | 1. Equitable water allocation<br>2. Increased production<br>3. Maintenance of Irrigation Infrastructure (assets) | - Irrigators (Public)<br>- Public<br>- Government Institution | Service fee<br>Free<br>Free | ✓ | ✓ |
| 8. | Balai Operation and Administration | Institutional efficiency | Balai/Government | Distributed as joint cost | ✓ | ✓ |

Source : Final Report Vol. 1 BWRM JIWMP and IWIRIP

## Table J4.1 Guidelines and Manuals (1/7)

| Name | | Contents | Documentation by PJT I | Operation and Authorization in PJT I | Proposed Operation and Authorization in PJT I Jeneberang |
|---|---|---|---|---|---|
| **1** | **Accounting** | | | | |
| (1) | Finance accounting standard | International standard of accounting | Standar Akuntasi Keuangan (SAK) | International standard | Same |
| (2) | Accounting guideline for SOE | Manual for implementation of accounting and formulation of financial report | Kimpraswil Minister Decree No.49/KPTS/M/ 2000 | Concept of accounting policy of PJT I | Same |
| (3) | ASGL computer system | Hardware specification, Source code, operation manual | General guidelines of ASGL System & Back up data to be provided | Operation by finance staff as a operator and supervised by finance expert | Same |
| (4) | ASGL accounting manual | Transaction data, Verification & authorization, input, Output: daily journal of sales & account receivable, purchase & account payable, cash & bank payment, cash & bank receipt, memorial | General guidelines of ASGL System | Daily record by finance staff | Same |
| (5) | Verification System | General procedure of verification process | QI/PJT/47 | An officer other than operator who input the data | Same |
| (6) | Accounting policy of PJT I | General guideline for financial accounting of the corporation | KP.001/KPTS/D A/2000 | Directors' Decree based on Kimpraswil Minister Decree No.49/KPTS/M/2000 | Same |
| (7) | Depreciation | Owned assets depreciation/amortization | KP.001/KPTS/D A/2000 | Financial Div. calculate deprecation and Head of Financial Bureau approves | Calculation will be made by H.O. |
| (8) | Managed assets | Administrative Guidelines for State-Owned-Inventories/State Assets Managed by Jasa Tirta I, Determination of Types of State-Owned-Inventories/State Assets Managed by Jasa Tirta I | Kep. MPW No.180/KPTS/2 004 & Kep. MPW No.181/KPTS/2 004 | Inventory (Logistic) Sec. under Human Resources and General Bureau keeps record and Head of HR & General Bureau is responsible | General, Technical, Admin. & Finance Sec. keeps record and report to HO after signature of Director. |
| (9) | Elimination | Work instruction of assets elimination criteria | QI/PJT/26 | President Director applies to MOF | Same |
| (10) | Historical record | Work instruction of historical assets record for aiming at maintenance activity | QI/PJT/39 | Inventory (Logistic) Sec. under Human Resources and General Bureau keeps record and Head of HR & General Bureau is responsible | General, Technical, Admin. & Finance Sec. |

## Table J4.1 Guidelines and Manuals (2/7)

| Name | | Contents | Documentation by PJT I | Operation and Authorization in PJT I | Proposed Operation and Authorization in PJT I Jeneberang |
|---|---|---|---|---|---|
| | | | | | keeps record and report to HO after signature of Director. |
| (11) | Goods inventory record & General administration of Goods inventory record | Work instruction accounting/report goods inventory by determining assets type (managed or owned etc.) | MI/PJT/01& 11 | (a) Inventory Book made by Inventory Section (Bagian Perlengkapan) and signed by Head of General & HR Bureau and Head of Finance Bureau.<br>(b) Inventory Labeling managed by Inventory Section, checked and signed by Head of Inventory Section.<br>(c) Inventory Annual Report made by Inventory Section after receive of information from user (Bureau/Division), checked and signed by Head of General & HR Bureau and Director. The report will be submitted to MSRI | General, Technical, Admin. & Finance Sec. keeps record and report to HO after signature of Director. |
| (12) | Owned assets | | Same as above | Same as above | Same |
| **2** | **Reporting** | | | | |
| (1) | Financial statement | B/S, P/L, Cash flow | KP.001/KPTS/DA/2000 | Approval Monthly by Head of Finance Bureau & if necessary to be sent to Ministry, after President Director's approval | Same |
| (2) | Evaluation | Report on Performance Assessment through to Trimester II Year 2004(9/30) | KEP-100/MBU/2002 | All Directors | Same |
| a) | Finance | ROE(15)/ROI(10)/Cash R(3)/Current R(4)/Collection P(4)/PP(4)/TATO(4)/Equity R(6)=50:2001/44.5 & 2003/41.0 | KEP-100/MBU/2002 | Calculation: Management Accounting Section's responsibility | Same |
| b) | Operation | 35:2001/34.4 & 2003/34.0 | KEP-100/MBU/2002 | Calculation: Controlling & Planning Program Section's responsibility | Same |
| c) | Administration | 15:2001/15.0 & 2003/15.0 | KEP-100/MBU/2002 | Calculation: Management Accounting Section's responsibility | Same |
| (3) | Monthly report | | Guideline of monthly financial report | Finance Accounting Section responsibility and signed by Chief of Bureau to be presented to Board of Directors as internal report | Same |
| (4) | Quarterly Financial report | Financial Report Trimester II Year 2004 | Guideline of quarterly financial report | (i) Executive summary (ii) Financial report (iii) Performance report: Finance Accounting Section responsibility. After resolution of board meeting report will be submitted to MSRI and MSOE with President Director's Signature. | Together |
| (5) | Annual report | Annual Report Year 2003 | KEP-101/MBU/2002 & QP/PJT/22 | Accounting & Management Section has responsible to make report. Annual report should be approved by Board of Director and Board of Commissioner before submitted to MSOE & MSRI | Finance Sub-Sec has responsible to make report and after approval by Director Data to |

## Table J4.1 Guidelines and Manuals (3/7)

| Name | | Contents | Documentation by PJT I | Operation and Authorization in PJT I | Proposed Operation and Authorization in PJT I Jeneberang |
|---|---|---|---|---|---|
| | | | | | be sent to HO. |
| (6) | Audit | | | | |
| a) | Internal audit | Procedure of internal audit & Implementation | QP/PJT/37 & MP/PJT/14 | Internal Audit Unit makes Annual Audit Program and signed by President Director. Program will be implemented by Internal Audit staff | Same and HO internal Auditor will make audit |
| b) | Outside audit | | | Board of Commissioner applies audit to independent auditor | Same |
| **3** | **Finance** | | | | |
| (1) | Payment authority | | | | |
| a) | Advance payment | General procedure of request and responsibility of advance payment | KP.085/KPTS/DU/1993, No.065/KPTS/DA/98,No.042/KPTS/DA/99 & QP/PJT/51 | Contract amount <=Rp 15 mil. Advance payment by Bur/Div, > Rp15 mil. Payment will be made from Head office, Div./Bureau makes Quarterly Cash Using Program for cash flow management and should be approved by related Director. Request form made by Head of Div./Bureau and must be agree with the program, if not: < 10% up to program approval by Head of Finance Bureau, 10-25% up to program approval by related Director, > 25% up to program approval by President Director. Approval payment: < 5 mil. by Head of Finance Bureau, > 5 mil. by Director of Admin. & Finance. | < Rp. 15 mil. |
| b) | Bill payment | Procedure of bill payment | QP/PJT/52 | Invoice letter made by partner/supplier. Approval payment: < 5 mill. by Head of Finance Bureau, > 5 mill. by Director of Adm. & Finance | <Rp.50 mil. |
| (2) | Collecting revenue | General procedure of collecting revenue | MP/PJT/16 | | |
| a) | PLN | The amount of kWh production recorded on Minutes of Meeting. PJT I issues Water Fee Collection Letter one a month. | | Water Fee Collection Letter signed by Head of Finance Bureau on behalf of Director and the receipt can signed by Head of Budget Section. Monitoring by Budget Section. | Water Fee Collection Letter signed by Head of Sec. on behalf of Director, receipt can be signed by Head of Section. Monitoring by HO Budget Section. |
| b) | PDAM & Industry | Water Abstraction Enactment (SP3AP) will be signed by customer, Balai PSDA and PJT I. Based on the SP3AP the local government (Revenue Agency) issues Fee Enactment (SKI) | | SKI will be sent to PJT I Finance Bureau and distributed to staff of related Division who will submit SKI & Receipt signed by related Head of Division/Sub Division, except for PDAM Surabaya signed by Head of Budget Section to each customer. Monitoring by related Division and Finance Bureau (Budget Section) PJT I pays collection fee to local government 5% of collected fee | Water Fee Collection Letter signed by Head of Sec. on behalf of Director, receipt can be signed by Head of Section. Monitoring by |

## Table J4.1 Guidelines and Manuals (4/7)

| Name | | Contents | Documentation by PJT I | Operation and Authorization in PJT I | Proposed Operation and Authorization in PJT I Jeneberang |
|---|---|---|---|---|---|
| | | | | | HO Budget Section. |
| c) | Non-water services | Issue invoice letter based on contract according to the progress of work | | Invoice letter signed by Head of General Division or Head of Project if the location far from headquarter (or outside Province). Monitoring by related sub division (construction, equipment etc) and Finance Bureau (Budget Section) | Water Fee Collection Letter signed by Head of Sec. on behalf of Director, receipt can be signed by Head of Section. Monitoring by HO Budget Section. PJT J also must pay collection fee for SP3AP and SKI at 5% |
| (3) | Procurement | Adjustment on Authorization Limit for Goods and Services Procurements, Construction Services and Consultancy Services(9/30) | KP046/KPTS/DA/2003 | | |
| a) | Construction | Procedure of Construction Procurement | QP/PJT/28 | <Rp.50 mil.: Div.Chief, Rp.50-100 mil.: Director of operation, Rp.100-200 mil.: Tender & Director of operation, >200 mil. : Tender & President Director | <Rp.50 mil. |
| b) | Consultancy | Procedure of Consultancy Service Procurement | QP/PJT/29 | <Rp.25 mil.: Head of R&D Bureau/Planning & Control Bureau, Rp.25-50 mil.: Related Director, > 50 mil.: Tender & Related Director | Same |
| c) | Goods and Other Services procurement | Procedure of Goods and Other Services procurement | QP/PJT/27 | <Rp.25 mil.: Head of HR & Gen. Bureau/Planning & Control Bureau/Div., Rp.25-100 mil.: Director of Admin. & Finance, Rp.100-200 mil.: Tender & Director of Admin. & Finance, >200 mil. : Tender & President Director | < Rp. 50 mil. |
| (5) | Self management work | Maintenance, repair of infrastructure and equipment | QP/PJT/10 | Cost estimation in Work plan: < Rp.50 mil.: Head of Div. or Head of HR & General Bureau , > Rp.50 mil.: Head of Bureau of Planning and Control & if amount change: Director's approval, Implementation: H.O. < Rp.100 mil.: Head of Internal Affairs & Secretariat Sec. of General & HR Bureau, > Rp.100 mil.: Head of General & HR Bureau, In Division; < Rp.100 mil.: Head of Internal Secretariat Sec. of HR & General Bureau, > Rp.100 mil.: Head of HR & General Bureau, Div.: <Rp.100 mil.: Chief of Sub Div. > Rp.100 mil.: Head of Div. In the Field Equipment rental:<br>< Rp.100 mil.: Head of Sub Div.of Equipment rental,<br>> Rp.100 mil.: Head of Div. of General Services | < Rp. 50 mil. |
| (6) | Contract | Supervisory work of contractor, | QP/PJT/11 | Head of Bureau or Div. or official appointed by Director | Same |

## Table J4.1 Guidelines and Manuals (5/7)

| Name | | Contents | Documentation by PJT I | Operation and Authorization in PJT I | Proposed Operation and Authorization in PJT I Jeneberang |
|---|---|---|---|---|---|
| | work | providing materials and equipment | | | |
| (7) | Tax payment rule | PPN(VAT):15th of next month, PPh (Salary WH tax):10th of next month, Angsuran PPh Badan (Corp tax installment):15th of next month | MP/PJT/17 & List of Types of Corporate Tax | Goods/services procurement: Partner/supplier pays VAT to Bank/Post office and handed of tax payment receipt to Budget Section. Salary WH tax calculated by Budget staff and then recapitulation of salary WH tax paid to Bank/post office (10th of next month). Responsibility of Advance Payment: Partner/supplier pay VAT to Bank/Post office and handed of tax payment receipt to Budget Section. Revenue from non-water services: VAT calculated by Budget Section staff and handed to Cashier for payment VAT to Bank/Post office | Same |
| (8) | Cash management | Weekly by Finance Bureau | | Budget Section responsibility, Report to Adm. & Finance Director | Same |
| a) | Petty cash management | Maximization of bank interest income | KP054/KPTS/DA/1999 | Petty cash handled by Cashier and checked as mentioned below | Same |
| b) | Operational cash management | Weekly/monthly cash availability | KP054/KPTS/DA/1999 | Physical check to be done by 1.Cashier 2.Chief of Budget Sec. 3.Chief of Finance Bureau | Physical check to be done by 1.Cashier 2.Chief of Budget Sec. 3.Chief of Finance Bureau |
| (9) | Pension rule | Contribution to retirement pension, Social insurance, Employee about 30% and the Company 70% to be contributed | General Guideline of PJT I Salary System 2004 | Salary expenses include pension contribution: Pension fund=30 % x (basic salary + family allowance), Employee portion 10% & Corporation portion 20% of the contribution | Same |
| (10) | Duty trip allowance rule | Modifications on Stipulations concerning Official Trips | 1.Procedule MP/PJT/20 2.Guideline KP.164/KPTS/DA/2003(9/30) 3.Tariff KP.165/KPTS/DA/2003 | Working area: Approval by Chief of Div. or Bureau, Outside of working area: by Director | Working area: Approval by Head of Section, Outside of working area: by Director |
| (11) | Health, Safety & Insurance | | 1.Procedule QP/PJT/12 2.PT.ASKES Health Insurance 519.1/13-08/0704, KP.009/BA/DA/2004 | Permanent staff: General check-up, laboratory, accident in work, hospitalization at Corporation expense Non permanent: Labor Social Insurance | Same |

## Table J4.1 Guidelines and Manuals (6/7)

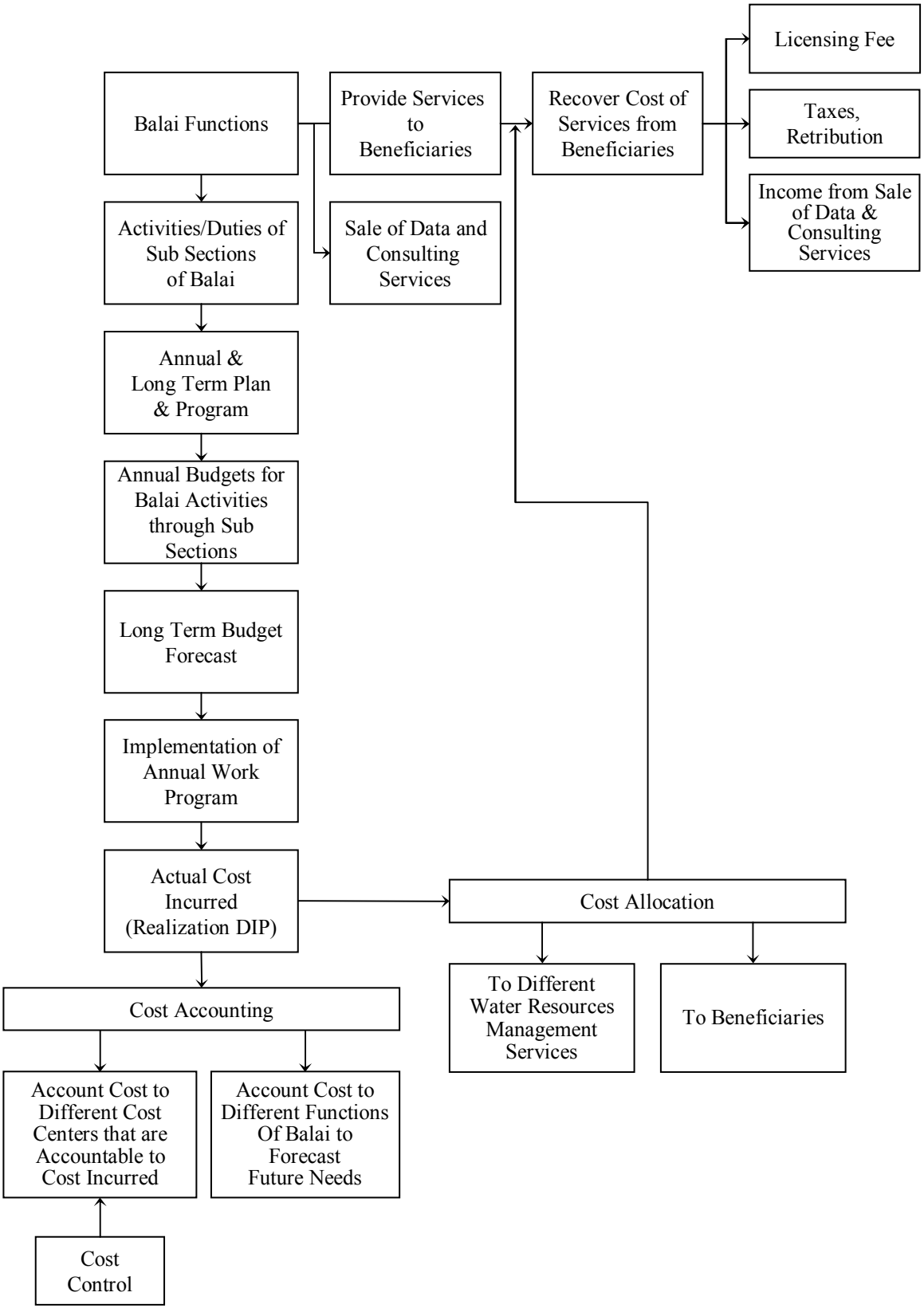
| Name | | Contents | Documentation by PJT I | Operation and Authorization in PJT I | Proposed Operation and Authorization in PJT I Jeneberang |
|---|---|---|---|---|---|
| | | | 3.JAMSOSTEK (labor social insurance) | | |
| (12) | PGPS salary | Salary of PNS is paid by Central government | GR No.26/2001 | Subsidy from Central government | Same |
| **4** | **Corporate Management** | | | | |
| (1) | Corporate plan | | | | |
| a) | 5 year plan | Procedure of long term plan formation | BUMN Master plan, KEP-102/MBU/ 2002 & QP/PJT/16 | 5 year plan 2004-2008(9/30) Budget plan: RJP Approved by MSOE | Same |
| b) | Annual plan | Procedure of company work plan and budget formation | KEP-101/MBU/ 2002 & QP/PJT/22 | Annual plan 2004-Book I & II Budget plan: RKAP approved by MSOE | Same |
| c) | Review of Annual budget plan | Procedure of company work plan and operational formation | QP/PJT/25 | Proposed by Bureau or Div. to Planning & Control Bureau, approved by Board of Directors Decree | Same |
| (2) | Tariff making | Tariff Evaluation Team (TET) formed by MSOE, MOF, MSRI, Local government, PLN, PDAM and Industry and PJT I&II | Tariff making procedure | PJT I propose tariff to MSRI, TET in Jakarta evaluate PJT I's proposal at request of MSRI and determines and makes socialization to users, then, MSRI issues decree | Same |
| (3) | Monthly management report | From each water service division and administrative bureau to each responsible Director | Problems to be solved if any and ratification of agenda of the last meeting | 1. Coordination Unit meeting by Head of Bureau or Viv.<br>2. Management coordination meeting with Directors every Monday morning | 1.Cordination Unit meeting by Head of Sub Sec. and Report to Head of Tech. Adm. & Finance Section.<br>2.Management coordination meeting with Directors at HO if necessary |
| **5** | **Public relations** | | | | |
| (1) | PUKK now changed to PKBL (Program | Procedure of arranging and monitoring of PUKK | MP/PJT/01 | 1. Proposal from applicant<br>2. Observation, investigation, evaluation and selection of applicant<br>3. Recapitulation of evaluation and selection submitted to Director<br>4. Director's determination | Same |

## Table J4.1 Guidelines and Manuals (7/7)

| Name | | Contents | Documentation by PJT I | Operation and Authorization in PJT I | Proposed Operation and Authorization in PJT I Jeneberang |
|---|---|---|---|---|---|
| | Kemitraan & Bina Lingkngan) | | | 5. Monitoring and reporting | |
| (2) | Customer satisfaction | Questionnaire to stakeholders asking water quality, quantity and customers' impression to PJT I regarding reliability, responsibility, assurance, etc. | QI/PJT/22 | Once a year questionnaire will be made by Div. Replies will be evaluated by Quality Management Bureau and reported to President Director and related responsible units | Same |

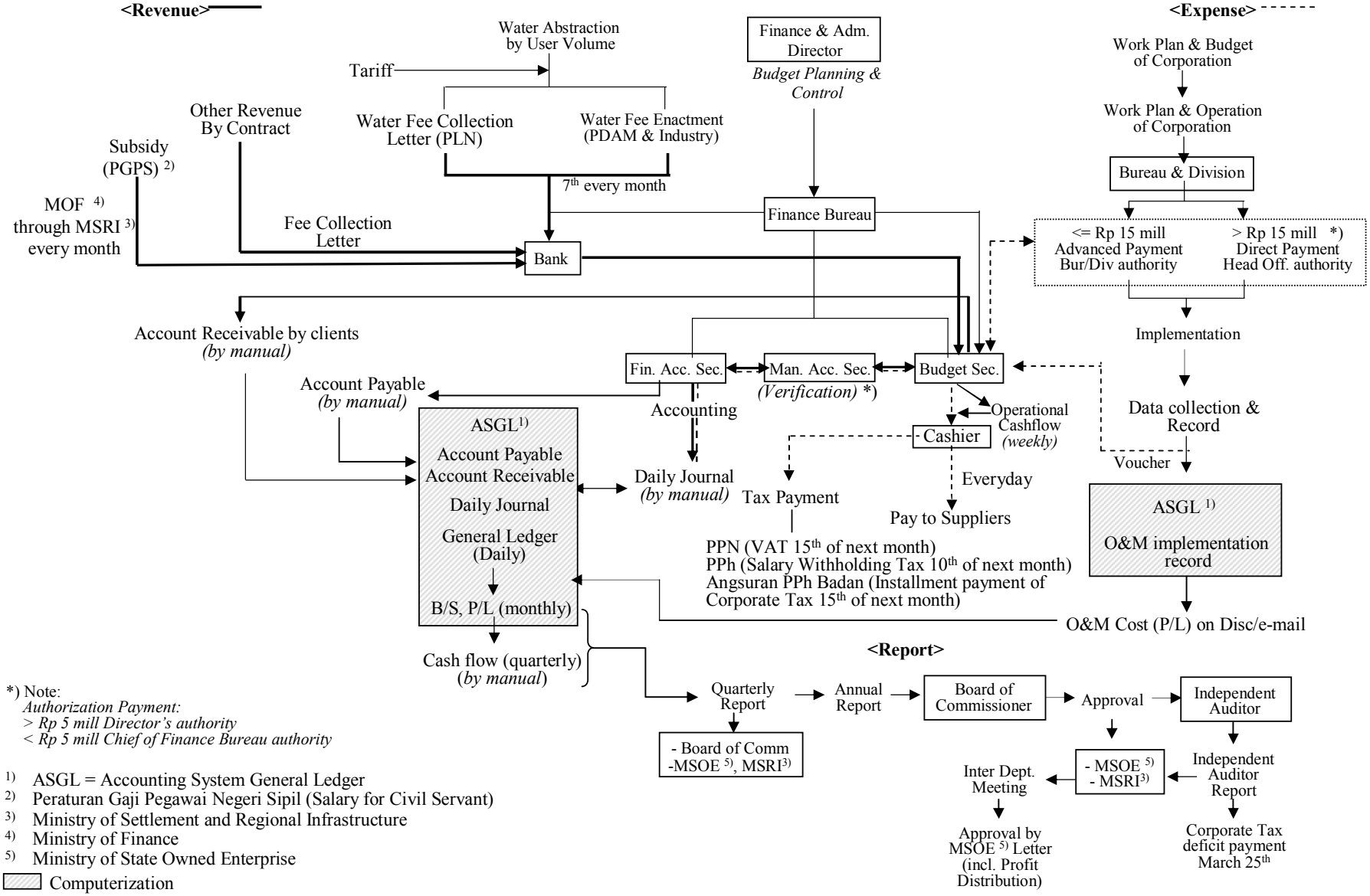
# *Figures*

**Figure J2.1 Balai PSDA Budgeting, Cost Allocations and Cost Accounting**




Source : Final Report Vol. 1 BWRM JIWMP and IWIRIP

**Figure J2.2 Framework of Financial Management System**



# *Appendix*

# Appendix J Outline of Customers

1. PDAM Kota Makassar

PDAM Ujung Pandang was established in 1976 to operate Ratulangi water treatment plant constructed in 1924, which dates back to the Dutch colonial era. The production capacity was 50 l/sec at that time. At present, total production capacity is 2,290 l/sec with 5 water treatment plants.

(1) Tariff calculation based on MOHA Guideline

Ministry of Home Affairs issued the guideline of tariff calculation classifying into three categories: Low rate, Base rate and Full rate. Low rate is the rate covering O&M and administration costs including depreciation, but not financial cost. Base rate covers O&M and administration cost including depreciation and financial cost with loan repayment and interest. Full rate covers, instead of financial cost, O&M and administration cost and capital cost which include depreciation re-evaluated to current price and profit for 10% of Return of Assets.

According to the format mentioned above, tariffs of PDAM Makassar and ratio of additional water cost by the new corporation were calculated as follows:

**Tariff of PDAM Kota Makassar**

(Unit: Rp./$m^3$)

| Year | 2003 | Tariff Rate after Inclusion of Raw Water Fee of Rp.40/$m^3$ | |
|---|---|---|---|
| | Actual | Tariff * | Increase Ratio |
| Low Rate | 2,149 | 2,228 | 1.04 |
| Base Rate | 3,904 | 3,983 | 1.02 |
| Full Rate | 2,915 | 2,994 | 1.03 |
| Average Tariff | 2,268 | | |

Source: Study team based on Corporate Plan PDAM Kota Makassar 2001-2005
Note: * Unaccounted-for-water ratio of 49.27 % was taken into account

Water Sold 64,740,177$m^3$
Revenue Rp.74,495 million
UFW 49.27 %
Expenses of operation, maintenance, and administration including depreciation Rp.70,593 million
Loan Installment (Principal + Interest) Rp.57,624 million
Total Assets Rp.251,528 million

Base rate was larger than full rate due to loan repayment schedule. However, PDAM Makassar carried out loan rescheduling through Financial Recovery Action Plan (FRAP) in February 2003. Loan repayment postponed to 2005.

(2) Financial aspect

Revenue of PDAM Kota Makassar from year 1999 to 2003 shows significant growth. Improvement of revenue in year 2001 was surged by capacity development of production that affecting improvement of selling volume. Meanwhile, improvement of revenue in year 2002 was gained by improvement of tariff, which was made according to full cost recovery principle. The following table shows the improvement of revenue in year 1999-2003.

**Growth of Revenue**

| Year | Revenue (Rp.million) |
|---|---|
| 1999 | 26,315 |
| 2000 | 33,144 |
| 2001 | 41,040 |
| 2002 | 72,210 |
| 2003 | 74,495 |

Source: PDAM Makassar 2003

Tariff was revised in 2001 and 2003. According to the company, the actual average tariff rate was Rp.2,317/$m^3$ in 2003 due to high UFW (unaccounted-for-water). Tariff in Makassar is set at well high rates as compared with those in other cities. The management intends to raise the average tariff to Rp.2,700/$m^3$ in 2004 to cope with expecting loan repayment.

PDAM Makassar has formed a technical team consisting of 20 staff for studying and implementing the measures for reducing unaccounted-for-water (UFW), which is 49% at present. The present service coverage is 55.25%, and wide city area coverage is 65% which is aimed at 75% by 2007.

(3) Issues

Surface water use tax for Rp.10/$m^3$ is levied by the regional government according to the manual issued from Regional Revenue Office in South Sulawesi based on the Provincial Regulation No.3/2002 regarding Underground & Surface Water Use Tax. In addition the new corporation expects water fee from PDAM. If water tariff of the corporation sets for Rp.40/$m^3$, then PDAM tariff cost will be affected about 2 to 4 percent which will be manageable ratio by the company.

2. PDAM Gowa

PDAM Gowa was established in 1991 by taking over BPAM (Regional Water Supply Agency) which started in 1983 to supply drinking water to Kabupaten Gowa. PDAM Gowa has 5 water treatment plants whose production capacities are 290 l/sec.

(1) Tariff calculation based on MOHA Guideline

As aforementioned, tariffs of PDAM Gowa and ratio of additional water cost by the new corporation were calculated as follows:

**Tariff of PDAM Gowa**

(Unit:Rp./$m^3$)

| Year | 2002 | Tariff Rate after Inclusion of Raw Water Fee of Rp.40/$m^3$ | |
|---|---|---|---|
| | Actual | Tariff * | Ratio |
| Low Rate | 1,601 | 1,671 | 1.04 |
| Base Rate | 1,601 | 1,671 | 1.04 |
| Full Rate | 2,463 | 2,534 | 1.03 |
| Average Rate | 2,281 | | |

Source: Study team based on Data of PDAM Gowa General Affairs

Note: * Unaccounted-for-water ratio of 43 % was taken into account

Water sold 1,993,881 $m^3$

Revenue Rp.2,592 million
UFW 43%
Expenses of operation, maintenance and administration including depreciation Rp.1,819 million
Loan Installment (Principal + Interest) 0
Total Assets Rp.9,806 million

(2) Present status

Revenue of PDAM Gowa from year 2000 to 2003 also shows significant growth.

**Growth of Revenue**

| Year | Revenue (Rp.million) |
|---|---|
| 2000 | 1,034 |
| 2001 | 1,726 |
| 2002 | 2,593 |
| 2003 | 3,047 |

Source: PDAM Gowa General Affairs

Service coverage is less than 50% due to wide service area. In 2003 PDAM Gowa bought drinking water of 184,350 $m^3$ from PDAM Makassar because of pipeline break down. In 2002 transmission and distribution pipeline were installed in the amount of Rp.6.4 billion through subsidy for Rp.5.8 billion from the provincial government. There is no borrowing at present.

(3) Issues

Surface water use tax for Rp.10/$m^3$ is levied by the regional government as well as PDAM Kota Makassar. In addition the new corporation expects water fee from PDAM. If water tariff of the corporation sets for Rp.40/$m^3$, then PDAM tariff cost will be affected about 3 to 4 percent which will be manageable ratio by the company.

Computerization is needed for quick and accurate data processing and control UFW.

3. PT PLN (Persero)

Consolidated statement of income is as follows:

**PT. PLN (Persero) Consolidated Profit & Loss Statement**

(Unit:Rp.billion)

| Year | 2001 | 2002 |
|---|---|---|
| Revenue | 35,360 | 44,183 |
| Expense | 31,939 | 52,345 |
| Operating income | 3,421 | -8,162 |
| Other income | -2,854 | 1,584 |
| Tax | -570 | -1,815 |
| Extraordinary income | 183 | 2,333 |
| Net income | 180 | -6,060 |

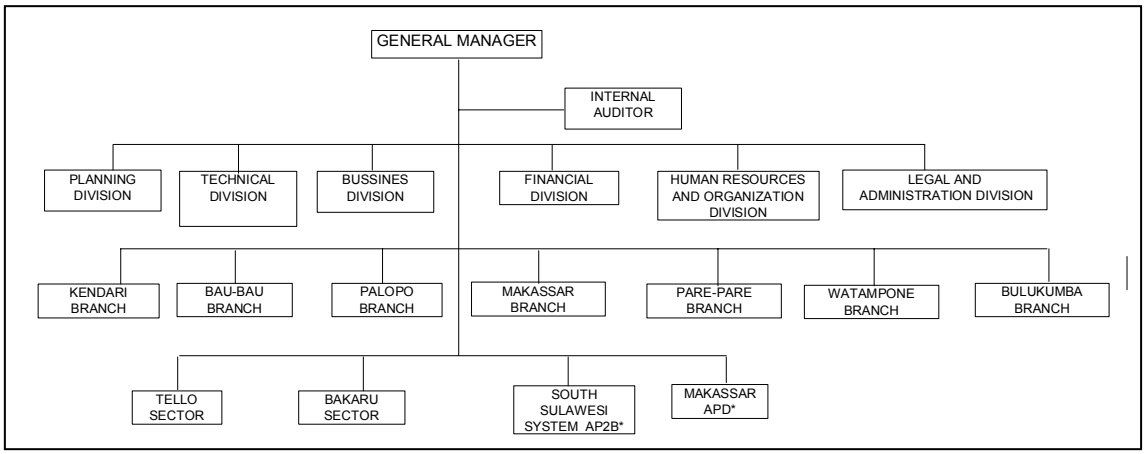
Source: PT PLN (Persero) Annual Report 2002

Major reason of decrease of net income in 2002 compared with 2001 is the increase of depreciation cost by Rp.12 trillion due to asset revaluation made in 2001. The purposes of the revaluation are to reflect the real value of the company's assets and match expenses against revenue in the statement of income according to the notes to the financial statement of the annual report.

In 2002, the company received subsidy from the central government amounting to Rp.4,739 billion, which consists of the subsidy for electricity budget within APBN. Rp.4,519 billion was allocated for electricity subsidy, directed at customers with installed power of less than 450VA, and maximum consumption of 60kWh. Therefore, this group, which makes up 70% of PLN's customers, are subsidized in the form of a lower electricity rate.

(1) PLN Wilayah South & South East Sulawesi

This is one of the units of PT.PLN (Persero), whose organization is shown below:




Source: PLN Wilayah South & South-East Sulawesi

The installed capacity of the plant operated by PLN Wilayah is as follows:

**Installed capacity of PLN Wilayah in 2003**

(Unit: kW)

| Item | Amount |
|---|---|
| Hydro-Power | 129,220 |
| Oil Fuel | 25,000 |
| Gas | 122,716 |
| Diesel | 142,576 |
| Total | 419,512 |

Source: PLN Wilayah South & South East Sulawesi Tenggara

**Production**

(Unit: GWh)

| Year | Own Production | | | | | Purchased | Total |
|---|---|---|---|---|---|---|---|
| | PLTA | Oil | Gas | Diesel | Total | | |
| 1998 | 865 | 14 | 79 | 222 | 1,180 | 378 | 1,558 |
| 1999 | 916 | 46 | 102 | 245 | 1,309 | 459 | 1,768 |
| 2000 | 930 | 0 | 30 | 285 | 1,245 | 732 | 1,977 |
| 2001 | 951 | 36 | 85 | 320 | 1,392 | 840 | 2,232 |
| 2002 | 810 | 35 | 73 | 346 | 1,264 | 1,091 | 2,355 |

Source: PLN Wilayah South & South East Sulawesi Tenggara

Own production decreased in 2002 due to decreased generation of hydro power (PLTA) which must have been covered by purchased electricity. PLTA operation in Bili-Bili dam will contribute to 9.5 % increase in hydro power generation by PLN Wilayah.

**Profit & Loss Statement in 2002**

(Unit: Rp.million)

| Item | Amount |
|---|---|
| Operating Income | 2,025,519 |
| Operating Cost | 2,888,077 |
| Profit/Loss | (613,371) |
| - Fixed Assets Depreciation | 669,835 |
| Cash Flow | 56,464 |

Source: PLN Wilayah South & South East Sulawesi Tenggara

Due to depreciation P/L shows deficit, however cash flow is positive. Operation revenue from PLTA of Bili-Bili dam will further improve cash flow position even after water fee to PJT Jeneberang for Rp.21/kWh in addition to surface water tax for Rp.5/kWh. As for the usage of the collected surface water tax, in case of PLTA Bakaru, 60 % is distributed to catchments area of the dam, 20 % to dam location site and 20 % to downstream area. Such transparent procedure is noteworthy for the case of Bili-Bili hydropower generation too.

(2) PLN Proyek Induk

PLN Proyek Induk belongs to Generation Unit II for South Sulawesi which generates Bakaru hydro plant and Mini-hydro for agriculture. According to information given from PLN Proyek Induk, hydropower station of Bili-Bili dam is scheduled to be completed in November 2005, with 2 units of generators whose installed capacity is 20 MW and annual energy production 77 GWh/year.

4. Industry

Even though manufacturing companies in the study area are limited, Takalar Sugar Factory will be a candidate of customers for PJT J. Takalar Sugar Factory is one of the 7 operational units of PT. Perkebunan (plantation) Nusantara XIV (Persero PTP). Consolidated P/L shows fluctuating conditions of PTP. Realization of the year 2002 made deficit for Rp.13 billion but according to the prognosis of the year 2003 is profit for Rp.6 billion, among that Takalar Sugar Factory made profit for Rp.5 billion, as shown in Table.

The factory has permit from South Sulawesi Governor to use 600 liter/sec. since 1982. After Bissua weir was completed, the factory was allowed to get 1,000 liter/sec. as compensation for land. At present sugarcane cultivated area is limited to 568 ha. but with irrigation, it may be extended to 3,000 ha. if facility becomes available according to the management of the factory. Therefore the Factory has strong water demand to increase company's profit even after payment of raw water fee to PJT Jeneberang.

## Takalar Sugar Factory Profit and Loss Statement

(Unit:Rp.million)

| Year | 2002 realization | | 2003 prognosis | |
|---|---|---|---|---|
| | PTP Consolidated | Sugar Factory | PTP Consolidated | Sugar Factory |
| Sales | 218,082 | n.a. | 253,247 | 43,383 |
| Cost | 203,633 | n.a. | 225,390 | 38,564 |
| Operating Income | 14,449 | n.a. | 27,857 | 4,819 |
| Profit % Sales | 6.63% | n.a. | 11.00 % | 11.11 % |
| General & Adm. cost | 13,371 | n.a. | 11,265 | 0 |
| Profit before interest | 1,078 | n.a. | 16,592 | 4,819 |
| Interest | 13,049 | n.a. | 10,230 | 0 |
| Other Income | -1,282 | n.a. | -484 | -43 |
| Profit before Tax | -13,253 | n.a. | 5,878 | 4,776 |

Source: PTP Prognosa Laba/Rugi Tahun 2003 as of August 31, 2004

# *Supporting Report K*

# *NON-WATER REVENUE PLAN*

**Supporting Report K**

# NON-WATER REVENUE PLAN

## Table of Contents

## List of Tables



## List of Figures

# Supporting Report K

# NON-WATER REVENUE PLAN

## K1 Non-water Revenue in Water Resource Management Organizations

### K1.1 Importance

Non-water service by river basin organization will serve for strengthening the capacity of own revenue generation and achieve efficient utilization of resources that river basin generates and human resources that the organization has. Provided revenue from water provision does not sufficiently cover required O&M expenditure of the proposed corporation, additional revenue generated by non-water service[1] (or business) may help realizing more adequate water resource management in the basin.

Taking an advantage of owning (or managing) non-reproducible assets / properties of value, the existing public water corporations (PJT I and II) undertake a series of non-water services. Leaving a scale issue of basin, the proposed corporation for Jeneberang has also potentials of revenue generation along the basin and Bili-Bili reservoir area in particular. It is imperative therefore that those potentials be properly controlled and tapped to widen revenue sources and make financial contribution. However, non-water service needs set about by consulting to possible resource (fund and human resources) allocation by the corporation.

### K1.2 Legal Clearance

Government regulations, which stipulate activities of PJT I and II also address non-water activity by PJTs. Government Regulation: No. 93/1999 enables PJT I to undertake non-water services to guarantee financial wealthy of the organization (Article 8 on Business Activity and Development). The same regulation also allows PJT I to a) hold joint-corporations with the other partners, b) establish branches and c) buy stocks of other companies (Article 9 on the same) with an approval from the Ministry of Finance.

This article also endorses that PJT I is able to form a joint venture or provide equity participation as an option if necessary, to engage in non-water service. Granting that PJT faces a lack of fund to start non-water service, this article may also help PJTs advance proposed activity while bearing less risk. Planning of non-water service assumes that similar regulations to the existing PJTs be applied to business operation of the proposed corporation.

[1] Service here is also meant to be business activity like tourism / land development business. In this report, non-water service is difined as any kinds of activity to seek for fee or compensation from the consumer and user.

## K2 Experience and Contribution by the Existing PJTs

### K2.1 PJT I

The following non-water services are conducted both in the Brantas and Bengawan Solo River basins by PJT I.

| Activity | Division / unit in charge | No. of staff in charge |
|---|---|---|
| 1) Tourism and recreation | Business Unit for Selorejo Resort | 1 |
| 2) Construction / consulting | Sub-division of Construction / Consulting | 3 |
| 3) Equipment lease | Sub-division of Equipment Services | 24 |
| 4) Land lease | Divisions of ASA Services<br>Planning and Control Bureau | See note below |
| 5) Sand mining | Divisions of ASA Services<br>Quality Management Bureau | See note below |

Note : Land lease is *concurrently* controlled by each ASA (water and water resources) Services Division where necessary. Sand mining is further grouped into mining management and own dredging. PJT's role in mining management is a provision of technical recommendation to the authority (by Quality Management Bureau) and monitoring and fee collection (*concurrently* by ASA Service Divisions).

(1) Tourism and Recreation

1) Scope and facility

Major tourism activities of PJT I take place in and around Selorejo reservoir, although a few minors exist in other reservoirs. Business Unit for Selorejo Resort (Unit Mandiri Wisata Waduk Selorejo)[2] is responsible for tourism business.

Selorejo Resort, located at 48 km far from Malang, utilizes reservoir and surrounding environment, and offers recreation value to visitors. Development of tourism facility was set about in 1991, mostly financed by internally accumulated fund of PJT I. Present status of resort facility was almost shaped in a few years after the start of development. Selorejo Resort now holds accommodation, conference, recreation and sports facilities as follows;

| Item | Type of facility / equipment | Note |
|---|---|---|
| 1) Accommodation | 10 Cottages & 26 Wisma rooms | |
| 2) Convention / multi-event | 3 Convention halls | 200 persons at maximum. |
| 3) Sports / recreation | Rowing / Motor / Excursion boats<br>Play ground, Jogging track, Camp<br>Golf course*, Sport courts,<br>Fishing, Swimming pool, Tour guide (on request)Public park | Golf course is closed, since the area is used for sediment storage.<br>Rowing / motor boats are owned and operated by the local residents who pay for business permit. |
| 4) Food / kiosk | Restaurant, Food stall, Kiosk | Local people opens the food stalls and kiosks, while paying space usage charge to PJT I. |

[2] In January 2004, tourism Bureau in the Sub-division of Construction, Consultancy and Tourism under the Division of Public Services in Brantas Directorate was separated, and re-organized as independent business unit for Selorejo Resort.

2) Business performance

The number of visitor to Selorejo Resort annually amounts to around 166,000 during the last three years on average, but with declining trend. Of the total visitor, about 6.7 % is staying-guest. The number of visitor usually peaks in June to July or December. Marketing efforts by the business unit include networking through travel agents and among tourism industry, sales promotion of packaged-tour for schools and enterprises.

Each visitor spends around Rp. 15,000 (for non-accommodation expense) and Rp. 36,000 (for accomodation) on average, according to site manager. The present occupancy rate of accommodation is more than 20 % on weekdays and 40 % on weekend. Occupancy in weekend, however, often exceeds 70 % particularly in the peak season. Major category of visitor includes family, students and business persons in group. A dominant tour pattern is one-day visit by the said categories.

3) Operational scheme

PJT I established special business unit for tourism in 2004 and now assigns a manager who is responsible for the overall business management in Selorejo Resort and other minor locations. Business unit then appoints one site administrator for routine management and user charge collection on a contract basis, and contracts with other 46 staff to assist resort operation (reservation, cleaning and maintenance, restaurant staff, and cash management).

Needs for facility rehabilitation and extension (i.e. investment) shall be identified by the unit manager, and reported to and approved by the Board of Directors upon technical recommendation from Division of Public Services.

4) Revenue and expenditure

Revenue comes from entrance fee[3] and user charge to accommodation and recreation facility. Total tourism revenue[4] amounts to Rp. 1,559 million in 2003 and Rp. 1,439 million in 2002, and grows at an average annual rate of 27.5 % during the last five years. Revenue accounts for about 3-4 % of total PJT revenue. Of the revenue sources, entrance fee accounts for the largest (56.2% in 2003), followed by accommodation charge and restaurant sales.

Revenue collected by the unit manager is then transferred to the Finance Bureau of PJT I. On the other hand, the manager annually requests necessary expenditure for facility O&M to the Finance Bureau and Division of Public Services. Though unit manager has an authority on how to allocate routine operational expenditure, investment and asset-related decision is subject to approval of the board.

[3] About 30 % of entrance fee is paid as tax to the local governments.
[4] Including some minor revenues from the locations other than Selorejo.

Annual expenditure has stayed at no more than around Rp. 1,000-1,100 million in the recent years and includes depreciation cost against tourism-related assets. The largest segment is O&M of accommodation and salary for contracted employees (about 23 % of the total, respectively). Resultant profit generated from tourism is estimated to account for some 5-6 % of the total profit (on a before-tax basis).

5) Future plan

Division of Public Services has prepared further facility development concepts for Selorejo and other reservoirs, which envisage the development of cottage, water sports, recreation park, sidewalk facilities and landscape beautification.

(2) Construction / Consulting and Equipment Rental

1) Construction and consulting

Division of Public Services established Sub-division of Construction and Consulting as another major source of non-water revenue. This sub-division is organized with three staff that has an experience in construction business. PJT I have an advantage in dredging and steel-sheet piling for earth works. Consulting business covers the study on water resource development, feasibility study, and basic and detail design for river structures. Sub-division holds only three staff, therefore, usually subcontracts jobs.

Revenue from this sub-division hikes to as many as Rp. 9,000 million in 2003 from Rp. 2,835 million of the previous year. Profit (Rp. 2,265 million) generated by the sub-division accounts for almost 43 % of total PJT I's profit in 2003. Construction revenue has rapidly grown during the last five years.

It is however noted that PJT I does not obtain business license for construction or consulting services. Local government refrains from issuing license to public corporation such as PJT, concerning for the effect on markets where a number of existing companies compete. PJT I cannot participate in tender, therefore join construction work as subcontractor or through direct appointment by clients. PJT I now considers an option to separate and corporatize this sub-division.

2) Equipment lease

Division of Public Services also established Sub-division of Equipment Services. This sub-division not only conducts inventory management and maintenance of own equipment and heavy machinery, also provides equipment lease service. Main service item for lease includes steel sheet pile for earth works and heavy machinery (such as bulldozer, excavator).

Revenue generated by this business amounts to Rp. 683 million in 2003 but with declining trend since 2001. However, expenditure of leasing business reaches only to Rp. 290 million

in 2003. Dominant portion of expenditure includes staff salary (24 staff) and depreciation cost of equipment assets appropriated for leasing.

(3) Sand Mining

Revenue from sand mining comes from two activities. Firstly, PJT I conducts sand mining management[5], where PJT I advises the authority on permit issuance (location, methods and volume of mining), and conducts filed monitoring. Source of revenue is service (retribution) fee according to the production volume of sediment materials (sand, gravel and river stone) mined by the permit holders.

Service fee is designed to restrain a concentration of mining activity in the middle to lower reaches. The fee is collected at several checkpoints, together with tax payment to district governments. PJT I currently relies on district government (DINAS Mining and Energy) for monitoring of mining activity and fee collection, since divisions in charge (ASA Services) cannot always allocate enough number of staff for this purpose.

PJT I also conducts dredging to its own accord, and tries to directly sells sediment materials to consumers and traders, but has only achieved a minimum sales performance, due to a remoteness to urban consumption areas.

Revenue from sand mining has only accounted for a small portion of the total non-water revenue during the recent years. PJT I would rather have a tighter control to limit mining activity by local miners in its middle to lower reaches. Sand mining to PJT I is surely essential and urgent in the upper stream, but more or less subject to regulatory control, rather than revenue-seeking activity.

(4) Others

Other revenues of PJT I include laboratory service (water quality testing), land lease as well as sand mining, and annually stay at some Rp. 400 million during the last five years. Of the total non-water revenue, "other" category accounts for 10.4 % during the last five years on average, but only 3.9 % in 2003. Concerning the future plan, Division of Public Services presently discusses a possibility of agro-business, plantation development and commercial utilization of the presently dormant land properties.

## K2.2 PJT II

PJT II conducts the following non-water services in the Citarum river basin;

[5] Provincial government, represented by Provincial DINAS Mining and Energy, holds an authority on permit. Quality Management Bureau of PJT I technically advises provincial government on location, method and volume of mining.

| Activity | Division / unit in charge | No. of staff in charge |
|---|---|---|
| 1) Tourism and recreation | Tourism Development Unit | 27 |
| 2) Land utilization / sand mining | Land Management Unit<br>Each field division (sand mining) | - |
| 3) Heavy equipment service | Heavy Equipment Unit | - |
| 4) Other services | Bureau of O&M and Environment, etc | - |

(1) Tourism and Recreation

1) Scope and facility

Tourism Development Unit[6] of PJT II operates tourism and recreation business, known as Grama Tirta Jatiluhur Hotel and Resorts, making use of Jatiluhur reservoir and its surroundings (8,300 ha). Dam construction office was firstly renovated to accommodation facility by the POJ (former PJT II) in 1970s, and then PJT II built new and renovated such facility up to the present status.

Presently available facility was mostly financed by Department of Public Works and internally accumulated fund. Site preparation, facility design and construction works were undertaken by PJT II itself. Jatiluhur Hotel and Resorts presently holds accommodation, conference, sports and recreation facilities as follows.

| Objective | Type of facility / equipment | Note |
|---|---|---|
| 1) Accommodation | 2 Hotels - 24 rooms<br>Bungalow - 45 rooms | Including bars, restaurants |
| 2) Convention / multi-event | Convention / event halls | 400 persons at maximum. |
| 3) Sports / recreation | Pedal / Motor / Excursion boats, Water sports, Play ground, Jogging track, Camp, Driving range, Tennis court, Fishing, Swimming pool, Tourist information, Water front park | Water slider facility is under construction |
| 4) Food | Bars, Restaurants, Food stalls | Local people opens the food stalls while paying space usage charge to PJT II. |

2) Business performance

The number of visitor amounts to as many as 154,000 in 2003, with annual growing rate of 11.4 % during the last five years. Of the total visitor, about 6-7 % is staying-guest, and about 5 % is foreign guest. Recent marketing effort, including brochure making, networking through agents and tourism business association, establishment of liaison office, accounts for such a high growth of visitor number.

Each visitor spends about Rp. 9,800 (for non-accommodation expense) and Rp. 100,000 (for accommodation) on average in 2003, according to an estimation of the Study team. Present occupancy rate of major facilities is 30-40 % for accommodation and 40 % for convention hall in average. On weekend, these ratios often exceed 70-80 %.

[6] Used to be Division of Tourism, but re-organized as an independent business unit.

Visitor is categorized into three major groups (family, government officers and business persons in group). Dominant tour pattern is to hold a convention and stay one night, with enjoying a few recreation activities. Business unit now promotes Technological Tourism Program since 2001 in collaboration with a tourism agent (PT. Bally Jaya Perdana), and targets educational needs of students on water-ecology issues (around 20,000 visitors in 2003).

3) Operational scheme

Facility O&M (for accommodation, convention, recreation, and related infrastructure) is out-sourced to private operator. Required activities for facility operation are itemized in management contract, and both parties (PJT II / Tourism Development Unit and private operator) agree on required number of operational staff, operational cost and management fee. Appointed operator needs to manage all the operational matters within the agreed condition and price.

On the other hand, tourism unit is responsible for the overall management, overhauled maintenance, and investment matters on facility extension and rehabilitation if required (but subject to approval of the board for finance).

4) Revenue and expenditure

Revenue comes from entrance fee and user charge to accommodation and recreation facilities. Collected revenue shall be transferred to Administration and Finance Director, who is responsible for revenue and budget management of the entire corporation. Tourism Unit on the other hand reports necessary expenditure for the entire business management in every two months to the Bureau of Finance.

Revenue generated by tourism business amounts to Rp. 2,752 million in 2003, and increases from Rp. 1,028 million in 1999 at an annual growth rate of 31 %. Present revenue of tourism accounts for only 2.6 %[7] of total revenue of PJT II. PJT II does not officially report its segment information on financial soundness of each business unit. Head of Tourism Unit explains that expenditures are tightly controlled, and that profit is also realized by tourism business independently in the recent years.

5) Future plan

PJT II has prepared the Master Plan for Jatiluhur Tourism Zone in April 2003. The Master Plan proposes a few more large-scale accommodation (hotel, cottage, villa), golf course, agro-tourism site. To realize such proposals, Tourism Unit calls for private participation through public-private partnership, and is keen to hold dissemination seminars. Besides the facility plan, PJT II suggests more autonomous operation (subsidiary corporatization) of the

[7] This ratio is lower than PJT I, but total tourism revenue is far larger than PJT I. It is because the entire revenue of corporation is much larger in PJT II compared to PJT I.

Tourism Unit after 2004 in order to assure timely decision making and effective resource allocation for further business growth.

(2) Land Utilization and Sand mining

Land Management Unit provides services in the form of land leasing and development to optimize utilization of state-owned (and managed) area. In 2003, revenue of some Rp. 4,600 million is realized, with a steady increase in the last five years, and 17 % of the total land area is presently utilized in lease to farmers and industries. Revenue from land lease now accounts for the largest portion among the non-water services. PJT II also increases land area available for business use through transfer of the state-owned lands.

Concerning sand mining, PJT II sells dredged materials directly to the market, and partly conducts mining management through monitoring and charging fees according to the production by miners. Own production of dredged materials steadily increases to the level of 377,553 $m^3$ in 2003 from 140,000 $m^3$ in 2000. Mining related revenue amounts to Rp. 592 million in 2003, but showing only an ignorable portion among the total revenue.

(3) Heavy Equipment Service

Heavy Equipment Unit is assigned to manage 15 kinds of heavy equipment (33 units in total) for O&M of water resource and irrigation structures that can also be leased to other parties. Major equipment that generates a high demand for lease includes heavy mobile, water pump, and excavator. However, more than half of equipment is out of order, due to an inappropriate maintenance. Equipment can only be leased when not occupied by internal requirement. Annual revenue from equipment lease amounts to Rp. 540 million in 2003, and steadily increases.

(4) Other Services

Although a scale of activity is small, PJT II also provides engineering service to optimize potency of corporation staff, which covers land investigation, and structure planning, and provides laboratory service on water quality. Reservoir fishery is also managed, where PJT II makes an agreement of water ground use (usually 7x7 $m^2$ per one lot) with local fishermen, conduct environmental management of reservoir, and charge ground user fee (Rp. 1,000-2,000/$m^2$/year).

## K3 Potentials of Non-water Revenue in the Jeneberang River Basin

Kinds of non-water service undertaken by PJTs do not differ, though scales of activity do. Learning from such experiences and field visits in the Jeneberang River basin, likely scopes of the proposed corporation can be listed from tourism, sand mining, reservoir fishery and a few others.

### K3.1 Tourism and Recreation

(1) Potentials

It is apparent that reservoir and riverside environment, if properly utilized, can generate opportunity of revenue generation through tourism and recreational development. The state properties currently managed by JRBDP include Bili-Bili reservoir, green-belt zone, dam body area, and the Jeneberang riverside. A few tourism and recreational plans that utilizes reservoir and its surrounding area have been already proposed as below. Such business interests held by other parties may prove certain potential values that the reservoir and river area can generate.

| | |
|---|---|
| Regional Tourism Development Center Plan 2003<br>by Kabupaten Gowa | This plan recognizes Bili-Bili reservoir as one of the panoramic tourism objects, and plans the utilization of surrounding area for the outbound, field excursion area with recreational facility and preparation of tourism product.<br>The local government proposes APBD during 2004-08 as funding source for the above plan, but has not detailed nor realized yet. |
| Preliminary Concept for Tourism Area Development Plan in Kabupaten Gowa<br>by PT. Gowa Makassar Tourism Development (GMTDC) in 2003 (internal plan) | This conceptual plan addresses Bili-Bili reservoir as potential tourism object, recognizes a merit of access road to Marino (the most prominent tourist destination in Gowa) from Makassar.<br>The concept envisages a nature / water tourism center (in the south part of reservoir), including water sport / recreation facility, golf course, landscaping, house-garden, accommodation, access road. |
| Tourism Development Plan<br>by Ministry of Public Works<br>in 1994 | As a part of Design Study for Environmental Improvement Works, the recreational park plan was prepared before the dam completion.<br>The proposed park was to be located in “two-sister island”, and includes pedestrian road / bridge, shelter, overlook spot, water-approach / beach zone, parking lot, management office. |

The first plan (Gowa District) does not clearly mention the location of facility around reservoir, but can coincide with green-belt area acquired by JRBDP. The second (GMTDC) is only concept which looks at the southern part of reservoir, that is however not acquired by JRBDP. Land title of this area is not clear. The third is not new, but seems to be most realistic except issue of financing source. Proposed facility is already detailed, but business scheme are not elaborated yet.

Tourism and recreational potentials can be also measured quantitatively, but partly. According to DINAS Tourism of Gowa, a certain number of visitors make a trip to a rest space of Bili-Bili reservoir (further stated below) mainly from Makassar and its outskirts. Annual number of visitor to reservoir may reach to more than 13,500 (only those who pay for entrance of the rest

space, located at the north west of reservoir), estimated from the average daily visiting number. If including non-fee-paying visitor to the dam body area, the visiting number to reservoir can be more.

Beside the above, a number of people residing in Makassar and surroundings go to Marino Highland (forest park) for the outbound and educational trips, particularly on weekend. Visitors are largely student and family. Though the number of visitor to Marino can be hardly estimated[8], many are expected to stop at reservoir with the presence of sophisticated recreational facility.

In addition, more than 20,000 tourists annually visit to Gowa region (mostly destinated to historical buildings in Somba Opu) as far as recorded by DINAS Tourism, although a ratio of domestic tourists who heads to Gowa region (after entering South Sulawesi) is rather limited (about 4 %).

| Year | Foreign tourist | | Domestic tourist | |
|---|---|---|---|---|
| | Entering South Sulawesi | Destinated to Gowa region | Entering South Sulawesi | Destinated to Gowa region |
| 2000 | 10,008 | 123 (1.2 %) | 387,356 | 25,616 (6.6 %) |
| 2001 | 12,094 | 190 (1.6 %) | 489,765 | 16,310 (3.3 %) |
| 2002 | 9,563 | 603 (6.3 %) | 571,625 | 22,112 (3.9 %) |

Source : Regional Tourism Development Center Plan 2003, Kabupaten Gowa
Note : Figures in parenthesis indicate the ratio of visitor who heads to Gowa region.

Tourism and recreation facility at reservoir may also attract some of such tourists. It is likely that potential visitor to the proposed tourism facility mainly come from Makassar and its outskirts (*Mamminasata* region), and partly from domestic tourists who will be bound for Gowa region.

(2) Present Condition of Asset Utilization

Around reservoir and riverside area, despite the above concepts, a large-scale land utilization for tourism has not taken place yet, except a few cases of small activities. The first case is operation of small recreation space, located in the north of reservoir within green-belt. This space is operated by the local community and managed by the local government (DINAS Tourism of Gowa) as below.

| | |
|---|---|
| Authority / Management | DINAS Tourism, Arts and Culture of Gowa<br>Kecamatan office concerned |
| Operation | Local Community |
| Facilities in the space | Small restaurants (around 20)<br>Rental boats (rowing, motor)<br>Fishing equipment rental<br>Entrance gate / community center |
| Entrance fee (Retribution) | Rp. 2,000 per adult / Rp. 1,000 per child |
| Annual fee | Rp. 16,500,000 in 2004 (estimated) |
| Other fee or charge | Space usage charge for restaurant operator (but presently exempted) |
| No. of visitors | |

[8] According to DINAS Tourism of Gowa, around 8,000 to 9,000 people annualy visits a forest park in Marino, however, visitors are not always destinated to the park when they visit Marino Highland.

| | |
|---|---|
| (average daily) | 60 persons on Sat. / 100 persons on Sun. / less than 20 on weekday |
| (annually) | 13,500 (estimated) |
| Controlling Staff | A few local inhabitants assigned by Kecamatan office |

Facility and landscape are not sophisticated nor professionally managed, however, present activity still indicates a potential value for revenue generation (felt by local communities at least), that can be similarly realized by the proposed corporation. DINAS Tourism of Gowa is estimated to receive annual entrance fee (in the form of entrance fee) of Rp. 16.5 million in 2004 from visitors to this space.

Another case is an operation of restaurant by the local inhabitant, located in the northern-west of reservoir within green-belt that is acquired by JRBDP. However, land use permit was issued by the local government of Gowa. Besides the restaurant, the owner holds land use permit of more than 2 ha within green-belt zone, speculating future increase of visitor.

One more case is an excursion boat rental to be operated in the Long Storage under the joint-agreement of JRBDP employee co-operative and a private operator. The profit generated by the boat rental will be shared between the said two parties, but not yet detailed. It should be reminded that what is revealed from these cases is an existence of potentials for revenue generation through tourism development, although scale of activities is still small.

(3) Issues and Constraints

The following issues need taken into account, when the business plan related to tourism and recreation are prepared.

- Increasing turbidity of the reservoir water may lessen an appeal for the potential visitor until the water environment is restored.
- Given the financial constraint, how the minimum facility to attract visitor as many as possible is determined and financed?
- How the interests held by the stakeholders (such as DINAS Tourism of Gowa, local community) are coordinated and reflected?

One of the differences in tourism condition between existing PJTs and proposed corporation is a size of owned (or managed) area surrounding reservoir. Proposed corporation has much smaller size of land (including green-belt zone). Another is related to the condition when the tourism operation was started. PJTs have not invested for all the tourism and recreational facility by their own accounts from the scratch. They inherited some accommodation facility and landscape infrastructure from the Department of Public Works. This has helped PJTs to accumulate the fund at the early stage.

Those differences imply that the proposed corporation at the beginning needs to restrict the size of facility to smaller one, that well fit into the available area of land, and focus on the park facility where the minimum recreational functions are available. Such options as development of accommodation and large-scale recreational facility should be subject in the long-term.

## K3.2 Sand Mining

(1) Potentials

Sediment materials in the Jeneberang River have been largely accumulated at the upper stream to reservoir since commencement of Bili-Bili reservoir operation. However, sand mining is mostly undertaken in the middle to lower reaches. Although the mining volume of river products in the lower reach has decreased as a result of the recent tighter control (non-renewal of the existing permits), excessive mining has already caused adverse impacts on river functions and structures.

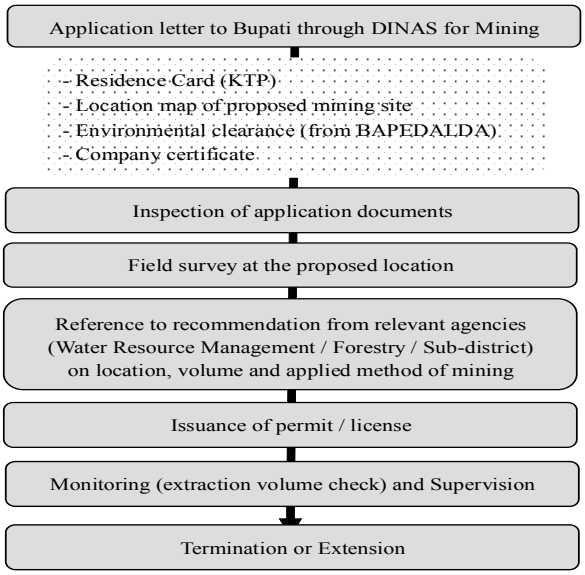
While, accumulation of sediment materials from the upper stream (and large scale sediment runoff from the collapse at Mt. Bawakaraeng) may also affect functions of sabo facility and shorten economic lifetime of reservoir (see the details in Supporting Report E on river infrastructure). In view of sound river management, regular sand (C-class) mining is essential, but should be shifted to the upper stream of reservoir. Sand mining will also bring about continuous potential for revenue generation to the proposed corporation.

It is however expected that consumption of sand or other sediment materials be stably increased, supposing that Makassar and its surrounding area continue the recent remarkable economic growth (6.9%, real annual growth of GRDP). Growth of housing and infrastructure construction, triggered by the *Mamminasata* Metropolitan Spatial Plan (urban infrastructure plan, already approved by the provincial government) and on-going real estate development projects, also supports an increasing demand of river products.

(2) Present Condition of Management and Production

Makassar City (located in the lower reach) does not legally allow mining in its administrative boundary[9], while Gowa District allows in the Jeneberang River course. DINAS Mining and Energy of Gowa and provincial government both explain that district government is presently authorized to issue C-class mining permit, and charge tax for mining product. Typical process of application of mining activity up to termination in Gowa District is as follows;

[9] Non-permitted mining still exists on an individual basis at four or five locations. However, Regional Revenue Office of Makassar still collects tax imposed on mining production (20 % of the pre-ditermined price per $m^3$, calculated as Rp. 1,500 to 2,500 per $m^3$). Revenue Office also charges traders who deal with sediment materials.




Among the processes, field survey at the location, reference to recommendation by the relevant agencies, monitoring and supervision are administrative tasks of most importance. However, performance of local mining agency is not satisfactory. DINAS Mining of Gowa lacks a required capacity of site specification, technical investigation against applications, field inspection, and conduct rather sporadic monitoring activity. Such management performance results in a continuation and concentration of non-permitted activities in the middle to lower reaches, inaccurate production volume, and insufficient reclamation.

Production volume of C-class mining product in Gowa District is shown below, but not including volume in the lowest reach (Makassar City)[10]. Mining volume sharply declined from year 1998 (2,491 thousand $m^3$ in total), and has stayed at the level of 1,150-1,300 thousand $m^3$ in the recent year. Decline of mining volume was primarily due to the recent tighter control on issuance of mining permit (only 8 units having mining permission as of present are identified, some others are operating without permission).

| Unit ($m^3$) | Sand (Pasir) | Gravel (B. pecah) | River stone (B. kali) | Silt (Sirtu) | Ground soil (Ta. urug) | Rock (B. gunung) | Total |
|---|---|---|---|---|---|---|---|
| 2000 | 414,130 | 134,196 | 16,710 | 122,922 | 344,946 | 13,440 | 1,046,344 |
| 2001 | 133,376 | 220,200 | 212 | 174,740 | 776,325 | - | 1,304,853 |
| 2002 | 195,299 | 115,975 | 254,568 | 36,867 | 117,630 | 105,556 | 1,154,915 |
| 2003 | 321,780 | 102,257 | 75,605 | 217,099 | 463,904 | 24,983 | 1,205,628 |

Source : DINAS Mining and Energy of Gowa

Market survey by the study team reveals that average market price (wholesale price at Makassar) ranges between Rp. 25-41,000 / $m^3$ for sand, Rp. 50-92,000 / $m^3$ for gravel, Rp. 25-37,000 / $m^3$ for river stone, and Rp. 20,000/$m^3$ for top-soil (soil for grounding work), depending on the quality and negotiation with buyer. While, tax revenue attributable to DINAS Mining of Gowa slightly increased from Rp. 1,307 million in 2000 to Rp. 1,488 million in 2003,

[10] Regional Revenue Office of Makassar estimats that volume ranging from 1,200 to 3,000 $m^3$ of sand has been annually mined during the last three years.

due to an increase of tax rate. Present tax rate is stipulated as follows by Regional Regulation of Gowa.

| | Sand (Pasir) | Gravel (B. pecah) | River stone (B. kali) | Silt (Sirtu) |
|---|---|---|---|---|
| Tax on Production | Rp. 1,250 / $m^3$ | Rp. 2,500 / $m^3$ | Rp. 1,850 / $m^3$ | Rp. 1,250 / $m^3$ |

Source : DINAS Mining and Energy of Gowa

DINAS Mining officers collect the above tax at checkpoints (pay post) set along the major roads. DINAS Mining is also able to charge service fees for permit issuance, comprising of several tariffs set for each examination process. On average, miners pay Rp. 3,500,000 per ha/year for permission (a third in case of renewal). According to DINAS official, however, only the service fee for the portion of pre-field inspection is currently charged.

Under the Provincial Regulation No.7, 1993 on C-class mining, miners also have to provide the fund for reclamation assurance of mining sites upon the permit acquisition. DINAS Mining of Gowa, however, is not able to collect the fund from miners, since miners and DINAS have not reached a consensus.

(3) Issues and Constraints

Rather than focusing on the commercial aspect of sand mining, the corporation needs to consider how (dis)incentive is introduced to attract traditional miners in the lower reach to activity in the upper stream, and how the sufficient volume of sediment extraction from the upper stream is constantly ensured. This will be concerned with the present C-class mining tax and fee regime of Gowa and collaboration with the relevant authorities.

### K3.3 Reservoir Fishery Management

(1) Potentials

Bili-Bili reservoir has a potential also for fishery, which can be tapped for the benefit of the local community. The study of Hasanuddin University (2001) estimated that potential weight of fish that can be able to produced in the reservoir from floating net-cage breeding is around 4,200 ton per year, and proposed some 5.6 ha or 0.5% of the effective reservoir area for the floating net-cage operation (see the details in Supporting Report G on watershed management).

PJT II opens its reservoir for the local fishermen (mainly floating net-cage operators) through contract agreement of fishery ground use and charging ground user fee, while controlling the allowable area for fish breeding not to affect the reservoir function and capacity. Proposed corporation may introduce the similar practice and fee in compensation for harmonious reservoir management (allowing fishery to operate in certain conditions, while ensuring proper reservoir function).

(2) Present Condition of Management and Production

DINAS Fishery and Maritime of Gowa reports that 142 fishery households were active in reservoir, and that they made around 33,000 fishing trips as of 2002. Most popular equipment used in the reservoir has been gill-net static, followed by fishing rod. Fish production from reservoir amounts to 129.8 tons (84.1 ton by gill-net static) and Rp. 526,910 million of value in 2002. However, fishes caught in reservoir currently become smaller and fewer than before, due to degradation of water quality caused by the landslide. Fishery households active in reservoir and river also decrease.

Depending on type of fishing equipment and breeding place, Gowa District stipulates the regulation on fishing permission fee (effective for one year) as below. District government also stipulates fee for fish catch (Rp. 500/kg for gold fish, and Rp. 300/kg for blue/nila and other fishes) and collects at auction presented by DINAS Fishery. The permission fee have not however been imposed to fishermen working in the reservoir yet, since DINAS Fishery considered that it was still the time to attract more communities to reservoir fishery.

| | | | | | |
|---|---|---|---|---|---|
| For breeding (hatchery) permit | Rapid water | Rp. 5,000 / $m^2$ | For equipment use permit | Single rod | Rp. 5,000 / year |
| | Floating net | Rp. 10,000 / $m^2$ | | Multiple rod | Rp. 10,000 / year |
| | Cage | Rp. 3,000 / $m^2$ | | Net | Rp. 8,000 / year |
| | Still water | Rp. 50,000 / ha | | Rattan trap | Rp. 5,000 / year |
| | Others | Rp. 3,000 / $m^2$ | | Gill net | Rp. 25,000 / year |

Source : DINAS Fishery and Marine of Gowa

Management activity of DINAS for reservoir fishery includes a support for fry release, but takes no measures to control over-catching / breeding and reservoir environment (eutrofication). Before the landslide, it was argued that reservoir fishery dimension (area) should be properly controlled to prevent over-fishing particularly for gill-net, since the use of such equipment was increasing.

### K.3.4 Other Non-water Potentials

(1) Construction

Construction business makes an important contribution to the revenue generation of PJT I. They mostly subcontract jobs and undertake contract management, since PJT I cannot mobilize enough volume of human resource for these purposes. A key factor of construction business is related to availability of heavy equipment and management know-how. PJT I can take an advantage of owning heavy equipment such as steel sheet pile, excavator and dredger to attract subcontractors who own less.

In case of the proposed corporation, however, it is not likely to realize revenue through construction business, since the list of transferable equipment (from JRBDP) for O&M works is limited to one set per each at the beginning. It is also reminded that heavy equipment such as dump truck, excavator will be occasionally mobilized for sediment dredging during the initial

phase. The corporation may have a low possibility to acquire the corresponding business (construction) license.

(2) Heavy Equipment and Property Rental

As in the case of construction, the proposed corporation for the Jeneberang may have the least opportunity in this field in the short to mid term. In the longer term, however, the corporation can utilize the equipment for lease, as extra units become available.

(3) Proposals during the Workshop

In addition to the above, the workshop participants raised the following ideas as scopes of non-water service during the course of this study;

- Land lease for farming and other activities
- Water transportation
- Fruit plantation
- Bottling water production

Of the above ideas, bottling water production that uses cleaner water in the upper stream of the Jeneberang seems not realistic since some competitors already exist in drinking-water market of the region. Local water-bottler usually uses water taken from the upper stream of the Maros River.

Fruit plantation can be treated as one of the integral components in the tourism business, in which a truck farm garden will be opened around the reservoir green belt.

Concerning water transportation, the local community currently operates ferryboat services that cross some Bureaus (7 to 8 Bureaus) at the lower reach (from Tete Batu Bridge) of the Jeneberang and long storage. Average daily number of passenger amounts to some 20,000 to 30,000 per location during dry season. Operators usually charge a passenger Rp. 1,000 - Rp. 500 per one way.

Although, transport operation itself is not directly controlled by the proposed corporation, it will have a management responsibility over the use of river administration area (for the landing step and waiting spot) by the operators.

Concerning land use within river administration area, many local residents occupy the area at both banks of the Jeneberang especially for farming and settlement. Though this is a regulator-oriented activity, the corporation is recommended to introduce land lease fee to sustain proper control over the land use in the said area.

## K4 Non-water Revenue Plan

The above discussion reveals that certain potentials and opportunities for the proposed corporation to generate non-water revenue exist in the field of tourism / recreation, sand mining, reservoir fishery, land lease (and utilization), and so on. This is partly demonstrated by the fact that other stakeholders such as district government have already realized the revenue in the form of tax or fee through the administrative management over the utilization of various river resources (that are to be managed by the corporation).

In order for the proposed corporation to realize such non-water revenues, the business or activity plan needs to be prepared. In addition, some regulatory and conflicting matters to be socialized and cleared among the stakeholders should be identified.

### K4.1 Tourism and Recreation

Realistic option for the proposed corporation is to start small recreation park (taman tirta) in "two-sister island" (land managed by the proposed corporation along the reservoir). The recreation park in two-sister island was originally designed by Minister of Public Works in 1994, and is most detailed. Other tourism development plans related to Bili-Bili reservoir such as GMTDC are still conceptual stage, needs much vaster land, investment, business alliance, preparation time, and most importantly land title clarification.

For the corporation to recognize the recreation park as more viable capital investment items in the mid-term, however, the original scope and cost of the plan needs downsized to realistic one. In the immediate term, excursion boat operation in the Long Storage will bring tourism revenue in the form of profit sharing.

Concerning the existing recreation spot managed by DINAS Tourism of Gowa, it will be one of the options for the corporation to share the revenue of entrance fee, since the space stands in the green-belt area. This will help the corporation to realize earlier revenue generation. However, sharing arrangement requires coordination with and understanding by Gowa District, and seems less likely.

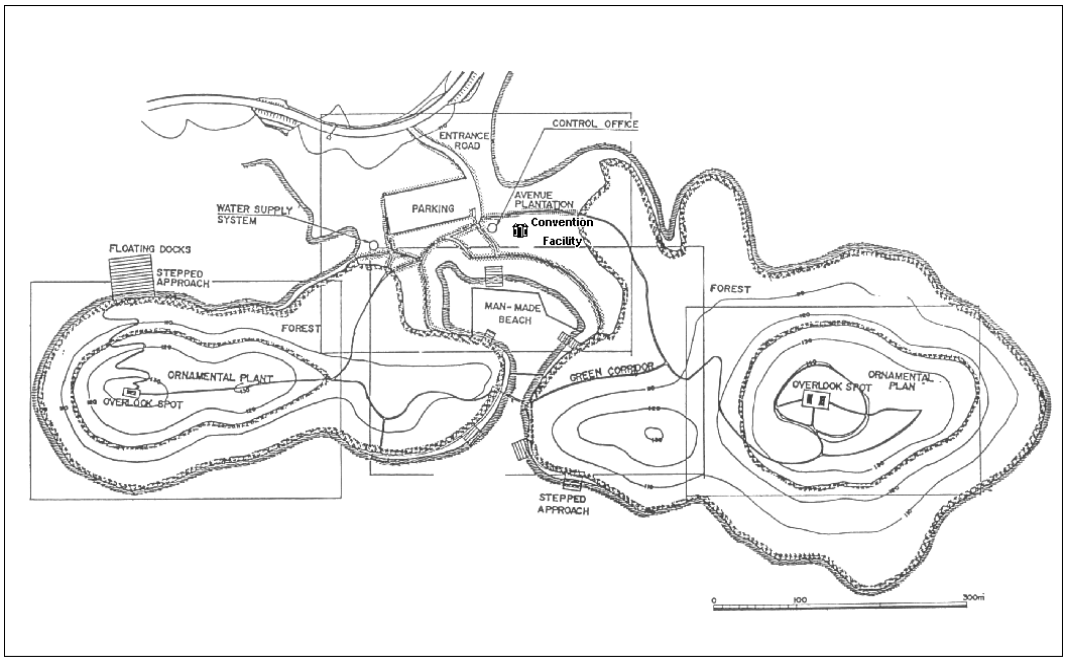
(1) Business Plan

<u>Recreation park in two-sister island (taman tirta)</u>

The recreation park plan will comprise of the following components and facilities and its basic layout is depicted in Figure K4.1.

- Entrance road, parking, sanitary / water supply facility, management office
- Forest walk facility (along the green-belt)
- Lookout platforms and shelters
- Beach and shoreline facility (step-approach to reservoir and sidewalk)
- Water sports facility (pedal / rowing boat, canoe, excursion boat)

- Grass open-space and market space (food stall and kiosk)
- Convention facility




Concept of the recreation park is to open to any visitor (individual, family and group), but largely target local population. Organized excursion tour which targets groups of school student also comes into the target. One-day excursion trip offers students an opportunity to learn about watershed management, dam function and operation. The number of visitor at the operational start is targeted as below, referring to the current visiting number to the similar places (the place managed by Gowa District).

| Number of visitor | Initial operation phase | Afterwards |
|---|---|---|
| Weekday visitor | 30 persons / day | Annually growing 3.0 % |
| Weekend visitor | 350 persons / day | Ditto |
| Organized excursion visitor | 200 persons / week | Ditto |
| Annual visitor | 40,000 persons / year | - |
| Convention facility user | 150 groups / year | Annually growing 3.0 % |

Note : It is assumed that the number of visitor becomes half during rainy season.

This recreation park will charge entrance fee, parking fee and facility user charge (for the water sports, space usage fee to food stall and kiosk owner, convention facility). The corporation may also prepare tour-guidance and packet food services for the group excursion visitor (students). Each fee and charge can be set as follows;

| Items | Tariff | Notes |
|---|---|---|
| Entrance fee | Rp. 4,000 per adult<br>Rp. 2,000 per child | 10 % increase in every 3 years |
| Car parking fee | Rp. 2,000 per car | Ditto |
| Space use charge | Rp. 150,000 per month | Ditto |
| Water sport facility use charge | Rp. 10,000 per time | Ditto |
| Convention packet charge | Rp. 400,000 per set | Ditto |

Note : The above price level is as of 2004

This proposal assumes that the corporation seeks for private-public partnership to expedite financing and implementation of the plan and its operation. Technical Bureau in the proposed corporation shall be responsible for preparatory works (design, private partner sourcing, operational planning and marketing) of the park during the development phase (2009-2011). Depending on the maturity of private partnership, the corporation will then establish the Unit of Non-water Business, and assign a unit manager who is responsible for the overall tourism management from the expansion phase (after 2012).

After the park facility is prepared, the Unit of Non-water Business will make an operational contract with the joint-operator that is then responsible for the park operation (cleaning and maintenance, tour guide, sport facility operation, and charge collection) and marketing. The Unit on the other hand will be responsible for the overall management, marketing, planning (rehabilitation and expansion) and reporting to Operations Director of the corporation.

In the long term, potentials of further revenue generation through accommodation (water cottage, villa) and leisure facility (water slider pool, jet ski, parasailing, etc.) and truck farm garden at the adjacent flat area to the two-sister island can be developed (see also Figure K4.1), as far as a sound operation of the initial facility is achieved. Depending on the interests held by the private partner, the corporation may start such an expansionary plan at the earlier stage.

Through the development of truck farm garden, the corporation can enhance local agro-tourism that offers farming lots for local population. Interested people are able to rent the allotted garden from the corporation. Furthermore, fruit plantation can be prepared for the needs of the park visitors, and its product may be sold to the market. Operation of the plantation will be handled by the local community.

Boat rental business at Long Storage

Excursion boat rental at Long Storage is being prepared between the employee co-operative of JRBDP and a private company in the form of joint-business. Permit application, preparation of boat moorage and landing step, operation, and charge collection will be handled by the private partner. Although the scale is small, the profit from this service will be shared with the employee co-operative[11], according to each contribution to start-up fund. After the establishment of the corporation, it is assumed that the profit sharing right be transferred to the corporation.

The number of excursion boat user along the Long Storage is targeted as below, referring to the actual record at the similar place (at Losari Beach). The corporation is able to realize this revenue from the start-up phase in 2007. Water Services Division shall be responsible until the Unit of Non-water Business is established.

[11] After the corporation is establised, it is expected that the joint-agreement (the shared profit, as a result) be handed over from the co-operative to the corporation, since long storage becomes a subject of the corporation's management.

| Number of use | Initial operation phase (Weekend) | Initial operation phase (Weekday) | Afterwards |
|---|---|---|---|
| Pedal boat | 60 times / day | 5 times / day | Annually growing 1.5% |
| Motor excursion boat | Adult: 50 persons / day<br>Child: 100 persons / day | Adult: 5 persons / day<br>Child: 5 persons / day | Annually growing 1.5% |
| Applicable charge (in 2007) | Rp. 14,000 / hour for pedal boat<br>Rp. 4,000 / time for excursion boat for adult<br>Rp. 3,000 / time for excursion boat for child | | 20 % increase in every 3 years |

Note : It is assumed that the number of use in rainy season becomes 20% of dry season. The above number and tariff level is as of 2005, when the operation begins.

Long-term plan

In addition, the eastern parts to reservoir, river mouth area, and Long Storage sides are highlighted as potential area (all acquired area of the corporation), and partly conceptualized by GMTDC. The corporation can tap the tourism potentials of these areas through joint-investment with private sector. Although financial involvement is a long-term action, clarification of land use status will be an immediate action. The location of area is shown in Figure K4.2.

(2) Financial Projection

Recreation park in two-sister island (taman tirta)

Recreation park plan is assumed to be implemented during the expansion phase of the corporation (after 2012), following a preparatory step during the development phase (2009-2011), and to adopt public-private partnership, considering weak fund raising capacity of the corporation. Through the profit-sharing scheme, the corporation will be entitled to receive 20% of the profit of the park operation as the corporation revenue. To share the profit, the corporation should bear a part of initial capital requirement, equivalent to 20% of capital cost (or 10% with cash the rest with provision in kind) during the expansion phase. Total capital cost for the park development is roughly estimated to be Rp. 2.228 million (see Table K4.1).

Park revenue will mainly come from entrance fee and facility user charge, amounting to Rp. 373.4 million in the operational start year (possibly 2014) and increasing to Rp. 413.9 million in 2018 (five year later). Expenditure including depreciation will stay at around Rp. 320-340 million per year. Internal rate of return of the plan is calculated as 8.3%. Profit before sharing (park revenue) will amount to Rp. 51.0 million at the operational start and growing up to Rp. 90.0 million in 2018. From this park profit, 20% is assumed to be shared by the corporation under the profit sharing scheme (sharing ratio of 8 : 2) as revenue. While, the corporation bears the internal management cost (of Non-water Business Unit), and the resultant profit before the corporate tax will amount to Rp. 8.2 million at the operational start and Rp. 14.8 million in 2018 (see Table K4.2).

Boat rental business at Long Storage

This plan will be commenced soon in 2005. Therefore, revenue will be realized right after the corporation is established, provided that the employee co-operative of JRBDP transfers the agreement. The employee co-operative (succeeded by the corporation) is assumed to contribute

to initial fund requirement (Rp. 27.5 million in 2004 price) by 20 %, and be entitled to share the equivalent ratio of the profit from the boat rental. Profit before sharing will amount to Rp. 31.8 million at the establishment of the corporation in 2007 and increase to Rp. 35.8 million in 2011.

According to the sharing ratio, the corporation will realize the revenue of Rp. 6.4 million in the establishment year and Rp. 7.2 million in 2011 (see Table K4.3). Expenditures are to be internalized by the routine O&M of Water Services Division (until the Unit of Non-water Business is established).

(3) Regulatory Requirement and Coordination

Tourism operation and fee collection by the corporation do not necessitate the local governments to prepare new and enabling regulations. The corporation may only execute the plan in accordance with locally prevailing laws / regulations related to tourism operation. The recreation park may entail a permit acquisition for the concerned business permit from the relevant authority.

The corporation is recommended to answer for the local employment needs through the park operation. The park will also generate business opportunities (such as food stall and kiosk). The corporation should timely disseminate such business and employment information to the surrounding local communities.

## K4.2 Sand Mining

Proposed corporation may adopt two approaches to revenue generation through sand mining. The first one is a regulator-oriented activity, where the corporation is assigned to mining management and entitled to receive service fee from miners. Another will be in the form of dredging and sales by the corporation itself.

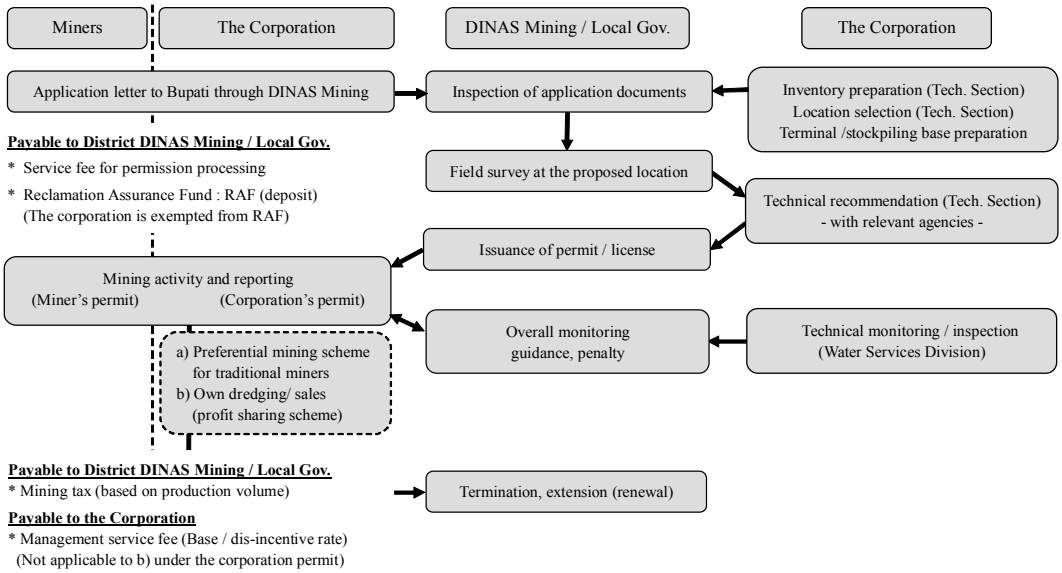
(1) Business Plan

Sand mining management

Current management practice for C-class mining in the Brantas River basin, stipulated by the Governor Decree of East Java : No. 29 Year 2003 is found as an applicable, upon slight modification, to the Jeneberang River basin, where;

First of all, the proposed corporation (Technical Bureau) prepares an inventory of C-class mining site and determine the locations that may be mined along the Jeneberang and other managed rivers. Then, the Head of District DINAS Mining on behalf of district government will authorize an issuance of mining permit, upon technical recommendation (location, method, volume, etc.) from Technical Bureau.

**Sand mining management system in the corporation's managed rivers**




Permitted miners will conduct mining in the approved sites under the control of the corporation (Water Services Division) and DINAS Mining, and pay service fee to the corporation and mining tax to district government. Obligatory mining tax payable to the district government will remain, since the tax earmarking will face the challenge contested by the district government. Accordingly, the proposed corporation is recommended to introduce the mining management service fee, to be calculated according to the volume of production.

Mining service fee payable by miners should be introduced on the ground that the corporation is responsible for inventory management, site selection, terminal and stockpiling base preparation, periodic monitoring and inspection (to monitor whether the miners comply with the provisions of technical recommendation).

Mining service fee can be set at the similar level to the present tariff of PJT I, and resultantly around 25% of the current tax payable to district government. It is also advised that the concept of dis-incentive be introduced to the tariff applicable to mining in the lower reach (tentatively 1.5 times of the upper stream mining), so as to provide an economic signal for the existing miners to shift to the upper stream of the reservoir. Proposed base tariff (in the establishment year) for each type of material is fallen into 1-2% of the present market price.

| Type of mining material | Proposed base tariff (per $m^3$) | Proposed "dis-incentive" tariff for lower reach from reservoir (per $m^3$) | Notes |
|---|---|---|---|
| Sand (Pasir) | Rp. 300 | Rp. 450 | 20% increase in every 3 years |
| Gravel (Batu pecah) | Rp. 600 | Rp. 900 | ditto |
| River stone (Batu kali) | Rp. 450 | Rp. 900 | ditto |
| Silt (Sirtu) | Rp. 300 | Rp. 450 | ditto |

The service fee will be charged to all miners active in the managed rivers but not applied to own dredging work (or profit sharing scheme, explained later), and be collected both at new check point at the entrance of Bili-Bili reservoir by the Water Services Division and the existing points (collection at this points can be assigned to the district government).

At the same time, the corporation is suggested to back up the shift of traditional miners to the upper stream through preferential site allocation scheme and the empowerment program. Under this mining scheme, the corporation will secure the permitted sites for the traditional miners from the lower reach, and charge a part of permission fee and service fee. On the other hand, intending miners are requested to form mining co-operative (or any formal group) preferably with transporters as a condition of entry into this scheme. During the process of co-operative formation and strengthening, the corporation may render the empowerment support as one of the community support program.

Own dredging and sales

As sufficient capacity of dredging equipment becomes available, the corporation (Water Services Division in collaboration with Technical Bureau) will be able to schedule dredging activity to its own accord, and sell mining products to the wholesale market. Dredging work itself has not entailed mining permit acquisition. If the corporation intends to sell sediment materials stockpiled after dredging, it will be advisable to apply for mining permission according to the stockpiling area for excavation.

To promote dredging and selling, the corporation is suggested to make use of profit-sharing scheme. Profit-sharing scheme that relies on financial and technical capacity of counterpart contractor will be beneficial to the corporation, since it lacks cash on hand and heavy equipment particularly at the initial stage. The corporation will handle initial site selection and permit acquisition, and share the profit after sales according to the agreement with counterpart.

(2) Financial Projection

Sand mining management

Given the demand-pushing factors such as economic growth of Makassar and *Maminassata* Metropolitan Development, it is assumed that production of C-class mining products be stably increased particularly in the upper stream to the reservoir, while the mining in the lower reach is gradually ceased. Production volume (sand, gravel, river stone, silt) at the establishment of the corporation in 2007 is estimated to be 643 thousand $m^3$ (266 and 368 thousand $m^3$ for sand and others respectively) in the corporation's working area, referring to the average production level during the last four years. The production volume is also supposed to increase by 2.0 % per annum.

However, it is estimated that mining service fee be not immediately introduced nor accepted at the same time of the corporation's establishment. Accordingly, revenue from sand mining

management is assumed to be realized in 2008 and estimated as Rp. 196.2 million in 2008, while still taking into account partial enforcement of fee payment. Revenue will increase to Rp. 275.7 million in 2011 as fee payment gets enforced more tightly (see Table K4.4-1). Expenditures are to be internalized by the routine O&M of Water Services Division.

Own dredging and sales

With more dredging equipment to be handed over from JRBDP (in 2009) to the corporation, the corporation will be able to form profit-sharing scheme through providing those equipment to the counterpart contractor. It is targeted that the corporation annually dredge 300 thousand $m^3$ (377 thousand $m^3$ in case of PJT II in 2003) and sell as much as possible to the wholesale market. It is assumed that 30% of the total dredging volume be top soil (for grounding work) with less salable value, compared to sand.

Assuming that every dredging works are undertaken by profit-sharing scheme (sharing ratio of 8:2), the shared profit (as revenue of the corporation) will amount to Rp. 106.4 million in 2010 (see Table K4.4-1). The corporation will cover the permission acquisition cost to the district government and internal management cost (to be internalized by the routine O&M cost of Water Services Division).

(3) Regulatory Requirement and Coordination

Provincial government is recommended to issue the Decree to realize the sand mining management in the above manner, that addresses the following particulars;

- Delegation of responsibility for C-class mining site inventory and selection, recommendation during permit appraisal, terminal and stock-pilling yard preparation, monitoring and inspection services, to the corporation
- Introduction of mining management service fee payable to the corporation and dis-incentive tariff regime to cease mining activity in the lower reach
- Exemption of Reclamation Assurance Fund under the corporation's permit

In parallel, the corporation should maintain a contact with DINAS Mining of Gowa and coordinate on the demarcation at site and fee collection system. Miners communities active particularly in the lower reach need empowered to form the co-operative (or any formal group) operable in the upper stream. The corporation is also expected to mitigate conflicts between the communities in the upper and lower reaches through security assurance measures at the mining sites.

## K4.3 Reservoir Fishery Management

(1) Business Plan

Bili-Bili reservoir has originally potential of fishery to be tapped by the local fishermen. To sustain the fishery activity, the proposed corporation may conduct proper reservoir management

and control the allowable area so as not to bring about eutrofication that shortens reservoir function and deteriorates water quality. Reservoir fishery management (assuming floating net-cage breeding as main activity) will cover zoning and control of allowable fishing area, monitoring and inspection (water quality and fishery practice), and ground reclamation.

In compensation for such a management, the corporation will make an agreement of fishery ground use with fishermen and charge service fee for the water ground use. The service fee for water ground use, payable to the corporation, is set as Rp. 2,000/$m^2$/year at the beginning, referring to the current tariff charged by PJT II.

As already discussed, the study of Hasanuddin University (2001) proposed the maximum area for floating net-cage breeding in the reservoir be as much as 5.6 ha (0.5 % of the effective reservoir area). The recent landslide however affects fish breeding condition, resulting in decrease of population. Immediate introduction of the ground user fee is not expected until the breeding condition is restored. It is therefore assumed that possibly from 2009, around 0.35 ha (equivalent to 131 tons of fish production, the same level before landslide) be available on a semiannual basis (during the rainy season, when enough quantity of water is stored), and annually increased by 20 %.

Fishermen still needs general fishing permits from district DINAS Fishery, as specified in the prevailing regulation, then is requested to apply for the fishery ground use to the corporation. Water Services Division I, assigned to the reservoir management, should be also responsible for reservoir fishery control. Since the corporation staff lacks the knowledge on fish breeding, the corporation may collaborate with related research institutions, if necessary.

(2) Financial Projection

Given the tariff of the service fee and fishery area initially open to the fishermen, revenue will be estimated to be Rp. 7.0 million at the start of fishery operation in 2009, and increased to Rp. 10.1 million in 2011 (see Table K4.4-2). Expenditures are to be internalized by the routine O&M of Water Services Division.

(3) Regulatory Requirement and Coordination

Managerial demarcation on the reservoir fishery between the corporation and district government of Gowa may be an issue. The corporation should explain that reservoir functions for not only fishery ground, also wider public services, and therefore that reservoir fishery needs integrated into management scope of the corporation. Provincial regulation that authorizes the corporation to control reservoir fishery and to receive the compensation should be also prepared.

## K4.4 Land Use Management and Utilization

(1) Business Plan

Land use management

The corporation is responsible for the land use control within the river area in order to maintain river function and minimize natural disaster risk. Provincial Regulation No.5, 1999 on river area use stipulates that land usage within the borderline be limited to the agriculture, mining, public utility, transport, water intake and dumping, and advertisement purposes. Water Services Division of the corporation shall conduct on-site periodical management activities on the river administration area such as inventory preparation and updating, patrol and measurement.

In partial compensation for such land use management activities, the corporation is suggested to introduce land use charge upon the agreement with users, as already practiced by PJTs. If any third parties intend to use the river area under jurisdiction by the government, they should firstly apply for the permission to the provincial government (Provincial DINAS PSDA), and inform the corporation of the application. The proposed corporation will then prepare technical recommendation on the land use application through field measurement. Once application is issued, the corporation shall notify to and make a land use contract with the permit holder.

To impose the land use charge to the intending users, the corporation may refer to the present tariff regime determined by PJT I as below. Water Services Division will be also responsible for contract management, charging and collection.

| Purpose | Basic tariff (for city) Rp. | Basic tariff (for district) | Notes |
|---|---|---|---|
| Agriculture | | | |
| 1) Fertile | 110 /$m^2$ / year | | Triple |
| 2) Less fertile | 70 / $m^2$ /year | | Double |
| 3) Infertile | 30 / $m^2$ /year | | Single |
| Non-agriculture | | | |
| 1) Telephone, electricity cable, water pipe | | | |
| - installed with poles | 750 / m / year | 600 / m / year | |
| - installed with tree | 1,000 / m / year | 800 / m / year | |
| - intersection of cable / pipe | 1,500 / year | 1,200 / year | |
| 2) Installation of billboard | 1,000 / unit/ month | 800 / unit/ month | |
| 3) Installation of banners | 3,000 / month | 2,400 / month | |
| 4) Water transport infrastructure | 400 / $m^2$/ year | 320 / $m^2$/ year | |
| 5) Intake structure | 400 / $m^2$/ year | 320 / $m^2$/ year | |
| 6) Drying site and other good storage | 100 / $m^2$/ year | 80 / $m^2$/ year | |

Note : Basic tariffs for city are applied to Malang, Blitar, Kediri, Mojokerto cities, and set as applicable rates for Makassar city in case of the Jeneberang. District rates are applicable to Gowa and Takalar.

It is noted that land use charge to ensure land use management can be applicable only to the area defined as river area that is "acquired" by the government. Such an acquired area is roughly estimated to be about 74 ha along the riverside with dike facility (about 11.9 km for right bank and 9.3 km for left). Of the area, farm use accounts for almost 29.4 % (about 21.8 ha), followed by bush / bare land and settlement use.

Considering a difficulty to immediately introduce and enforce land use charge payment, area subject to charging is targeted as 50% (equivalent to 10.9 ha out of 21.8 ha) of the present farmland area (assuming less fertile, applicable rate of Rp. 70/$m^2$) at the beginning of the development phase in 2009 and is expected to annually increase by 5 %. Riverside use by ferryboat operators are also subject to non-agricultural charge, but the total charge is estimated to be very small.

Land utilization (own land development)

In addition, the corporation can utilize its own properties in Tanjung Merdeka and Barombong (though area size is rather limited) located at either bank of the Jeneberang River mouth, and should study the optimal way of utilization through public-private partnership (in the form of joint development and leasing). The acquired area adjacent to the reservoir can be also regarded as potential resource for commercial optimization. Utilization of those properties needs integrated into the long-term tourism planning. However, any financial involvement in development activity should be the long-term action.

(2) Financial Projection

Land use management

Considering a difficulty to immediately introduce and enforce land use charge payment, area subject to charging is targeted as 50% (equivalent to 10.9 ha) of the present farmland area (assuming less fertile, applicable rate of Rp. 70/$m^2$) in 2009. As a result, revenue for farmland use will be realized to be Rp. 7.6 million in 2009.

Revenue from non-agricultural land use is set as 50% of the annual revenue from farmland. Revenue for non-agriculture use will be calculated as Rp. 3.8 million. Total amount will be Rp. 11.4 million in 2009. Given annual increase of administrative area subject to land use charge by 5 %, revenue will be increased to Rp. 12.6 million in 2011 (see Table K4.4-3). Expenditures are to be internalized by the routine O&M of Water Services Division.

(3) Regulatory Requirement and Coordination

Provincial Regulation: No.5, 1999 on the river area allows the imposition of land use charge to the intending users. However, the regulation needs revised so that the corporation be enabled to involve in the regulatory process as a controller and charge in compensation for the land use management activity. The corporation should announce and explain an introduction of new regulatory frame and land use charge to the intending (or existing) users in order to gain the understanding.

## K4.5 Waste Water Monitoring

Aside from river water quality monitoring as government service obligation (PSO), the corporation is also suggested to conduct waste water (pollution source) monitoring (see the

details in Supporting Report F on water quality monitoring and pollution control). Upon a revision of the legislation (Provincial Regulation No.7, 2003), the corporation will be enabled to charge monitoring service fee in compensation for the periodical sampling and laboratory analysis of waster water.

To calculate chargeable rate, the cost plus fee concept is employed. Expected margin (20 %) is to be added to the average cost of laboratory analysis services per estimated discharge volume ($m^3$) to the Jeneberang River. Base fee rate is derived as Rp. 244.3 per $m^3$ of discharge at 2004 price (to be revised every three years by 20 %, Rp. 293.2 / $m^3$ in 2007 as a result). Waste discharge to the river is assumed to increase in proportional to the industrial water demand of PDAM.

However, preparation of the enabling legislation and enforcement of the fee payment may be awaited some years, and possibly realized in 2009 (but the fee payment being still partly enforced). Revenue from this service will amount to Rp. 76.5 million in 2009 and Rp. 101.2 million in 2011. Required expenditures (i.e. total cost of waste monitoring services, proportional to an increase of pollutant unit) are to be internalized by the O&M cost of Sub-Bureau of Environment.

### K4.6 Construction and Equipment Lease

Reflecting the past experiences of JRBDP, the corporation may specialize in dredging and earthwork. With the limited number of staff available, it will be advisable to limit its scope to contract management (supervision) work. Judging by an availability of equipment during the initial phase and low possibility of acquiring the (construction) business license, however, construction service may have the least prospects.

Availability of heavy equipment will be also related to equipment lease. In the long run, however, the corporation can gradually divert equipment for lease, as extra units become available. The Unit of Non-water Business (to be established during the expansion phase) will be responsible for the operation of equipment lease service.

### K4.7 Summary of Non-water Revenues

Plan of non-water revenue (in the short to mid terms) is summarized as follows.

| Revenue item | Proposed fee/charge/earning | Responsible unit | Collection | Starting year | Enabling legal frame |
|---|---|---|---|---|---|
| **Commercial Services** | | | | | |
| Recreation Park<br>- *Fully chargeable to beneficiary* | Profit shared with private partner<br>The park operation will impose visitor the followings;<br>- Entrance and car parking fee<br>- Space usage charge<br>- Water sport facility use charge<br>- Convention packet charge, etc. | Technical Bureau (Preparatory work)<br>Unit of Non-water Business: UNWB<br>(Operational management, after the park establishment) | Profit shared : UNWB<br>Park revenue : Private operator | 2009<br>(Preparation)<br>2012<br>(Investment)<br>2014<br>(Operation) | According to the prevailing regional regulation on tourism business<br>Related business permit |
| Boat Rental<br>- *Fully chargeable to beneficiary* | Profit shared with private partner<br>Boat rental operation will impose user boat rental and excursion tour charge. | Water Services Division<br>(Until UNWB is established)<br>Unit of Non-water Business<br>(after establishment) | Profit shared : Water Serv. Divi. / UNWB<br>Rental revenue : Private operator | 2005<br>(Operation)<br>2007<br>(Profit sharing handed over) | ditto |
| Dredging and Sales<br>- *Partly chargeable to beneficiary* | Profit shared with private partner, or wholesale market prices of sediment material | Technical Bureau<br>Water Services Division | Water Service Division | 2010 | C-class mining permit (for selling) |
| Reservoir Fishery Management<br>- *Fully chargeable* | Fishery water ground use fee<br>per $m^2$ of water ground, based on the ground use agreement | Water Services Division<br>(Site management service) | Water Service Division | 2009 | New or revised legislation on Prov. Regulation No.8, 1991 |
| Construction / Equipment Lease<br>- *Fully chargeable to beneficiary* | Contract amount (construction)<br>Lease fee (equipment lease) | Unit of Non-water Business | UNWB | Long-term action | Related business permit |
| **Quasi-public Services** | | | | | |
| Land Use / River Area Management<br>- *Partly chargeable to beneficiary* | Land use charge<br>per $m^2$ (farm land, pub. structure)<br>per m (public utility cable, pipe)<br>per unit / month (advertisement) | Water Services Division | Water Service Division | 2009<br>(Enforcement and collection) | New or revised legislation on Prov. Regulation No.5, 1999<br>Rrov. Regulation No.7, 1994 |
| C-class Mining Management<br>- *Partly chargeable to beneficiary* | Sand mining management fee<br>per $m^3$ of production volume, depending on the kind of material | Technical Bureau<br>(Tech. recommendation)<br>Water Services Division<br>(Site management service) | Water Service Div. or District Government<br>(at check points) | 2008<br>(Enforcement and collection) | New or revised legislation on Prov. Regulation No.7, 1993, and Gov. Decree No. KPTS 78/III/'94 |
| Waste Water Monitoring<br>- *Partly chargeable* | Waster water monitoring fee<br>per $m^3$ of waste discharge volume | Technical Bureau<br>(Environmental sub-Bureau) | Environmental Sub-Bureau | 2009<br>(Enforcement and collection) | New or revised legislation on Prov. Regulation No.7, 2003 |

# *Tables*

# Table K4.1 Estimated Capital Cost of Recreation Park at Bili-Bili Reservoir

| Work Item | Unit | Quantity | Unit Cost (Rp.) | Amount (Rp.) | |
|---|---|---|---|---|---|
| Capital Expenditure for Bili-Bili Tourism Park (two-sister island) | | | | | |
| (1) Basic Infrastucture | | | | | |
| (a) Land preparation | | | | | 2,640,000 |
| 1) Clearing / grubbing | $m^2$ | 2,000 | 1,320 | 2,640,000 | |
| (b) Entrace roads | | | | | 111,880,400 |
| 1) Earthwork - excavation | $m^3$ | 440 | 6,660 | 2,930,400 | |
| 2) Asphalt pavement | $m^3$ | 900 | 75,500 | 67,950,000 | |
| 3) Drain work | m | 410 | 100,000 | 41,000,000 | |
| (c) Parking area | | | | | 190,240,000 |
| 1) Earthwork - embankment | $m^3$ | 4,800 | 6,300 | 30,240,000 | |
| 2) Asphalt pavement | $m^2$ | 2,000 | 75,500 | 151,000,000 | |
| 3) Eart berms and planting | LS | 1 | 9,000,000 | 9,000,000 | |
| (d) Pedestrian roads | | | | | 179,960,000 |
| 1) Earthwork - excavation | $m^3$ | 2,000 | 6,660 | 13,320,000 | |
| 2) Gravel pavement | $m^3$ | 1,200 | 70,200 | 84,240,000 | |
| 3) Step works | $m^2$ | 920 | 70,000 | 64,400,000 | |
| 4) Drain works | m | 120 | 150,000 | 18,000,000 | |
| Sub-total (1) | | | | | **484,720,400** |
| (2) Building / Related Facilities | | | | | |
| (a) Management office | | | | | 54,410,000 |
| 1) Earthwork - embankment | $m^3$ | 700 | 6,300 | 4,410,000 | |
| 2) Building | $m^2$ | 50 | 1,000,000 | 50,000,000 | |
| (b) Toilets | $m^2$ | 30 | 1,000,000 | 30,000,000 | 30,000,000 |
| (c) Water supply | | | | | 26,765,000 |
| 1) Earthwork - embankment | $m^3$ | 150 | 6,300 | 945,000 | |
| 2) Equipment | | | | | |
| - Submerged pump | LS | 1 | 7,910,000 | 7,910,000 | |
| - Slow sand filter | LS | 1 | 9,800,000 | 9,800,000 | |
| - Distribution tank | LS | 1 | 5,110,000 | 5,110,000 | |
| - Pipe system | m | 600 | 5,000 | 3,000,000 | |
| (d) Sanitary facility | | | | | |
| 1) Earthwork | | | | | 59,083,000 |
| - Excavation (septic tank) | $m^3$ | 50 | 6,660 | 333,000 | |
| - Excavation (evap. bed) | $m^3$ | 2,000 | 6,660 | 13,320,000 | |
| 2) Equipment | | | | | |
| - Septic tank | LS | 1 | 3,780,000 | 3,780,000 | |
| - Seepage trech | LS | 1 | 840,000 | 840,000 | |
| - Evapotranspiration bed | LS | 1 | 40,810,000 | 40,810,000 | |
| (e) Solid waste collector | LS | 1 | 2,500,000 | 2,500,000 | 2,500,000 |
| (f) Lookout spots | | | | | 92,020,000 |
| 1) Earthwork - embankment | $m^3$ | 400 | 6,300 | 2,520,000 | |
| 2) Building - lookout shelter | No. | 2 | 3,000,000 | 6,000,000 | |
| 3) Miscellaneous work | | | | | |
| - Flooring | $m^2$ | 600 | 45,000 | 27,000,000 | |
| - Guardrail | $m^2$ | 900 | 45,000 | 40,500,000 | |
| - Benches | No. | 40 | 400,000 | 16,000,000 | |
| (g) Shelters | No. | 20 | 1,940,000 | 38,800,000 | 38,800,000 |
| Sub-total (2) | | | | | **303,578,000** |
| (3) Recreational Facilities / Plants | | | | | |
| (a) Beach area | | | | | 573,790,000 |
| 1) Step-approach | | | | | |
| - Earthwork | | | | | |
| Excavation (step-approach) | $m^3$ | 900 | 6,300 | 5,670,000 | |
| Excavation (revetment / unsound rock) | $m^3$ | 2,400 | 6,300 | 15,120,000 | |
| - Step-work | $m^2$ | 1,500 | 70,000 | 105,000,000 | |
| - Revetment Work | $m^2$ | 1,000 | 140,000 | 140,000,000 | |
| 2) Gravel approach | $m^3$ | 2,000 | 13,000 | 26,000,000 | |
| 3) Retaining walls for sand beach | m | 300 | 140,000 | 42,000,000 | |
| 4) Man-made sand beach | $m^3$ | 8,000 | 30,000 | 240,000,000 | |
| (b) Water-sports area | | | | | 176,660,000 |
| 1) Earthwork - Excavation / revetment | $m^3$ | 1,000 | 6,660 | 6,660,000 | |
| 2) Revetment (step) works | $m^2$ | 1,000 | 140,000 | 140,000,000 | |
| 3) Floating docks | No. | 3 | 10,000,000 | 30,000,000 | |
| (c) Plants | | | | | 388,000,000 |
| 1) Avenue plants | No. (tree) | 200 | 8,000 | 1,600,000 | |
| 2) Ornamental zone | | | | | |
| - Soil dressing & ornamentation | ha | 3 | 35,000,000 | 105,000,000 | |
| 3) Forest zone | | | | | |
| - Soil dressing | ha | 15 | 8,000,000 | 120,000,000 | |
| - Reforestation | ha | 15 | 3,760,000 | 56,400,000 | |
| 4) Ornamental lookout | | | | | |
| - Soil dressing & ornamentation | ha | 3 | 35,000,000 | 105,000,000 | |
| Sub-total (3) | | | | | **1,138,450,000** |
| (4) Others | | | | | |
| (a) Minor works (e.g. direction sign) | LS | 1 | 11,500,000 | 11,500,000 | 11,500,000 |
| (b) Electric supply system | LS | 1 | 30,000,000 | 30,000,000 | 30,000,000 |
| Sub-total (4) | | | | | **41,500,000** |
| (5) Conventional facility for multiple use Sub-total (5) | $m^2$ | 150 | 1,300,000 | 195,000,000 | **195,000,000** |
| Total (1) to (5) | | | | | **2,163,248,400** |
| (6) Miscellanious (3% of total (1) to (4)) | | | | | 64,897,452 |
| **Grand Total** | | | | | **2,228,145,852** |

# Table K4.2 Financial Projection of Tourism / Recreational Revenue (Recreational Park)

| Constant '04 price | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) Visitor (adult) | | | 16,380 | 16,871 | 17,378 | 17,899 | 18,436 | 18,989 | 19,559 | 20,145 | 20,750 | 21,372 | 22,013 | 22,674 | 23,354 |
| 2) Visitor (child) | | | 24,570 | 25,307 | 26,066 | 26,848 | 27,654 | 28,483 | 29,338 | 30,218 | 31,125 | 32,058 | 33,020 | 34,011 | 35,031 |
| 3) Parking use car | | | 4,095 | 4,218 | 4,344 | 4,475 | 4,609 | 4,747 | 4,890 | 5,036 | 5,187 | 5,343 | 5,503 | 5,668 | 5,838 |
| 4) Stall/kiosk user (unit/month) | | | 240 | 250 | 260 | 270 | 280 | 290 | 300 | 310 | 320 | 330 | 340 | 350 | 360 |
| 5) Water sport use | | | 8,190 | 8,436 | 8,689 | 8,949 | 9,218 | 9,494 | 9,779 | 10,073 | 10,375 | 10,686 | 11,007 | 11,337 | 11,677 |
| 6) Food packet | | | 7,800 | 8,034 | 8,275 | 8,523 | 8,779 | 9,042 | 9,314 | 9,593 | 9,881 | 10,177 | 10,483 | 10,797 | 11,121 |
| 7) Tour guidance (times) | | | 156 | 161 | 166 | 170 | 176 | 181 | 186 | 192 | 198 | 204 | 210 | 216 | 222 |
| 8) Convention facilty use | | | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 |
| Growth rate | 3.0% per annum | | | | | | | | | | | | | | |
| Fee for 1) | | | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Fee for 2) | | | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Fee for 3) | | | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Fee for 4) | | | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 |
| Fee for 5) | | | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Fee for 6) | | | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 | 7,000 |
| Fee for 7) | | | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Fee for 8) | | | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 | 400,000 |
| Revised to increase | 0.0% per every three years (constant price) | | | | | | | | | | | | | | |

| Constant '04 price | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenues ('000) | | | 373,350 | 383,099 | 393,094 | 403,345 | 413,859 | 424,642 | 435,705 | 447,054 | 458,698 | 470,647 | 482,910 | 495,495 | 508,413 |
| - Entrance fee (adult) | | | 65,520 | 67,486 | 69,510 | 71,595 | 73,743 | 75,956 | 78,234 | 80,581 | 82,999 | 85,489 | 88,053 | 90,695 | 93,416 |
| - Entrance fee (child) | | | 49,140 | 50,614 | 52,133 | 53,697 | 55,308 | 56,967 | 58,676 | 60,436 | 62,249 | 64,117 | 66,040 | 68,021 | 70,062 |
| - Parking fee | | | 8,190 | 8,436 | 8,689 | 8,949 | 9,218 | 9,494 | 9,779 | 10,073 | 10,375 | 10,686 | 11,007 | 11,337 | 11,677 |
| - Space use fee for stall / kiosk | | | 36,000 | 37,500 | 39,000 | 40,500 | 42,000 | 43,500 | 45,000 | 46,500 | 48,000 | 49,500 | 51,000 | 52,500 | 54,000 |
| - Water sport facility user fee | | | 81,900 | 84,357 | 86,888 | 89,494 | 92,179 | 94,945 | 97,793 | 100,727 | 103,748 | 106,861 | 110,067 | 113,369 | 116,770 |
| - Food packet | | | 54,600 | 56,238 | 57,925 | 59,663 | 61,453 | 63,296 | 65,195 | 67,151 | 69,166 | 71,241 | 73,378 | 75,579 | 77,847 |
| - Tour guidance fee | | | 15,600 | 16,068 | 16,550 | 17,047 | 17,558 | 18,085 | 18,627 | 19,186 | 19,762 | 20,354 | 20,965 | 21,594 | 22,242 |
| - Convention packet | | | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 |
| Expenditures ('000) | 1,114,073 | 1,114,073 | 114,638 | 114,982 | 115,336 | 115,701 | 116,077 | 195,264 | 116,863 | 117,274 | 117,697 | 118,132 | 197,381 | 119,043 | 119,520 |
| - Park construction | 1,013,648 | 1,013,648 | | | | | | | | | | | | | |
| - Convention facility building | 100,425 | 100,425 | | | | | | | | | | | | | |
| - O&M cost (at site) | (3% of construction cost) | | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 |
| - Periodic landscaping cost | | | | | | | | 78,800 | | | | | 78,800 | | |
| - Convention service cost | (60% of the revenue) | | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 |
| - Management cost | (5% of O&M + service cost) | | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 |
| - Taxes | (10% of entrance fee) | | 11,466 | 11,810 | 12,164 | 12,529 | 12,905 | 13,292 | 13,691 | 14,102 | 14,525 | 14,961 | 15,409 | 15,872 | 16,348 |
| Balance | -1,114,073 | -1,114,073 | 258,712 | 268,117 | 277,758 | 287,644 | 297,782 | 229,378 | 318,842 | 329,780 | 341,002 | 352,515 | 285,529 | 376,452 | 388,893 |
| **Internal Rate of Return** | **8.3%** | | | | | | | | | | | | | | |

**Profit & Loss Statement of the Recreational Park Plan**

| | Constant '04 price | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Revenues ('000) | | | 373,350 | 383,099 | 393,094 | 403,345 | 413,859 | 424,642 | 435,705 | 447,054 | 458,698 | 470,647 | 482,910 | 495,495 | 508,413 |
| | - Park revenue | | | 310,950 | 320,699 | 330,694 | 340,945 | 351,459 | 362,242 | 373,305 | 384,654 | 396,298 | 408,247 | 420,510 | 433,095 | 446,013 |
| | - Convention packet | | | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 | 62,400 |
| | Expenditures ('000) | | | 322,389 | 322,733 | 323,087 | 323,452 | 323,828 | 324,215 | 340,374 | 340,784 | 341,207 | 341,643 | 139,362 | 139,825 | 140,301 |
| | - O&M cost (at site) | | | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 | 60,819 |
| | - Convention service cost | | | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 | 37,440 |
| | - Depreciation cost | | | 207,751 | 207,751 | 207,751 | 207,751 | 207,751 | 207,751 | 223,511 | 223,511 | 223,511 | 223,511 | 20,781 | 20,781 | 20,781 |
| | - Management cost | | | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 | 4,913 |
| | - Taxes | | | 11,466 | 11,810 | 12,164 | 12,529 | 12,905 | 13,292 | 13,691 | 14,102 | 14,525 | 14,961 | 15,409 | 15,872 | 16,348 |
| | - Financing cost (assuming non-borrowed fund) | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Profit ('000) | | | 50,961 | 60,366 | 70,008 | 79,893 | 90,031 | 100,427 | 95,331 | 106,269 | 117,491 | 129,004 | 343,547 | 355,670 | 368,112 |
| | Revenue for each party | | | | | | | | | | | | | | | |
| 80% | Private partner's (operator) share | | | 40,769 | 48,293 | 56,006 | 63,915 | 72,025 | 80,342 | 76,265 | 85,016 | 93,993 | 103,203 | 274,838 | 284,536 | 294,490 |
| 20% | The corporation's share | | | 10,192 | 12,073 | 14,002 | 15,979 | 18,006 | 20,085 | 19,066 | 21,254 | 23,498 | 25,801 | 68,709 | 71,134 | 73,622 |
| | Management cost | | | | | | | | | | | | | | | |
| | (20% of the above share) | | | 2,038 | 2,415 | 2,800 | 3,196 | 3,196 | 3,196 | 3,196 | 3,196 | 3,196 | 3,196 | 13,742 | 14,227 | 14,724 |
| | Profit of the corporation | | | 8,154 | 9,659 | 11,201 | 12,783 | 14,810 | 16,890 | 15,870 | 18,058 | 20,302 | 22,605 | 54,968 | 56,907 | 58,898 |
| | Proposed initial capital provision by the corporation | | 20.0% | 445,629 | Or possible to provide equity in kind (equipment, vehicle and land) | | | | | | | | | | | |
| | **RoI for the Corporation** | **7.3%** | | | | | | | | | | | | | | |

# Table K4.3 Financial Projection of Tourism / Recreational Business (Boat Rental at Long Storage)

| Constant '04 price | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) Pedal boat user | 3,393 | 4,592 | 4,661 | 4,731 | 4,802 | 4,874 | 4,947 | 5,021 | 5,096 | 5,173 | 5,250 | 5,329 | 5,409 | 5,490 | 5,572 |
| 2) Excursion boat user (adult) | 2,925 | 3,959 | 4,018 | 4,078 | 4,139 | 4,201 | 4,264 | 4,328 | 4,393 | 4,459 | 4,526 | 4,594 | 4,663 | 4,733 | 4,804 |
| 3) Excursion boat user (child) | 5,265 | 7,125 | 7,232 | 7,341 | 7,451 | 7,563 | 7,676 | 7,791 | 7,908 | 8,027 | 8,147 | 8,269 | 8,393 | 8,519 | 8,647 |
| Growth rate | 1.5% | per annum | | | | | | | | | | | | | |
| Fee for 1) | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| Fee for 2) | 3,500 | 3,500 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| Fee for 3) | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 | 2,500 |
| Revised to increase | 0.0% | per every three years | | | | | | | | | | | | | |

| Constant '04 price | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenues ('000) | 64,116 | 86,770 | 86,063 | 87,354 | 88,664 | 89,994 | 91,344 | 92,714 | 94,105 | 95,517 | 96,949 | 98,403 | 99,880 | 101,378 | 102,898 |
| - Boat rental charge | 40,716 | 55,102 | 55,929 | 56,768 | 57,619 | 58,484 | 59,361 | 60,251 | 61,155 | 62,072 | 63,003 | 63,948 | 64,908 | 65,881 | 66,870 |
| - Excursion boat charge (adult) | 10,238 | 13,855 | 12,054 | 12,234 | 12,418 | 12,604 | 12,793 | 12,985 | 13,180 | 13,378 | 13,578 | 13,782 | 13,989 | 14,199 | 14,412 |
| - Excursion boat charge (child) | 13,163 | 17,813 | 18,080 | 18,352 | 18,627 | 18,906 | 19,190 | 19,478 | 19,770 | 20,066 | 20,367 | 20,673 | 20,983 | 21,298 | 21,617 |
| Rate of inflation | 0.0% | per annum | | | | | | | | | | | | | |
| Expenditures ('000) | 73,529 | 51,693 | 51,516 | 51,838 | 52,166 | 52,499 | 52,836 | 53,179 | 53,526 | 53,879 | 54,237 | 54,601 | 54,970 | 55,344 | 55,725 |
| - Moorage/boarding step buildin | 22,500 | | | | | | | | | | | | | | |
| - Other preparation | 5,000 | excluding sunk cost of boat procurement | | | | | | | | | | | | | |
| - O&M cost (at site) | 33,206 | 34,339 | 34,303 | 34,368 | 34,433 | 34,500 | 34,567 | 34,636 | 34,705 | 34,776 | 34,847 | 34,920 | 34,994 | 35,069 | 35,145 |
| - Tax and service fee | 12,823 | 17,354 | 17,213 | 17,471 | 17,733 | 17,999 | 18,269 | 18,543 | 18,821 | 19,103 | 19,390 | 19,681 | 19,976 | 20,276 | 20,580 |
| Balance | -9,413 | 35,078 | 34,547 | 35,515 | 36,498 | 37,496 | 38,508 | 39,536 | 40,579 | 41,637 | 42,712 | 43,803 | 44,910 | 46,033 | 47,174 |
| **Internal Rate of Return** | **372.0%** | | | | | | | | | | | | | | |

**Profit & Loss Statement of the Boat Rental at Long Storage**

| Constant '04 price | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenues ('000) | 64,116 | 86,770 | 86,063 | 87,354 | 88,664 | 89,994 | 91,344 | 92,714 | 94,105 | 95,517 | 96,949 | 98,403 | 99,880 | 101,378 | 102,898 |
| - Boat rental charge | 40,716 | 55,102 | 55,929 | 56,768 | 57,619 | 58,484 | 59,361 | 60,251 | 61,155 | 62,072 | 63,003 | 63,948 | 64,908 | 65,881 | 66,870 |
| - Excursion boat charge | 23,400 | 31,668 | 30,134 | 30,586 | 31,045 | 31,511 | 31,983 | 32,463 | 32,950 | 33,444 | 33,946 | 34,455 | 34,972 | 35,496 | 36,029 |
| Expenditures ('000) | 48,779 | 54,443 | 54,266 | 54,588 | 54,916 | 55,249 | 55,586 | 55,929 | 56,276 | 56,629 | 56,987 | 54,601 | 54,970 | 55,344 | 55,725 |
| - O&M cost (at site) | 33,206 | 34,339 | 34,303 | 34,368 | 34,433 | 34,500 | 34,567 | 34,636 | 34,705 | 34,776 | 34,847 | 34,920 | 34,994 | 35,069 | 35,145 |
| - Tax and service fee | 12,823 | 17,354 | 17,213 | 17,471 | 17,733 | 17,999 | 18,269 | 18,543 | 18,821 | 19,103 | 19,390 | 19,681 | 19,976 | 20,276 | 20,580 |
| - Depreciation cost | 2,750 | 2,750 | 2,750 | 2,750 | 2,750 | 2,750 | 2,750 | 2,750 | 2,750 | 2,750 | 2,750 | 0 | 0 | 0 | 0 |
| - Financing cost (assuming non-borrowed fund) | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Profit ('000) | 15,337 | 32,328 | 31,797 | 32,765 | 33,748 | 34,746 | 35,758 | 36,786 | 37,829 | 38,887 | 39,962 | 43,803 | 44,910 | 46,033 | 47,174 |
| Revenue for each party | | | | | | | | | | | | | | | |
| 80% Private partner's (operator) share | 12,270 | 25,862 | 25,438 | 26,212 | 26,999 | 27,796 | 28,606 | 29,429 | 30,263 | 31,110 | 31,970 | 35,042 | 35,928 | 36,827 | 37,739 |
| 20% The corporation's share | 3,067 | 6,466 | 6,359 | 6,553 | 6,750 | 6,949 | 7,152 | 7,357 | 7,566 | 7,777 | 7,992 | 8,761 | 8,982 | 9,207 | 9,435 |
| Expenditures ('000) | Internalized in the routine O&M cost of the corporation | | | | | | | | | | | | | | |
| Proposed initial capital provision by the corporation | | 20.0% | 5,500 | | | | | | | | | | | | |

# Table K4.4 Projection of Other Non-water Revenues

**1. Sand Mining Management and Own Dredging (through Profit Sharing Scheme**

| Constant '04 price | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sand Mining Management** | | | | | | | | | | | | | | | |
| | 266,000 | 271,320 | 276,746 | 282,281 | 287,927 | 293,685 | 299,559 | 305,550 | 311,661 | 317,895 | 324,253 | 330,738 | 337,352 | 344,099 | 350,981 |
| | 368,000 | 375,360 | 382,867 | 390,525 | 398,335 | 406,302 | 414,428 | 422,716 | 431,171 | 439,794 | 448,590 | 457,562 | 466,713 | 476,047 | 485,568 |
| 1) Sand-upper reach | 133,000 | 135,660 | 207,560 | 211,711 | 215,945 | 293,685 | 299,559 | 305,550 | 311,661 | 317,895 | 324,253 | 330,738 | 337,352 | 344,099 | 350,981 |
| 2) Others-upper reach | 184,000 | 187,680 | 287,150 | 292,893 | 298,751 | 406,302 | 414,428 | 422,716 | 431,171 | 439,794 | 448,590 | 457,562 | 466,713 | 476,047 | 485,568 |
| 3) Sand-lower reach | 133,000 | 135,660 | 69,187 | 70,570 | 71,982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4) Others-lower reach | 184,000 | 187,680 | 95,717 | 97,631 | 99,584 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Growth rate | 2.0% per annum | | | | | | | | | | | | | | |
| Management fee for 1)-base rate | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Management fee for 2)-base rate | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| Manag. fee for 3)-disincentive rate | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| Manag. fee for 4)-disincentive rate | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 |
| Revised to increase | 0.0% for management fee (per every three years) | | | | | | | | | | | | | | |
| **Own Dredging (profit sharing)** | | | | | | | | | | | | | | | |
| 1) Top soil (ground clay) | 0 | 0 | 0 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 | 90,000 |
| 2) Deposit material (sand) | 0 | 0 | 0 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 |
| Growth rate | 0.0% per annum | | | | | | | | | | | | | | |
| Wholesale market price for 1) | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 |
| Wholesale market price for 2) | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 |
| Rate of inflation | 0.0% for wholesale market prices | | | | | | | | | | | | | | |

| Constant '04 price | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Profit & Loss Statement** | | | | | | | | | | | | | | | |
| **Sand Mining Management** | Not introduced | | | | | | | | | | | | | | |
| Revenues ('000) | 160,275 | 196,177 | 206,085 | 240,236 | 275,671 | 270,941 | 276,360 | 281,887 | 287,525 | 293,276 | 299,141 | 305,124 | 311,227 | 317,451 | 323,800 |
| - Manag. fee (sand-upper) | 39,900 | 40,698 | 62,268 | 63,513 | 64,784 | 88,106 | 89,868 | 91,665 | 93,498 | 95,368 | 97,276 | 99,221 | 101,206 | 103,230 | 105,294 |
| - Manag. fee (others-upper) | 82,800 | 84,456 | 129,218 | 131,802 | 134,438 | 182,836 | 186,492 | 190,222 | 194,027 | 197,907 | 201,865 | 205,903 | 210,021 | 214,221 | 218,506 |
| - Manag. fee (sand-lower) | 59,850 | 61,047 | 31,134 | 31,757 | 32,392 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| - Manag. fee (others-lower) | 138,000 | 140,760 | 71,788 | 73,223 | 74,688 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (Raito of enforced fee payment) | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Expenditures ('000) | Internalized in the routine O&M cost of the corporation | | | | | | | | | | | | | | |
| **Own Dredging (profit sharing)** | | | | | | | | | | | | | | | |
| Revenues ('000) | 0 | 0 | 0 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 | 6,960,000 |
| - Ground clay sales | 0 | 0 | 0 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 | 1,080,000 |
| 20% (Salable rate) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| - Deposit material sales (soil) | 0 | 0 | 0 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 |
| 80% (Salable rate) | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| Rate of inflation | 0.0% per annum | | | | | | | | | | | | | | |
| Expenditures ('000) | 0 | 0 | 0 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 | 6,427,800 |
| 80% - Counterpart dredging cost | 80% of deposit production valu | | 0 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 | 5,880,000 |
| - Mining tax (ground clay) | 0 | 0 | 0 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 | 14,400 |
| - Mining tax (sand) | 0 | 0 | 0 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 |
| 6% - Reclamation cost | 5% of dredging cost | | 0 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 | 323,400 |
| Profit ('000) | 0 | 0 | 0 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 | 532,200 |
| Profit sharing ratio (assumption) | | | | | | | | | | | | | | | |
| 80% Counterpart's share | 0 | 0 | 0 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 | 425,760 |
| 20% The corporation's share | 0 | 0 | 0 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 | 106,440 |
| - Permission acquisition cost | 0 | 0 | 0 | 28,000 | 9,333 | 9,333 | 9,333 | 9,333 | 9,333 | 9,333 | 9,333 | 9,333 | 9,333 | 9,333 | 9,333 |
| - Management cost | Internalized in the routine O&M cost of the corporation | | | | | | | | | | | | | | |

**2. Reservoir Fishery Management**

| Constant '04 price | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) Fishery area open to public | | | 3,500 | 4,200 | 5,040 | 6,048 | 7,258 | 8,709 | 10,451 | 12,541 | 15,049 | 18,059 | 21,671 | 26,005 | 31,206 |
| 2) Estimated fish-catch weight | 0.0 | 0.0 | 131.3 | 157.5 | 189.0 | 226.8 | 272.2 | 326.6 | 391.9 | 470.3 | 564.4 | 677.2 | 812.7 | 975.2 | 1,170.2 |
| Growth rate | 20.0% | per annum | | | | | | | | | | | | | |
| Reservoir fishery ground use fee | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 | 2,000 |
| Rate of increase | 0.0% | per every three years | | | | | | | | | | | | | |

| Constant '04 price | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenues ('000) | 0 | 0 | 7,000 | 8,400 | 10,080 | 12,096 | 14,515 | 17,418 | 20,902 | 25,082 | 30,099 | 36,118 | 43,342 | 52,011 | 62,413 |
| - Fishery ground use fee | 0 | 0 | 7,000 | 8,400 | 10,080 | 12,096 | 14,515 | 17,418 | 20,902 | 25,082 | 30,099 | 36,118 | 43,342 | 52,011 | 62,413 |
| Expenditures ('000) | Internalized in the routine O&M cost of the corporation | | | | | | | | | | | | | | |

**3. Land Use Management**

| Constant '04 price | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1) Farmland subject to charge ($m^2$) | | | 109,000 | 114,450 | 120,173 | 126,181 | 132,490 | 139,115 | 146,070 | 153,374 | 161,043 | 169,095 | 177,550 | 186,427 | 195,748 |
| 2) Non-agricultural land ($m^2$) | to be extended in proportion to the above | | | | | | | | | | | | | | |
| Rate of increase | 5.0% | per annum | | | | | | | | | | | | | |
| Land use management charge for 1) | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Land use management charge for 2) | various | | | | | | | | | | | | | | |
| Rate of increase | 0.0% | per every three years | | | | | | | | | | | | | |

| Constant '04 price | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenues ('000) | 0 | 0 | 11,445 | 12,017 | 12,618 | 13,249 | 13,911 | 14,607 | 15,337 | 16,104 | 16,909 | 17,755 | 18,643 | 19,575 | 20,554 |
| - Manag. charge for farmland | 0 | 0 | 7,630 | 8,012 | 8,412 | 8,833 | 9,274 | 9,738 | 10,225 | 10,736 | 11,273 | 11,837 | 12,428 | 13,050 | 13,702 |
| - Manag. charge for non-agri. | 0 | 0 | 3,815 | 4,006 | 4,206 | 4,416 | 4,637 | 4,869 | 5,112 | 5,368 | 5,636 | 5,918 | 6,214 | 6,525 | 6,851 |
| Ratio of non-agri. revenue to farmland | 50.0% | | | | | | | | | | | | | | |
| Expenditures ('000) | Internalized in the routine O&M cost of the corporation | | | | | | | | | | | | | | |

**4. Waste Water Monitoring Service Fee**

| Constant '04 price | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Industrial water demand (m3) | 1,986,768 | 2,081,376 | 2,175,984 | 2,270,592 | 2,396,736 | 2,522,880 | 2,649,024 | 2,775,168 | 2,901,312 | 3,027,456 | 3,185,136 | 3,342,816 | 3,500,496 | 3,689,712 | 6,307,200 |
| Estimated waste water to Jen. R. (m3) | 397,354 | 416,275 | 435,197 | 454,118 | 479,347 | 504,576 | 529,805 | 555,034 | 580,262 | 605,491 | 637,027 | 668,563 | 700,099 | 737,942 | 1,261,440 |
| Unit rate of waste monitoring service fee | 293.2 | 293.2 | 293.2 | 351.8 | 351.8 | 351.8 | 422.1 | 422.1 | 422.1 | 506.6 | 506.6 | 506.6 | 607.9 | 607.9 | 607.9 |
| Revised to increase | 0.0% | every three years | | | | | | | | | | | | | |
| (Fee payment enforcable rate) | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| Revenues ('000) | 58,242 | 61,016 | 76,547 | 95,850 | 101,175 | 124,250 | 156,555 | 164,010 | 171,465 | 214,704 | 258,156 | 270,936 | 340,460 | 358,863 | 613,441 |
| Expenditures ('000) | Internalized in the O&M cost of the corporation | | | | | | | | | | | | | | |

# *Figures*

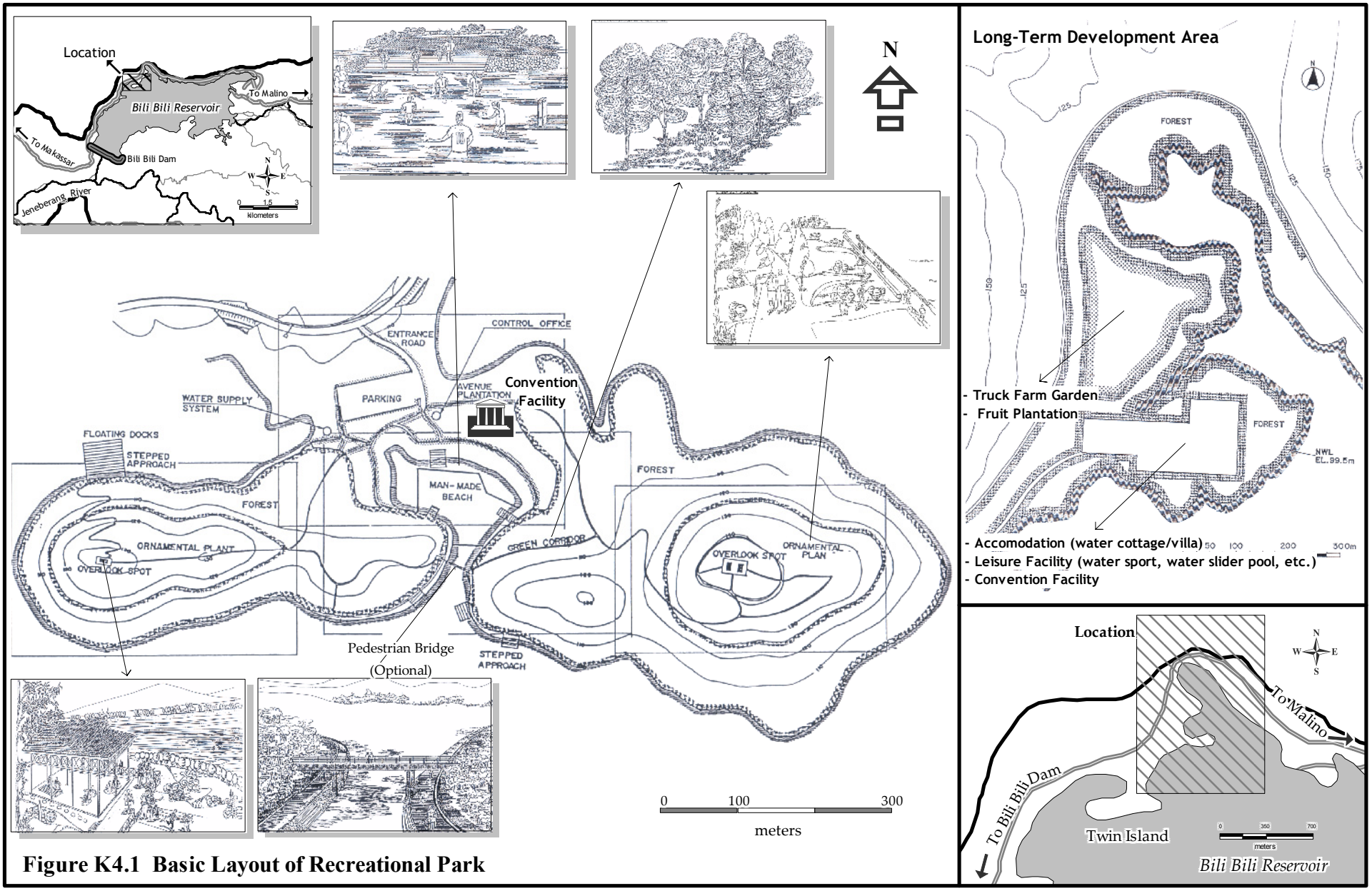



**Figure K4.1 Basic Layout of Recreational Park**

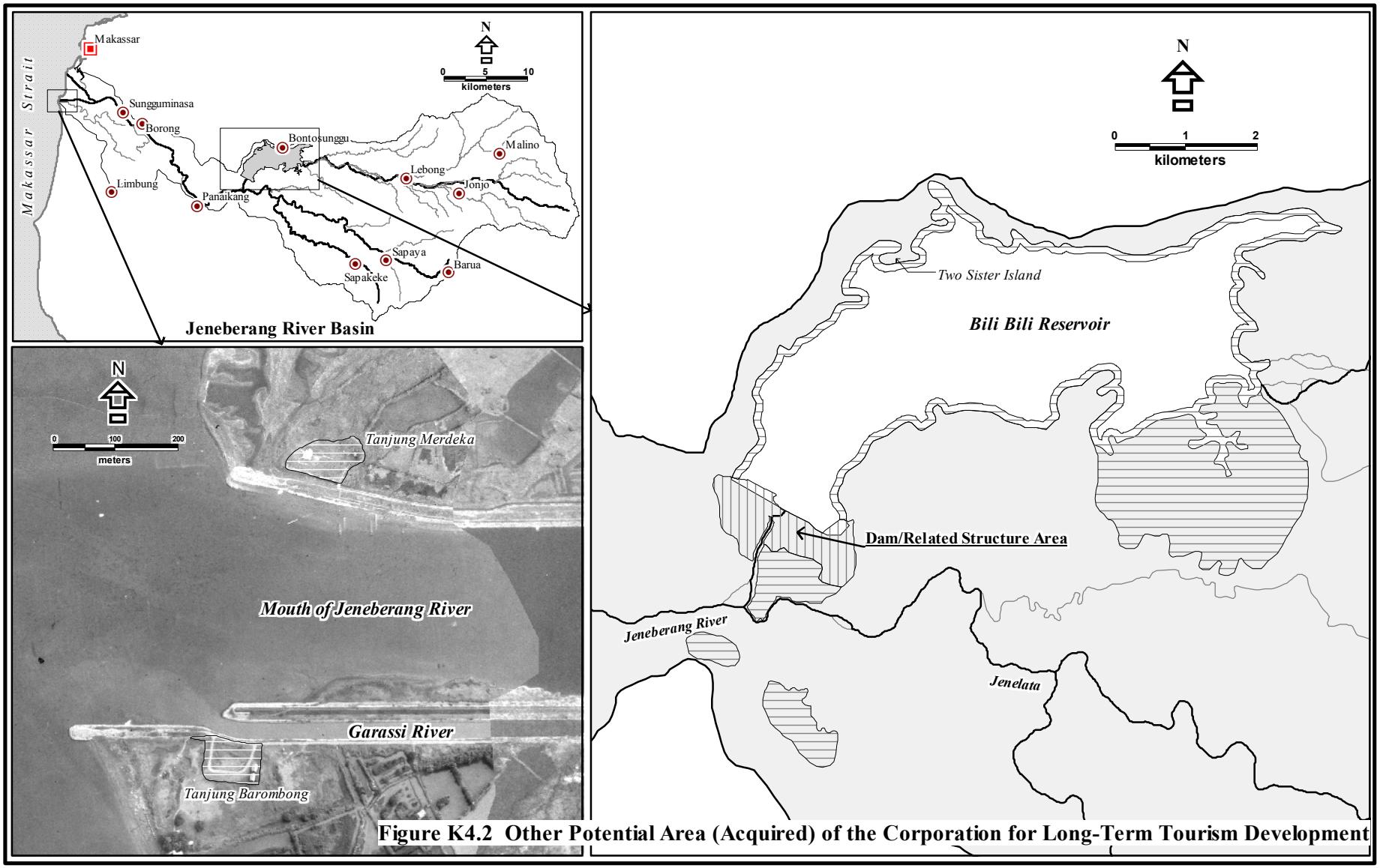



**Figure K4.2 Other Potential Area (Acquired) of the Corporation for Long-Term Tourism Development**