GOVERNMENT OF INDONESIA
MINISTRY OF PUBLIC WORKS

ASIAN DEVELOPMENT BANK

FINAL REPORT

Water Supply and Sanitation Project

PROJECT PREPARATION TECHNICAL ASSISTANCE
TA 4411-INO

VOLUME I: MAIN TEXT

DECEMBER 8, 2005

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ABBREVIATIONS AND GLOSSARY

Abbreviation	English	Indonesian
AB	Clean water	Air Bersih
AIFC	Average Incremental Financial Cost	
AL	Wastewater	Air Limbah
AM	Drinking water	Air Minum
AMDAL	Environmental Impact Analysis	Analysis Menganai Dampak Lingkunan
APBD	Regional government budget for income and expenditure	Anggaran Pendapatan dan Belanja Daerah
APBN	Central government budget for income and expenditure	Anggaran Pendapatan dan Belanja Negara
BAPPENAS	National Development Planning Agency	Badan Perencanaan Pembangunan Nasional
BLN	Central government foreign loan	Bantuan Luar Negri
BMS	Benchmarking System	Sistem Benchmark
BNA	Basic Needs Approach	Pendekatan Kebutuhan Dasar
BOT	Build Operate Transfer	
BPT	Break pressure tank	
CSC	Community Sanitation Centre	
CW	Civil works	Pekerjaan sipil
DAK	Special Allocation of Funds (from Central to Regional Governments)	Dana Alokasi Khusus

Abbreviation	English	Indonesian
DAU	General Allocation of Funds	Dana Alokasi Umum
DBO	Design-Build-Operate	
DGHS	Directorate General of Human Settlements	Direktorat Jenderal Cipta Karya
DGURD	Directorate General of Urban and Rural Development	Direktorat Jenderal Tata Perkotaan dan Tata Perdesaan
DGWR	Directorate General of Water Resources	Direktorat Jenderal Sumber Daya Air
DPRD	Regional Government Parliament	Dewan Perwakilan Rakyat Daerah
DSA	Delineated Service Area	
EA	Executing Agency (DGHS for WSSP)	Instansi Pelaksana
EIRR	Economic Internal Rate of Return	-
EOI	Expression of Interest	Surat Minat
FOPIP	Financial and Operational Performance Improvement Plan	Rencana Peningkatan Kinerja Operasi Keuangan
FORKAMI	Forum for Communication on Management of Water Quality in Indonesia	Forum Komunikasi Air Minum
FORKOT	City Forum	Forum Kota
GOI	Government of the Republic of Indonesia	Pemerintah Indonesia
HH	Household	Rumah tangga
IA	Implementing Agency	Instansi Pelaksana
IDAP	Institutional Development Action Plan	Rencana Kegiatan Pengembangan Kelembagan
IDCB	Institutional Development and Capacity Building	Pengembangan Kelembagaan dan Peningkatkan Kemampuan
IEE	Initial Environmental Examination	
IKK	Sub-District Main Town	Ibu Kota Kecamatan
IPA	Water Treatment Plant	Instalasi Pengelolaan Air
IPLT	Septic Sludge Treatment Plant	Instalasi Pengelolaan Lumpur Tinja
Kampung	Village	Kampung
KepMen	Decision Letter of the Minister	Keputusan Menteri
LGU	Local Government Unit	Dinas
LIDAP	Local Institutional Development Action Plan	Institusi Daerah Pelaksana Pembangunan
LIHH	Low Income Household	Rumah tangga Berbenghasilan Rendah
LSM	Local community organization	Lembaga Swadaya Masyrakyat
MDB	Multi-lateral Development Bank	Multi-lateral Development Bank
MDG	Millenium Development Goal	Sasaran Pembangunan Era Milinium
MOE	Ministry of Environment	Departemen Lingkungan Hidup
MOF	Ministry of Finance	Departemen Keuangan
MOH	Ministry of Health	Departemen Kesehatan
MOHA	Ministry of Home Affairs	Departemen Dalam Negeri (see also DEPDAGRI)
MPW	Ministry of Public Works	Departemen Pekerjaan Umum
NGO	Non-Government Organization	Lembaga Swadaya Masyarakat
NPW	Non-Revenue Water	Tingkat Kehilangan Air
O&M	Operation and Maintenance	Operasi dan Pemiliharan
PADS	Income collected by local government	Pendapatan Asli Daerah
PBB	Land and development tax	Pajak Bumi dan Bangunan
PDAM	Regional Government Water Supply Enterprise	Perusahaan Daerah Air Minum
PEMDA	Regional Government	Pemerintah Daerah
PERDA	Regional Government Decree	Peraturan Daerah
PerMen	Ministerial Decree	Peraturan Menter
PERPAMSI	Association of Indonesian Water Supply Enterprises	Persatuan Perusahaan Air Minum Seluruh Indonesia

Abbreviation	English	Indonesian
PIU	Project Implementation Unit	Unit Pelaksana Proyek
PMU	Project Management Unit	Unit Management Projek
PPMS	Project Performance Monitoring System	Sistem Pemantauan Kinerja Proyek
PPN	Value added tax	Pajak Pertambahan Nilai
PPTA	Project Preparatory Technical Assistance	Bantuan Teknis Penyiapan Proyek
PSP	Private Sector Participation	Partisipasi Sektor Swasta
RG	Regional Government	Pemerintah Daerah
RIAP	Revenue Improvement Action Plan	Rencana Tindak Peningkatan Pendapatan
RUTRK	Town Plan	Rencana Umum Tata Ruang Kota
SANIMAS	Sanitation by Communities	Sanitasi Masyarakat
SSC	School Sanitation Centre	
SCSS	Simplified Community Sewerage System	
SL	Water supply house direct connection	Sambungan Langsung
SLA	Subsidiary Loan Agreement	Penerusan Pinjaman
SUSENAS	National Survey on Social and Economy	Survai Sosial dan Ekonomi Nasional
TKPP	Coordination Team for Project Planning and Monitoring	Tim Koordinasi Perencanaan dan Pengawasan
TOR	Terms of Reference	Kerangka Acuan Kerja

I. INTRODUCTION

A. GENERAL

1. This report has been prepared in accordance with the terms of the following Contract for Consulting Services:

TA 4411-INO: Water Supply and Sanitation Project - Contract No.: COCS/05-176

between:

Asian Development Bank and Black and Veatch (SEA) Pte. Ltd., Singapore in association with PT Arkonin Engineering MP, Indonesia; PT Multi Tehniktama Prakarsa, Indonesia; and PT Waseco Tirta, Indonesia

dated:

February 17, 2005

2. The objective of this Final Report is to provide complete details of the work carried out in the preparation of the Water Supply and Sanitation Project for the participating Regional Governments, the Government of Indonesia and the ADB. The report seeks to provide all necessary project information to a level of detail suitable for consideration by the ADB for loan funding.

B. OBJECTIVES OF THE PPTA

3. The goal of this Asian Development Bank Project Preparation Technical Assistance (TA) is to prepare a Water Supply and Sanitation Project (WSSP) with a particular focus on poverty alleviation, sustainability and environment management.

4. The Project will promote sustainable demand-based provision of services in an effective, efficient and equitable manner across the community. The Project will address both water supply and sanitation services together with institutional development and capacity building programs, community behavior change, and stakeholder empowerment and participatory activities.

5. The objective of the WSSP is to respond to the water supply and sanitation needs of selected urban communities, including low income households, by:

- optimizing existing assets,
- expanding coverage,
- improving governance, and
- building the capacity of local institutions.

6. This objective will be achieved through:

- development of a strong commitment to sector reform leading to good governance at the Regional Government level.
- assisting Regional Governments to better manage and make full use of existing facilities,
- improving service to low-income communities,
- development and implementation of well-defined and sustainable investments for water supply and sanitation which address local needs,
- assisting local agencies with project preparation and implementation, and
- improving local fiscal capacity, including assistance, where necessary, with restructuring arrears in debt service.

7. Specifically the TA has assisted the Government of Indonesia to:

- develop the proposed water supply and sanitation project (WSSP) to a level of detail suitable for consideration by the Asian Development Bank (ADB) for funding,
- prepare subproject appraisal reports (SPARs) for 13 PDAMs and Regional Governments (RGs), and
- prepare institutional development and capacity building programs addressing sector reform and governance.

8. The Consultant has provided services following a bottom-up, consultative pro-active and demand-based approach in a timely manner to support ADB processing requirements.

II. PROJECT RATIONALE AND DESCRIPTION

A. PROJECT RATIONALE

1. GENERAL

9. Indonesia comprises a population of approximately 220 million people, with 100 million living in urban areas. By 2015[1], the population will have increased to about 250 million, and the share of the urban population is expected to approach 60%, with more than 140 million living in urban areas. The increase in urban dwellers in the coming ten years is therefore expected to be around 40 million persons.

10. In many parts of Indonesia, scarce water resources must be allocated for both urban and, the more predominant, agricultural use, with water availability for many cities already becoming a serious issue. The quality of these resources has already deteriorated to unacceptably poor levels in many locations due to municipal and industrial wastewater and degradation within the catchment areas.

11. As with most Asian countries, urbanization is driving Indonesia's economic growth, but this is being constrained by the lack of infrastructure investment, including in the water and sanitation sector. In these rapidly expanding urban areas, the supply of water and provision of sanitation services is a high priority, especially the provision of access to suitable services for low-income communities. Improved access to safe water and basic sanitation, by halving (by 2005) the proportion of people without sustainable access to safe water and basic sanitation, is a key aspect of meeting the Millennium Development Goal (MGD) Goal N0.7 - Ensuring Environmental Sustainability[2].

Table 1: Summary of Water and Sanitation Conditions in Selected Countries[3]

Country	HDI Rank	Population with Access to Improved Sanitation 2002 (1)	Population with Sustainable Access to an Improved Water Source 2002 (2)
Thailand	73	99	85
Philippines	84	73	85
China	85	44	77
Vietnam	108	41	73
Indonesia	110	52	78
India	127	30	86
Cambodia	130	16	34
Pakistan	135	54	90

Notes:
1. Defined as the percentage of population with access to adequate excreta disposal facilities, such as a connection to a sewer or septic tank system, a pour-flush latrine, a simple pit latrine or a ventilated improved pit latrine. An excreta disposal system is considered adequate if it is private or shared (but not public) and if it can effectively prevent human, animal and insect contact with excreta.
2. Defined as the percentage of population with reasonable access to any of the following types of water supply for drinking: household connections, public standpipes, boreholes, protected dug wells, protected springs and rainwater collection. Reasonable access is defined as the availability of at least 20 liters a person per day from a source within 1 kilometer of the user's dwelling.

12. Urban piped water supplies are generally provided by about 300 regional water enterprises (PDAMs), while off-site sanitation services are usually provided by the regional government (RG) administration through either the city cleaning and parks agency or the public works agency.

[1] Human Development Report 2005, UNDP.
[2] Goal 7 - Ensure Environmental Sustainability, Target 10 - Halve, by 2015, the portion of people without sustainable access to safe drinking water and basic sanitation.
[3] Human Development Report 2005, UNDP.

13. The economic crisis of 1997 affected particularly the poorer segments of society and since 1998 the Government has introduced many reforms with emphasis on good governance, transparency, and accountability. However, quite clearly, the WSS sector in Indonesia is in a very weak state, a condition that existed before the economic crisis in 1997/98 and has worsened since. Partly due to the parlous financial condition of many regional water enterprises (PDAMs), but also the evolving legal framework and uncertainties in the early stages of decentralization, there has been no significant investment in the sector for at least five years. Inadequate service delivery in the sector in recent years continues to give significant impacts on human development outcomes, especially with regard to public health and the general urban amenity. In several locations PDAMs are reporting sharply higher water losses, indicative of rapidly deteriorating systems due to sustained lack of maintenance.

14. In general it appears that Indonesia is lagging behind many other countries in the region in the provision and management of basic services. The situation in the water supply and particularly the sanitation sector is considered to be of more serious concern than in most other sectors.

15. Regional autonomy through decentralization was accepted as an important pillar of progress in a nation with such geographical and ethnic diversity. Although initial actions by some regions may have given rise to a more cautionary approach, there is no doubt that the improvement of quality of life for the urban poor and the large majority living in rural agricultural areas needs a much greater sense of ownership and participation by the autonomous regions.

16. While laws on decentralization, enacted in 1999 and revised in 2003, enabled numerous initiatives for addressing the concerns of the sector, serious concerns about some main issues remain including: (i) the low coverage and efficiency of the water supply sector, evidenced by the high number of small water enterprises, and (ii) the acute problems of poor sanitation in urban areas caused by poor management of wastewater and severe deficiencies in solid waste management practices.

17. Under regional autonomy, RGs are responsible for ensuring that sanitation services are provided within their region, similar to water supply and other basic infrastructure. While water supply is provided by PDAMs, which are enterprises owned by the RGs, responsibility for operation and management for sanitation in most cases rests with technical units within the RG administration. Because of limited budget allocation sanitation systems are often in poor state and lack maintenance. In many cases, RGs do not fully appreciate the magnitude of the sanitation sector problems, and the types of solutions available to effectively and efficiently address the serious environmental problems caused by the millions of households discharging septic tank effluent and untreated grey water into the urban drainage systems.

2. WATER SUPPLY

18. Piped water supply is estimated to cover only about 39% of the urban population, with the majority served through self-provision on a household and community-level or alternative small-scale water providers. In addition, many households operate with a dual supply, including both PDAM and groundwater abstraction systems, due to the lack of reliability of the PDAM service. At present, PDAMs supply water through just over 6 million connections nationwide. In order to meet the related Millennium Development Goal (MDG), the total number of connections by the year 2015 would need to increase to at least 15 million, assuming 40% self-provision.

19. Of the 300 PDAMs more than half have less than 10,000 connections. In addition, many regencies have attached to their water company small, unsustainable (so-called IKK) systems which were poorly designed. Since many of these systems are now obsolete, except some gravity supply systems, the level of service provided under previous projects funded nationally, and/or with donor funds, will have declined. Such small enterprises find it virtually impossible to reach economically viable levels of operation.

20. The imperative is therefore sustainable expansion of piped water supplies. The key problem is one of coverage, before any other. Poor coverage is due to increasing difficulty in obtaining satisfactory water sources, low labor productivity, high water losses, poor

management and ineffectual governance. These have all contributed to a vicious cycle of poorer service, lower willingness to pay and consequent ever lower performance. Poor governance manifests itself in low transparency in how the water enterprise (PDAMs) resources are being used while low accountability reinforces stakeholder perceptions that providing further resources to the PDAM is not the solution. This lack of trust is especially evident in tariffs that are set with little reference to costs.

21. The urban population has increased in parallel with a period of deteriorating service provision such that, in 2005, one can assume that the average percentage of population served by public systems may be over stated.

22. Many PDAM water supply systems have suffered from lack of maintenance, and service quality has fallen due to a range of factors. In many instances, facilities constructed under donor funded projects are not operating effectively. The lack of system maintenance and institutional commitment has resulted in consistently high levels of non-revenue water (NRW). In addition, more than 60% of PDAMs have outstanding loans with the Ministry of Finance (MOF), and many of their RGs are also in arrears with loan repayments.

23. In most regions, tariff adjustments have been constrained by RGs so that planned full cost recovery is rarely achieved and often tariff income does not meet the operating costs of a 24 hour supply service. Understandably, however, RGs find it impossible to increase tariffs when standards of service are deteriorating. Many PDAMs do not allow for depreciation costs on fixed assets, and do not generate sufficient funds to finance new investments, with the consequence that system and facility expansions only occur through grant funding or when a donor funded loan facility comes on stream. Most small public utilities are unable to raise the counterpart funds or provide in-kind contributions that are required to participate in an international financial institution funded project.

24. In consequence, where PDAMs are unable to supply water, communities get their water through collective systems, or individuals organize their own facilities at the household level. In many instances, particularly in low-income areas, private water vendors obtain water from PDAMs and or self-suppliers for distributing to households and communities.

25. Management of PDAMs is also influenced by institutional constraints. Structurally, many PDAMs lack managerial autonomy from their owners, the RGs, and policy making, regulation and implementation have most often all been the responsibility of the PDAM, with a resulting negative affect on performance in terms of equitable service provision to the whole community.

26. However the water sector is viewed, the lack of investment is enormous and will have to be met mainly by financing provided through cash generated by PDAMs, RG borrowing capacity, central government, and donor agencies. In addition, some form of private sector participation (PSP) needs to be mobilized; however, this will be difficult in the current operating climate.

27. The required priority actions must urgently address poor management of existing networks, funding constraints of the sector, particularly the persistently low tariff levels, RG borrowing capacity, and the mechanisms for donor funding to the regions in the new era of decentralization. Cost recovery tariffs in particular are essential for the sustainability of the sector, while international loan financing to the sector would serve as an important catalyst for reform.

3. SANITATION

28. The urban sanitation crisis in Indonesia is becoming more critical each year as rapid urban population growth continues and investment in the sector is far below that which is required to even keep pace with development. The sanitation crisis is taking a heavy toll on the health of urban residents, the economy in general and the environment. Many watercourses and streams associated with the larger urban areas function simply as open sewers.

29. Sanitation activities are under-financed and RGs generally consider sanitation to be a relatively low priority. Approximately 75% of existing access to sanitation in urban areas is through on-site sanitation since government policy makes households responsible for the

treatment and disposal of wastewater. Around 50% of wastewater from toilets is passed to septic tanks for treatment. A further 25% is dealt with direct by leaching systems. Septic tanks provide only very limited removal of pollutants – around 33% - yet surveys in the late 1990s indicated that around 50% of effluent from septic tanks was discharging direct to surface drains. A further problem is that around 80% of bathroom, kitchen and laundry wastes are passed direct to surface drains without any form of treatment. Regulations generally require that septic tanks be provided with leaching systems; however, this regulation is not enforced. Septic tank effluent, along with untreated wastewater from kitchens and bathrooms, therefore flows into drainage systems creating costly and severe environmental pollution of urban areas.

30. The sector is controlled by a number of agencies, but the proper disposal of human waste is rare, resulting in severe health and environmental consequences and economic losses. As with water, the number of people with lack of access to adequate sanitation is much higher among the poor.

31. Water borne sewerage systems operate in less than ten cities and serve less than 1.5% of the total urban population. Many of these systems are not operating properly because of lack of ownership of the RGs (most were provided as grant funded facilities on the basis that they were pilot operations) and subsequent lack of cost recovery contributing to a less than optimal level of maintenance. In some cases inappropriate project design and poor construction standards have contributed to the problem. The level of engineering expertise in sewerage design and construction is relatively low compared with urban water supply.

32. The sanitation sector lacks sustainability, operating conditions are poor, and there is no capacity to raise funds for system expansions. RGs generally have no institutional framework for sanitation, which means there is no budget for sector improvements.

33. In addition to domestic wastewaters, many "cottage industries" producing traditional food (notably tofu), textiles and leather etc. contribute highly to the pollution loads discharged to watercourses that do not have any capacity to absorb untreated wastewater. The results in most low-lying urban districts are severe, and are a public health calamity.

34. On-site sanitation requires external support in the form of regular desludging. Guidelines recommend at least the annual desludging of septic tanks, but on average households remove sludge every 3 to 5 years depending on local conditions (e.g. high groundwater table). Desludging is not done to maintain treatment efficiency – households normally call tanker fleet operators (public or private) when there are blockages or odor problems. In many cases when tanks become full of sludge they are simply abandoned and a new one built nearby. Desludging is done by publicly or privately operated sludge tankers that abstract septage from individual and communal septic tanks and then discharge the concentrated polluting waste either illegally to watercourses, or to septage treatment plants operated usually by local solid waste management departments. The treatment plants generally operate at a loss and without achieving prescribed effluent standards.

35. Another problem is the enforcement of standards in rapidly expanding urban developments. Without proper standards of construction, a backlog is in the process of being created as developers generally provide inadequate sanitation facilities in new housing estates. On-site systems are the common form of sanitation facility with direct discharge connections from the septic tanks to the street drainage systems. Most on-site systems are not appropriately designed or maintained. As a consequence, partially treated wastewater is simply discharged into open drains and water bodies that are already polluted from indiscriminate solid waste disposal and other liquid wastes. It is only the fact that drains must accommodate storm water flows that they are able to act as open sewers in many respects. The urban pollution problem then reaches a peak, especially at the start of each rainy season, when all this waste material is carried to natural watercourses and to the sea.

36. The institutional framework for sanitation is inadequate, and existing policies are unclear. Urgent action is needed to develop a national sanitation policy, which is supported by donor agencies. Compared with other countries in the region, such as Thailand and the Philippines, Indonesia has a low percentage of urban households with adequate sanitation. Apart from some cities with sewer systems in part of their urban area and number of IPLT units, there has been no significant investment in citywide sanitation infrastructure during the last 20 years.

37. In respect of sanitation, main responsibilities on central government level are with the Ministry of Health (MOH), Ministry of Environment (MOE), and the Ministry of Public Works (MPW). Within MPW, the Directorate General of Human Settlements (DGHS) provides essential technical support and guidance to RGs for the design and implementation of sanitation facilities, and is responsible for sanitation projects funded by the central government. Legislative functions affecting sanitation services are exercised by central government, although responsibilities are dispersed among ministries.

38. Particularly important at this stage is to ensure that (i) authority and accountabilities are clearly allocated (ii) that information about the benefits (and costs) of proper and improved sanitation are disseminated among key stakeholders and (iii) that the backlog of areas with unsuitable sanitation is no allowed to grow further.

B. KEY STAKEHOLDERS

39. Key stakeholders at the local level are:

- Regional Governments (RGs) – especially the Head of Region
- PDAMs
- Sanitation service providers
- The Local Council (DPRD)
- Civil Society
- The community to be served by the investments made under the project.

40. Other stakeholders include:

- KMK35/2003 Appraisal Team
- The Ministry of Finance
- The National Development Planning Board (BAPPENAS) – Directorate for Urban Affairs
- The Ministry of Public Works, and especially the Directorate General of Urban and Rural Development;
- The Ministry of Home Affairs – mainly the Directorate General for Regional Finances
- The Ministry of Health
- The Ministry of the Environment
- Provincial Government (probably as represented by BAPPEDA)
- The National Development Audit Agency (BPKP);
- The Association of Water Companies (PERPAMSI); and
- The Asian Development Bank (ADB)

41. An important factor in success of the Project is (i) identifying the roles and contribution of and responding to the needs of these stakeholders, and (ii) understanding their power and interests in relation to the project's objectives. The project's objectives are summarized as being to increase the coverage of water and sanitation services to all communities in the participating Regional Governments.

1. LOCAL STAKEHOLDERS

REGIONAL GOVERNMENT

42. Regional Government, as represented by the head of the region, Bupati or Walikota, is likely to have the biggest stake in a successful outcome to the project. The Bupati / Walikota will be a newly elected official in several of the Project locations by the end of 2005. These

include Kabupatens Serang, Maros, Barru and Bandung. The newly elected officials will be seeking to improve the conditions in their constituency to maintain the support that put them in office. On the other hand, they will have to achieve that improvement while keeping a diverse range of other stakeholders satisfied, and keeping RG debt to a minimum. For those heads of regions which are not subject to local elections, their constituency is still the local council (DPRD). In either case, approval for borrowing is needed from the elected representatives of the community, so it might be argued that the real power to influence the outcome rests with the Chairman of the DPRD. In reality, the power of approval probably rests with a coalition that includes the head of region. The Project detail will be of interest to this coalition, which is likely to be different in each RG. They have both a high interest and high power – a characterization of this group might be as "players".

43. RGs are not entirely monolithic – they also contain a number of other stakeholders. The Regional Government Secretary (Sekda) is important because of his control over the budget and the head of BAPPEDA because of both technical knowledge and advisory position in relation to Head of region. Others not to be forgotten include the Head of the (supposedly autonomous) Local Finances Board (Badan Keuangan dan Kekayan Daerah) and the Local Public Service Board (Badan Kepegawain Daerah).

PDAM

44. With respect to the PDAM, the President Director is the key stakeholder. His reputation is at stake, and often his job, if there is a problem in the water enterprise that impacts on the Head of Region. While good governance considerations should make the Board of Supervisors (Badan Pengawas) an important player, most BOS are so ineffective that they are not important. However, they should be a key stakeholder, if for no other reason than to provide a break on the relationship between the President Director and Head of region. Certainly, the President Director should have a high interest in improving the performance of the PDAM, but the manner of his appointment and his relationship to the Head of region is likely to determine whether he has power to influence strategic decisions such as whether to participate in the Project. A characterization as an "actor" rather than a "player" – high interest but low power - would not be uncommon.

SANITATION AGENCY(S)

45. Sanitation activities are spread between a number of agencies in a RG – for example management of the IPLT may be with the Solid Waste Management Agency (Dinas Kebersihan) while responsibility for on-site sanitation such as septic tank construction may lay with the Building Control Agency (Dinas Tata Kota) or even the Development Planning Board (BAPPEDA). Probably the only certainty is that responsibilities are wide spread and locating one agency that truly has a stake in improving sanitation is difficult. This is the fundamental problem with sanitation – there is no single major institutional stakeholder whose interest and power can be influenced to promote the sanitation agenda. This condition strongly suggests the need to form a stakeholder committee to provide a focal point for the various actors, and leadership.

46. Health and environmental professionals are one group who should not be forgotten. The Health Service (Dinas Kesehatan) will have an interest in sanitation matters in the household, while the Environmental Agency (Dinas Lingkungan Hidup) may be a useful organization to champion sanitation programs bridging the household and the end treatment facilities management by the "engineering agencies", such a Public Works.

THE COUNCIL (DPRD)

47. The leaders of this body are now key players in local projects. Few heads of regions would be brave enough to promote a project without having cleared it some way with the DPRD. Key members of the DPRD are generally both interested and have the power to determine allocation of funds to water and sanitation, loan rescheduling and the final say over tariff increases. They are "players" in the stakeholder typology.

48. In some RGs the Chairman of the DPRD may be happy to allow the Chairman of Commissions (typically "C" for finance or "D" for infrastructure) to deal with the specifics of

proposals. The common problem of investments being biased to locations is not obvious because the system of representation is not yet geographically based. However, an undue interest of councilors in detailed project implementation matters needs checking.

49. As players, appropriate members of the DPRD should be involved as much as possible in project workshops, consultation and participatory design activities, because the more they understand the issues faced by the service-providing agencies, the more likely they will support its objectives.

CIVIL SOCIETY

50. Non-government organizations are likely to be active in most of the RGs, no matter how much the local government personnel deny their existence. There may even be a water-user group, or a group concerned with promoting better services from government. If no others, the consumers association (YKLI) is likely to have a representative. The smaller the RGs, the less likely there will be effective pressure groups of this kind.

51. Unfortunately, this stakeholder group generally has little power to influence decisions as to how services are distributed throughout the community. High interest but low power characterizes them as "subjects", just as is most of the community at large.

52. Civil society can gain more power through representation on stakeholder groups, and ultimately can act to ensure a more equitable distribution of the benefits of the project. Experience shows however that their effectiveness often derives more from the decision-making arrangements of the stakeholder committee on which they sit than through some outside collective influence.

2. OTHER STAKEHOLDERS

KMK 35 APPRAISAL TEAM

53. Article 7(1) of KMK 35/2003 requires MoF and BAPPENAS to form an appraisal team to assess Project proposals. This team is known locally as Tim Penilai. This team will be a very key player in the loan preparation process. Although KMK35 is currently being re-written, it is understood that the Tim Penilai will remain as part of the project appraisal process.

MINISTRY OF FINANCE

54. The MoF ultimately must approve ADB lending to RGs (Article 7(6) of KMK 35/2003). The MoF interest is to ensure credit is allocated effectively and being front-line managers of the nation's finances, to minimize borrowing. They do not wish to set an unhealthy precedent by forgiving debt arrears to an individual RG. Law 17/2003 providing the framework for management of state finances has a performance orientation (as opposed to the old focus on inputs), so it can be expected that project arrangements couched in terms of results (for example more use of the PPMS) may be encouraged. BAPPENAS membership of the Appraisal Team indicates the MoF desire appraisal criteria to cover technical issues as well as financial. The MoF's interest and power make them key players whose interests are not to be forgotten at all.

BAPPENAS (NATIONAL DEVELOPMENT PLANNING AGENCY)

55. Under the new national spatial planning law (UU 19/2004). BAPPENAS have the prime responsibility of ensuring project proposals from the regions comply with existing development plans. Article 5 b and c of KMK 35/2003 indicate that compliance with regional plans is a consideration in approval of loan proposals. It would be wise to ensure any proposals under the Project describe the existence of development plans in the concerned region and how proposals comply. Given the relatively small size of sub-projects under the WSSP, it is expected that there will be no major conflicts with regional development plans. On these ground BAPPENAS, as a stakeholder, may be classed as an "actor" – powerful, but with less interest than some others.

MINISTRY OF PUBLIC WORKS

56. The Ministry of Public Works and especially the Directorate General of Human Settlements is a key stakeholder. DGHS have the responsibility at national level for facilitating provision of water and sanitation throughout the country. The water and sanitation sector is administered mainly by the Ministry under the water resources law, UU 7/ 2004, and the Government Regulation PP16/2005 coming mainly out of Article 40 of that law. The Ministry is not directly responsible for provision of services in urban areas in most circumstances, but oversees development of technical standards, contribute to policy development and assist with project preparation and implementation involving bilateral and multi-lateral development agencies. In recent times they have become more involved with developing regulatory arrangements, although the Ministry of Home Affairs ultimately are responsible for promoting institutional improvements in local governments. Coordination of technical activities and institutional reforms are important for improving performance, and this is perhaps one of the challenges for the Ministry.

57. DGHS's interest lays in ensuring that proposed technical solutions adopted by PDAMs and RG sanitation agencies are cost effective, that project implementation arrangements support this objective, and that institutional development and capacity-building activities are synergetic with the technical program. Their power derives from being the acknowledged administrator of Law 7/2004 and the "gate-keeper" of the majority of central government funds for the sector. This gives the Ministry high power, but with interest being diluted by a diverse range of projects and duties, a role as an "actor" may be an appropriate classification

THE MINISTRY OF HOME AFFAIRS (MOHA)

58. The Ministry "owns" local government in the sense of being in the line of command down from the President, as opposed to other Ministries being "staff" or "support" agencies. Responsibility for water and sanitation matters is dispersed within the Ministry. For this project it may be that the financial and reform aspects of local government owned enterprises may make the Directorate General for Regional Finances the key stakeholder.

59. The DG has an interest in ensuring that local financial management is improved and have inherited the responsibility of redrafting Law 5/1962 on regional government-owned enterprises under which PDAMs are constituted. The draft law is central to establishing the legal framework in which good corporate governance can develop in PDAMs. The Ministry has a high interest in the institutional development and capacity building aspects of the Project, although they can sometimes not be placed mainstream because the main investment is in physical components. Their ability to influence RG affairs nevertheless is strong, indicating care is needed to prevent them from being "bystanders" in any project in which institutional reform is targeted.

THE NATIONAL DEVELOPMENT AUDIT AGENCY (BPKP)

60. This audit agency perhaps has a similar agenda to that of the MoHA. They now audit most PDAMs annually, their reports now often include a section on "good governance" and they are promoting both strategic management and performance management within PDAMs. Some early consultation with them would be beneficial, especially in relation to (i) criteria being applied to assess the quality of corporate governance (ii) the preferred corporate planning model and (iii) audit arrangements during project implementation.

THE ASSOCIATION OF INDONESIAN WATER COMPANIES (PERPAMSI)

61. There may be only one or two of the 306 PDAMs in the country which are not members of this association. The services it provides to its members include (i) advocacy on matters impinging on PDAM interests (for example debt re-scheduling) (ii) operation of the PDAM employee pension scheme (iii) debt collection from central agencies owing money to PDAMs (iv) provision of a range of capacity building programs to its members through its "Training Foundation" (v) operation of the PERPAMSI Benchmarking System (vi) serving as a networking hub and (vii) disseminator of information through various means, including publication of a monthly magazine concerning matters primarily of interest to PDAMs. In the case of WSSP, they can play a role (i) helping the RGs negotiate debt rescheduling, so long

as this does not conflict with a larger agenda, which may be to gain debt relief; (ii) providing their Benchmarking System services on an ongoing basis to participating PDAMs; and (iii) contributing to particular capacity-building programs that will be established under the Project and helping disseminate the lessons to its other members, particularly through its Provincial branches in the Provinces where the WSSP is active. PERPAMSI's interest in the Project is likely to be focused on the institutional and capacity-building aspects, because they are actively advocating "corporatization" of PDAMs, that is, shifting the legal status from an organization set-up under the administrative law to a legal entity constituted under Indonesia commercial law (Law 1 / 1995). They see this reform (probably rightly so in many cases of larger PDAMs) as being essential to improving the autonomy of PDAMs, and so performance. They will also have a stake in accreditation and open recruitment objectives of the WSSP. Any power that PERPAMSI has to influence outcomes of projects such as WSSP probably comes from their credibility among its members, and somewhat like the MPW, the "gatekeeper" role on some projects.

PROVINCIAL GOVERNMENT

62. The revised decentralization laws (32 and 33 of 2004) have given the Province a greater role in supervision of RG activities. Combine this with their assigned function of managing services that have an inter-jurisdictional nature, and some ability to contribute financing, may combine to give the Provinces more power than first imagined. The key person is probably the head of BAPPEDA, acting in the governor's interest.

MINISTRY OF HEALTH

63. The Ministry of Health are a stakeholder in that they are involved in several areas of urban living which relate to water supply and sanitation. The Ministry, through their local offices at the RG level, monitors urban water supply quality as well as advising on acceptable forms of on-site sanitation. This monitoring of water includes both public and private supply systems. They also play the leading role in public education programs in both health and hygiene.

MINISTRY OF THE ENVIRONMENT

64. The Ministry of the Environment has the responsibility to see that projects are implemented in an environmentally friendly manner. Their involvement is, however, limited to defining which projects require a full environmental impact analysis (AMDAL) and which do not. The Ministry will therefore review AMDAL documents and process their approval; however they currently have insufficient resources to provide a "first hand" involvement in monitoring projects during their implementation. The local environmental office within the RG is known as BAPDELDA. This office will take an active role in monitoring Project compliance with environmental legislation.

THE ASIAN DEVELOPMENT BANK (ADB)

65. With its mission to reduce poverty, and being the lender of the majority of funds for the proposed Project, the ADB are a key stakeholder. ADB funding of urban water supply and sanitation investments has largely ceased since the on-set of the economic crisis in 1997, with a number of attempts to re-start development in the sector having been unsuccessful since then. The move of water supply and sanitation affairs into the Social Sectors Division (SESS) of the ADB in 2002 is indicative of an increased focus on the social impacts of projects as proposed. Community involvement, institutional development and capacity-building, gender equity, health and environmental concerns should now receive more attention than projects prepared under past IUIDP projects of the Government. The ADB will have a particular interest in completing a successful preparation of the WSSP because it is a "pioneering" project in a number of ways. It will be the first under the new decentralization arrangements in Indonesia, the first to make use of new on-lending arrangements, the first for the sector from the SESS and a leader in integrating institutional and social arrangements into technical solutions to the provision of water and sanitation services. The power of these interests through control of the financial terms of the proposed loan is large, making the ADB a true "player" in stakeholder typology.


Pilipina
Malaysia
SOUTH CINA SEA
NORTH PACIFIC OCEAN
Kab. Tapanuli Tengah
Kot. Palopo
Kab. Bogor
Kab. Barru
Kab. Maros
JAVA SEA
BANDA SEA
ARAFURU SEA
Kab Jeneponto
INDIAN OCEAN
TIMOR SEA
Kab. Serang
Kab. Bandung

C. BRIEF DESCRIPTION OF SUB PROJECTS

1. LOCATIONS

66. The Project is currently proposed to develop water supply and sanitation services in four different Provinces with eight Regional Governments. The project preparation work evaluated proposals from fifteen different RGs as listed in the following table and illustrated in the attached Figure 1.

Table 2: Sub-Project Locations

Province	Regional Government	Population
Locations ready for participation in WSSP		
North Sumatra	Kab Tapanuli Tengah	272,000
South Sulawesi	Kab Jeneponto	318,000
South Sulawesi	Kot Palopo	150,000
West Java	Kab Bandung	4,135,000
Sub Total		4,875,000
Locations expected to confirm participation in WSSP		
Banten	Kab Serang	748,000
South Sulawesi	Kab Barru	150,000
South Sulawesi	Kab Maros	271,000
West Java	Kab Bogor	2,572,000
Sub Total		3,741,000
Locations declining participation in WSSP		
Bangka Belitung	Kot. Pangkal Pinang	135,000
Central Java	Kab Pemalang	1,069,000
Central Java	Kot Semarang	1,322,000
North Sumatra	Kab Simalungun	808,000
North Sumatra	Kab Tapanuli Utara	255,000
South Sulawesi	Kab Sidenreng Rappang	300,000
West Java	Kot Banjar	175,000
Sub Total		4,064,000
Total		12,680,000

67. The Consultant has made evaluations of projects in each of the above locations, however, at the time of preparation of the Final Report, Kota Pangkal Pinang, Kabupaten Pemalang, Kota Semarang, Kabupaten Simalungun, Kabupaten Sidenreng Rappang and Kota Banjar have signified that they do not wish to proceed with their participation in the WSSP for the present.

68. In addition to the above mentioned and listed locations, the Consultant considered requests for inclusion in WSSP from the following RGs:

- Bau Bau
- Bontang
- Ende
- Enrekang
- Gowa
- Lombok Timur
- Lubuk Linggau
- Mojokerto
- Muara Bungo
- Pinrang

- Poso
- Sampang
- Sibolga
- Toli Toli
- Wajo

69. The process was such that locations were selected based on initially viewing the locations by Province. The key criteria used in reviewing the medium list of locations were therefore the geographic focus, commitment to reform, a preliminary assessment of the feasibility, an assessment of the suitability of the project for ADB funding assistance and financial considerations. The primary financial consideration taken into account was the PDAM and PEMDA performance on current loans along with their current loan liability.

70. The following table provides key data on the scope of water supply expansion Sub-Projects currently proposed for inclusion in the WSSP.

Table 3: Scope of Project Water Supply System Expansions in WSSP

No	Regional Government	Production capacity (L/sec)		WS House Connections		Expansion
		Existing	Proposed Expansion	Existing	Additional 2006-2010	%
1	Kab Serang	439	240	25,835	22,182	86%
2	Kab Tapanuli Tengah	49	100	2,398	5,995	250%
3	Kab Barru	90	50	4,776	7,349	154%
4	Kab Jeneponto	50	75	4,625	8,816	191%
5	Kab Maros	90	150	5,700	12,791	224%
6	Kot Palopo	150	200	11,958	7,028	59%
7	Kab Bandung	700	500	46,204	32,409	70%
8	Kab Bogor	2,039	380	91,285	27,258	30%
	Totals	3,607	1,745	192,781	123,828	64%

71. An item of significance is the quite considerable expansion of systems compared with the existing service coverage. The average expansions in the five year period of the Project will more than double the size of existing systems. Such a rate of expansion will require extraordinary assistance from the Project, particularly with regard to the addition of new connections and capacity building for the PDAMs.

2. WATER SUPPLY

KABUPATEN SERANG

72. The Sub-Project at Serang includes a 200 l/sec WTP, a 4,000 m3 reservoir, 6.0 km of transmission pipe, rehabilitation and construction of 172 km distribution pipe and 17,800 house connections, within the Project period.

73. Costs Including Contingencies. Investment costs are Rp 121 billion, 13% of the present WSSP water total. Unit investment costs per household are slightly below average. AIFC costs are slightly higher than average, however.

KABUPATEN TAPANULI TENGAH

74. The Sub-Project at Pandan includes a water intake, a 100 l/sec WTP, a 1,000 m3 reservoir, rehabilitation/replacement of 2 km of transmission/distribution pipe, 73 km of distribution pipe and 6,000 house connections.

75. Costs Including Contingencies. Investment costs are Rp 44 billion, 5% of the present WSSP water total. Unit investment costs per household are about average. AIFC costs are below average, however.

KABUPATEN BARRU

76. The Sub-Project at Barru includes a 100 l/sec WTP, a 650 m3 reservoir, 1 km of transmission pipe, 87 km of distribution pipe and 7,300 house connections during the Project period.

77. Costs Including Contingencies. Investment costs are Rp 34 billion, 4% of the present WSSP water total. Unit investment costs per household are below average. AIFC costs are above average, however.

KABUPATEN JENEPONTO

78. The Sub-Project at Jeneponto includes a 75 l/sec WTP, a 500 m3 reservoir, 10 km of transmission pipe, 105 km of distribution pipe and 8,800 house connections during the period of the Project.

79. Costs Including Contingencies. Investment costs are Rp 42 billion, 5% of the present WSSP water total. Unit investment costs per household and AIFC costs per m3 sold are below average.

KABUPATEN MAROS

80. The Sub-Project at Maros includes a 150 l/sec WTP, a 5,000 m3 reservoir, 20 km of transmission pipe, 157 km of distribution pipe and 12,800 house connections.

81. Costs Including Contingencies. Investment costs are Rp 68 billion, 7% of the present WSSP water total. Unit investment costs per household costs are below average. AIFC costs per m3 sold are slightly above average.

KOTA PALOPO

82. The Sub-Project at Palopo includes a 200 l/sec WTP, a 2,000 m3 reservoir, 15 km of transmission pipe, 51 km of distribution pipe and 7,000 house connections.

83. Costs Including Contingencies. Investment costs are Rp 96 billion, 10% of the present WSSP water total. Unit investment costs per household costs are above average. AIFC costs per m3 sold are also above average.

KABUPATEN BANDUNG

84. The Sub-Project includes a 600 l/sec intake and a 500 l/sec WTP. There would be a 4 km raw water and a 58 km treated water transmission pipe. The distribution pipe would be 361 km. 3,790 house meters would be replaced and 32,000 house connections constructed within the Project period.

85. Costs Including Contingencies. Investment costs are Rp 240 billion, 26% of the present WSSP water total. Unit investment costs per household are at the average and AIFC costs slightly below average.

KABUPATEN BOGOR

86. The Bogor Timur Sub-Project involves land acquisition and 150 l/sec WTP. There would be two additional reservoirs total capacity 3,600 m3, 5 km of transmission pipe, 226 km distribution pipe and 9,900 new house connections.

87. The Bogor Tengah Sub-Project involves rehabilitation of 73 km of transmission pipe, and replacement of 15,000 house meters and two main water meters. Expansion would require land acquisition for a 150 l/sec WTP, an additional 3,000 m3 reservoir, 10 km of transmission pipe, 187 km distribution pipe and 9,900 new house connections.

88. The Bogor Barat Sub-Project involves 70 l/sec spring source development works, 2 break pressure tanks, power supply etc to one Kecamatan. There would be a 40 l/sec transmission pipe connecting two springs, another 2 km transmission pipe, a 710 m3 reservoir and 9,000 additional house connections.

89. Costs Including Contingencies. Investment costs are Rp 270 billion in total, 30% of the present WSSP water total. Costs at Timur are Rp 100 billion, at Tengah Rp 138 billion and at Barat Rp 32 billion. Unit investment costs per household are above average at Timur and Tengah but below average at Barat. AIFCs per m3 reflect those differences.

3. SANITATION

90. The evaluation of requirements concerning sanitation improvements provided the following components:

- Community Sanitation Centres (CSC) 3 no. per RG except 6 no. in RG Metropolitan;
- Simplified Community Sewerage Systems (SCSS) 3 no. per RG except 6 no. in RG Metropolitan;
- School Sanitation Centres (SSC) 20 no. per RG except 40 no. in RG Metropolitan.

91. The cost of a CSC to serve 100 families is some Rp 300 million. An SCSS unit also serves around 100 families and is also priced at Rp 300 million. Toilet facilities in schools are estimated at base cost Rp 15 million per unit.

92. In addition to the above an IPLT is proposed to be constructed in Kabupaten Serang.

4. INSTITUTIONAL AND ORGANIZATIONAL DEVELOPMENT

LOCAL INSTITUTIONAL DEVELOPMENT ACTION PLANS

93. The "sustainability" of investment in physical aspects of water and sanitation infrastructure services is strongly dependent on the institutional arrangements appropriate for the circumstances in the particular local government. Below is a list of the institutional development activities which should be addressed by the end of the Project. The RG itself will also require institutional support. First this must provide the ability to budget and report results to MOF. This is covered by the SIKD system.

WATER SUPPLY

- Mobilize Leadership and Communicate Action Plan
- Clarify the Overall System for Sustainable Service Delivery
- Improve Resource Acquisition and Allocation
- Increase and Improve Means of Service Delivery
- Information Management and Planning
- Increase Accountability
- Improve Legal Certainty and Enforcement
- Upgrade Set of Local Legal Instruments
- Improve Human Resources Development at Sector level

SANITATION

- Clarify the Overall System for Sustainable Service Delivery
- Improve Resource Acquisition and Allocation
- Expand and Improve the Means of Service Delivery
- Information Management and Planning
- Increase Accountability
- Improve Legal Certainty and Enforcement
- Upgrade the Set of Local Legal Instruments / Framework

- Improve Human Resources Capacity at Sector level

FINANCIAL AND OPERATIONAL PERFORMANCE IMPROVEMENT PLANS

94. The performance of the PDAM depends upon factors which are under their control and others which are not. This plan concerns those factors under the control of the directors and personnel. The Plan is based mainly on the project objectives and activities, the results of an organizational audit conducted by survey among PDAM personnel, and the opinions of senior PDAM managers and the consultants. The plan includes:

- Mandatory programs
- Optional programs, and
- Training programs

95. Mandatory actions are performance improvement activities the PDAM must undertake, and include:

- Establishment of an internal Performance Improvement Team (PIT)
- Annual review and update of the Corporate Plan including its indicators and targets
- Annual benchmarking and associated information system improvements
- Implementing annual customer satisfaction surveys
- Establishment of a complaints receipt and processing function
- Implementing routine employee perception surveys
- Implementing a revenue enhancement program
- Implementing a water loss reduction program.

96. In addition it is proposed that the PDAMs seek short-term improvements in their financial performance through the introduction of basic business procedures by means of an immediate action plan. Short term actions focus on the following areas:

- Accounts Receivable
- Meter Exchanges
- Customer Inventory
- Illegal Connections
- Connection Fees

5. PUBLIC HEALTH AND HYGIENE

97. Sanitation and hygiene behavioural change programs will form an import support activity in the WSSP. The program is designed to extend the health improvement impact of the Project investments. The objective of the Program is to extend the health benefits of improved water and sanitation facilities by enhancing community awareness of the linkages between improved facilities, improved sanitation and hygiene behaviour and community health. The activities on public health and hygiene are proposed to include:

- Training set-up for programs
- Schools program
- Community program
- Drainage water quality monitoring

D. ESTIMATED PROJECT COST

98. The current total project value with eight locations included is US$128.7M. This is made up of Water Supply US$66.7M, Sanitation and Health US$5.4M Technical Assistance

US$16.7M, Contingency Sums $19.9M and Interest During Construction US$20.0M. The ADB OCR portion is currently US$80.2M and the ADF Loan US$10.0M. A summary of the estimated project cost is provided in the following table.

Table 4: Estimated Project Cost – US$ Million in Base Prices

Description	Foreign Exchange	Local Currency	Total Cost	%
A. Base Costs (including taxes)				
1. Water Supply	2.8	63.9	66.7	52%
2. Sanitation/Health	0.1	5.3	5.4	4%
3. Technical Assistance	3.0	13.6	16.7	13%
Subtotal (A)	5.8	82.9	88.7	69%
B. Contingencies				
Physical	0.3	5.3	5.6	4%
Price	0.3	13.9	14.3	11%
Subtotal (B)	0.6	19.3	19.9	15%
C. Financing Costs				
IDC, Charges & Fees	11.7	8.4	20.0	16%
Subtotal (C)	11.7	8.4	20.0	16%
Total	**18.2**	**110.5**	**128.7**	**100%**

Notes:
1. The above project cost includes sub-projects in eight locations - Kab Serang, Kab Tapanuli Tengah, Kab Barru, Kab Jeneponto, Kab Maros, Kot Palopo, Kab Bandung and Kab Bogor.
2. Local currency IDC etc is the 5.01% mark-up charged by GOI to sub-borrowers to cover: forex risks, default risk, bank fee and administration fee.

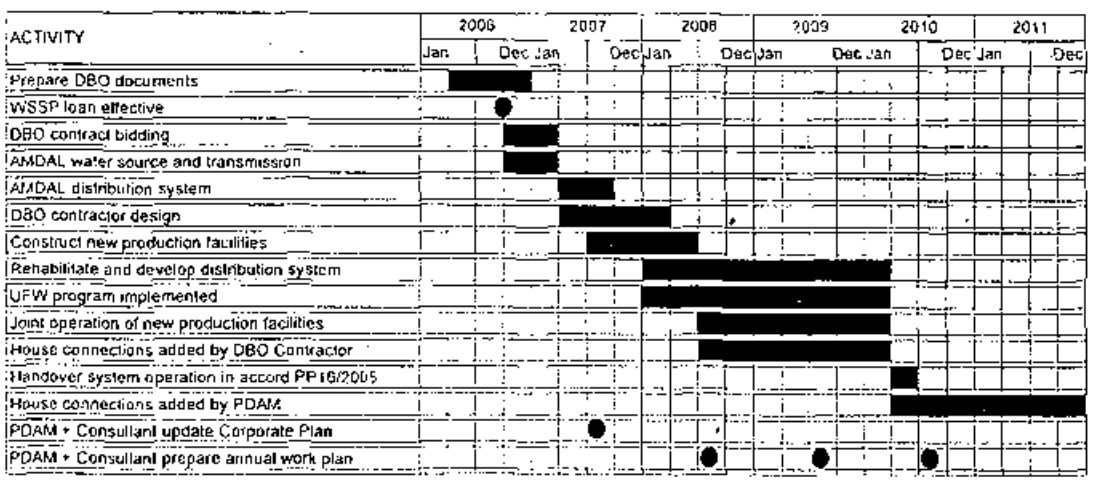
E. IMPLEMENTATION SCHEDULE

1. WATER SUPPLY

99. For development of the water supply works all remaining Project locations have elected to frame contracts on a Design, Build and Operate or DBO basis. A single contract is therefore proposed for each water supply system development. The Contract will need to be bid on an International Competitive Bidding (ICB) basis. This will require pre-qualification of bidders followed by bidding. The current intention is to develop bid documents for these DBO Contracts in parallel with the Loan Processing. This is intended to allow the DBO Contractor to commence work immediately after the Loan becomes effective.

100. In addition, the Bandung project will need an AMDAL to be prepared, before work can commence on the development of the water supply production facilities. This AMDAL should also be prepared in parallel with the Loan Processing.

Figure 2: Implementation Schedule – Water Supply



101. Further AMDALs will be required for the distribution systems, however these may be prepared during the first year of the Project since it is proposed that work on the distribution systems will not commence until the second year.

102. The first year of the Project is expected to focus on development of water sources and construction of water treatment plants. Once the treatment plant is operational it will be commissioned and run jointly by the DBO Contractor and the PDAM. This period of joint operation is proposed to proceed for two years. During this period the following activities will be addressed:

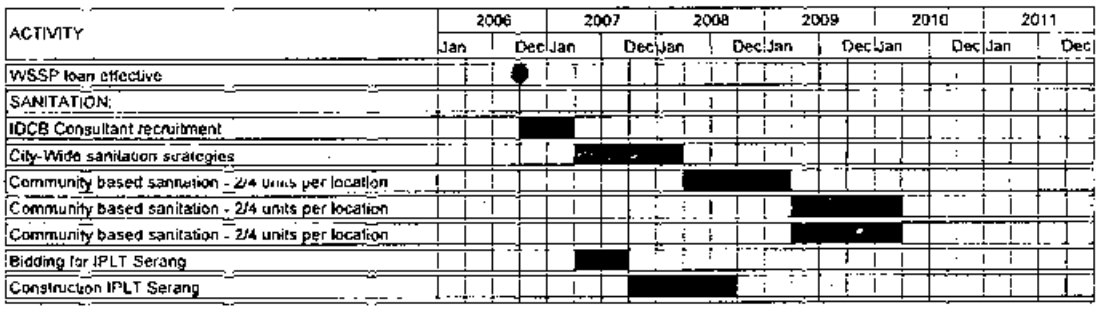
- operation and maintenance of the new water treatment plant,
- expansion of the distribution pipe network,
- rehabilitation of the existing distribution pipe network including attention to reduction of physical losses and attention to UFW,
- addition of new house connections, and
- training of PDAM staff in the operation and maintenance of the system.

2. SANITATION

103. Conversely, it is expected that no physical sanitation works will be done during the first year of the Project. For sanitation, the first year will be devoted to institutional development, capacity building and preparation of a city-wide sanitation strategy.

104. During the second and subsequent years, the community based sanitation physical components will be developed. These will be developed according to the following table.

Figure 3: Implementation Schedule – Sanitation



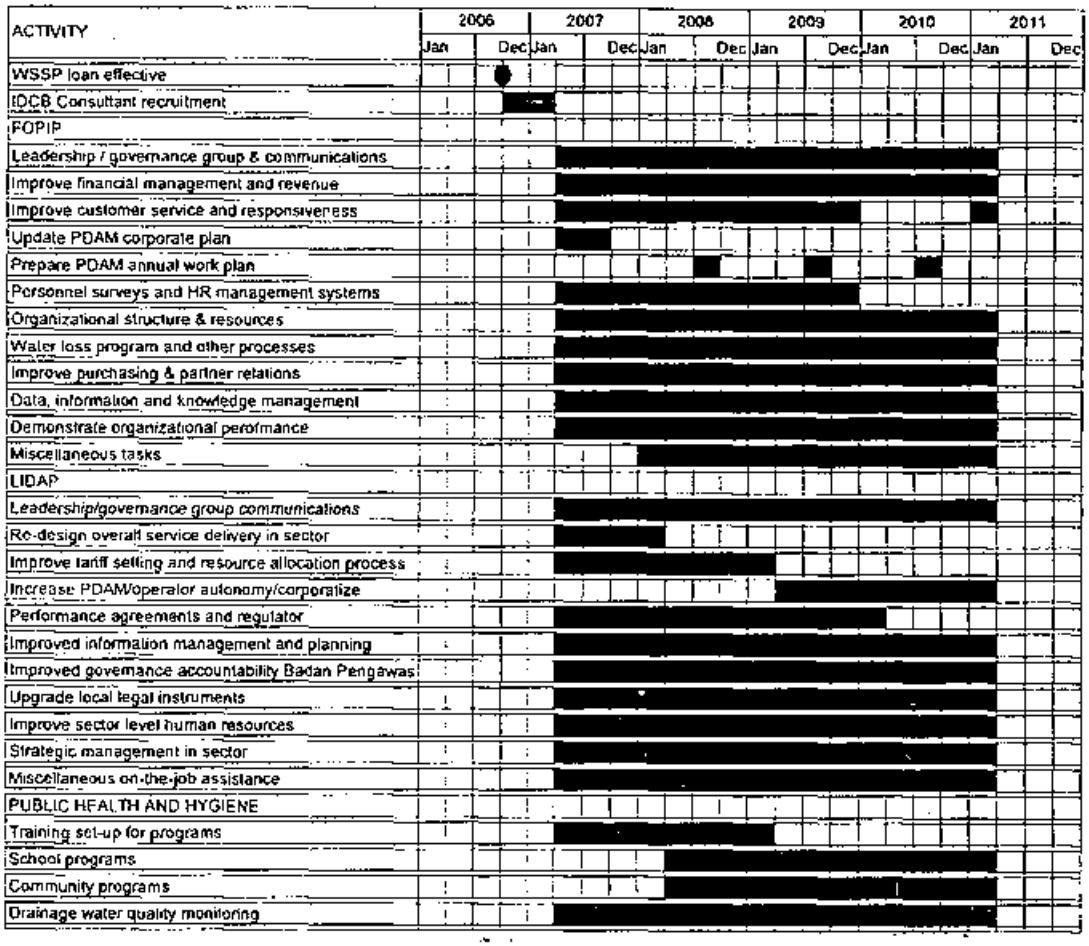
105. One IPLT is currently included in the Project. This is located in Kabupaten Serang. The AMDAL for this facility has already been prepared and processed. The DED is also available so that the bidding and construction of the work should proceed in the first year of the Project.

106. During the second, third and fourth years of the project two community based sanitation facilities will be developed and constructed in each of small to medium sized RGs. In the larger RGs, four units will be implemented each year

3. INSTITUTIONAL DEVELOPMENT AND CAPACITY BUILDING

107. The Institutional development and Capacity Building work will include the FOPIP, LIDAP and public education programs in health and hygiene. Much of the activity in these portions of the Project will proceed throughout the full five year project period, as illustrated in the following table.

Figure 4: Implementation Schedule – Institutional Development and Capacity Building



F. LOAN PROCESSING SCHEDULE

108. The current schedule for processing the loan from the ADB viewpoint is as follows:

- Consultant's Final Report issued — December 2005
- Loan Fact- Finding — February 2006
- Project Appraisal — March 2006
- Loan Negotiations — May 2006
- Loan Effective — October 2006

109. DGHS have advised that when all the SPARs are complete and in order, they should be submitted, by the RGs to the DGHS. DGHS will then forward them to the MoF. The MoF will arrange for the SPARs to be reviewed by the Tim Penilai KMK35. The MoF review is expected to take a minimum of one month, if all documentation is in order. This should be able to be achieved in during December 2005 and January 2006.

110. A further important aspect of the processing will be the need for the following locations to settle their debt rescheduling or restructuring arrangements with Ministry of Finance prior to commencement of Loan Negotiations.

- Kab Barru
- Kab Jeneponto
- Kab Maros, and
- Kot Palopo

G. FINANCING PLAN

111. The following table provides the summary of the financing plan for the Project.

Table 5: Summary Financing Plan – US$ Million

Source of Funds	Rp Billion			US$ Million			
	Foreign	Local	Total	Foreign	Local	Total	Percent
A. ADB							
1. ADB Loan	862	0	862	80.2	0.0	80.2	62.3%
2. ADF Loan	108	0	108	10.0	0.0	10.0	7.8%
ADB Total	**970**	**0**	**970**	**90.2**	**0.0**	**90.2**	**70.1%**
B. Counterpart Funds							
1. Central Government	9	93	102	0.9	8.4	9.2	7.2%
2. Local Government	0	52	52	0.0	5.0	5.0	3.9%
3. Consumers	0	140	140	0.0	12.7	12.7	9.9%
4. Operating Agency	0	120	120	0.0	11.5	11.5	8.9%
Counterpart Total	**9**	**405**	**414**	**0.9**	**37.6**	**38.4**	**29.9%**
Total	**979**	**405**	**1,384**	**91.1**	**37.6**	**128.6**	**100.0%**

Notes: The above project cost includes sub-projects in eight locations - Kab Serang, Kab Tapanuli Tengah, Kab Barru, Kab Jeneponto, Kab Maros, Kot Palopo, Kab Bandung and Kab Bogor.

H. PROJECT BENEFITS AND BENEFICIARIES

112. The water and sanitation development program in selected locations will assist in facilitating economic growth in the regions and also assist in the pursuit of equality through poverty alleviation. Economic growth will be facilitated by:

- providing urban infrastructure improvements which support sustainable commercial, services and industrial development, and
- ensuring efficient utilization of urban infrastructure.

113. Poverty alleviation will be assisted by providing improved environmental conditions in low income housing areas. The overall number of poor households was estimated at 26,000 involving a population of 128,000 and the number of vulnerable households was estimated at 10,000 households making up a population of 49,000.

114. Benefits of the water supply sub-project components will include:

- rehabilitation of existing water supply facilities serving 960,000 persons;
- provision of a clean water supply to a further 620,000 persons thereby improving the quality of life and the level of public health and also facilitating commercial, institutional and industrial development, and
- improved levels of water supply service for 960,000 persons due to the development good governance practices in eight water utilities.

115. Benefits of the sanitation sub-project components are:

- development of city-wide sanitation strategies in eight locations,
- reduction in pollution of surface and shallow groundwater and improvement in public health in urban areas covering 530,000 persons due to provision of a septic sludge treatment facility for 420,000 persons and new sanitation facilities for 110,000 per, and
- more effective development, management and operation of sanitation facilities.

III. TECHNICAL ANALYSIS

A. GENERAL

116. In general the technical analysis of projects has been based on data and information provided by the RGs and PDAMs. During the initial round of site visits, the scope of the Projects was agreed in discussions with key stakeholders and the accuracy of data checked by the Consultant. In almost all locations, no previous feasibility study was available to use as a basis for the Project evaluations. The initial Project scope was subjected to a check of technical feasibility. Based on further financial evaluations, adjustments were subsequently made to the Projects.

117. Further, on receipt of data from the socio-economic surveys it became apparent that adjustments to technical designs would need to be made for around half the proposed Projects. This Final Report therefore contains technical and financial evaluations of Sub-Projects which have been through a process of review and adjustment on three occasions.

B. URBAN PLANNING AND POPULATION PROJECTIONS

118. The RUTR (urban planning reports) for Project locations have been collected and examined. In Maros, Sidenreng Rappang and Tapanuli Utara there are currently no formal urban plans. In these locations the proposed Projects have been discussed with BAPPEDA and information gained from these discussions has been included in the SPAR.

119. For the purpose of the Project preparation, full demographic studies were not considered necessary.

120. Generally, it has been difficult to define data on Sub- Project areas. Data is available on RG population as a whole. It is also readily available per Kecamatan; however Sub-Project area boundaries rarely coincide with Kecamatan boundaries and therefore it is necessary to examine data at the Kelurahan or Desa level. As an example the Kabupaten Bandung water supply Sub-Project includes some 78 Kelurahan or Desa in the service area.

Table 6: Populations in WSSP Water Supply Project Service Areas

WS Sub-Project Location	No. of Kecamatan	No. of Desa		2006	2010	2015	Growth rate assumed
		Service area	Total	Population in thousands			% per year
Kab Serang	6	37	83	233	247	259	2.40%
Kab Tapanuli Tengah	3	24	52	82	85	90	0.40%
Kab Barru	3	18	21	98	103	109	1.20%
Kab Jeneponto	5	36	56	82	85	90	1.30%
Kab Maros	10	51	69	204	213	224	1.30%
Kot Palopo	4	25	28	130	135	142	2.30%
Kab Bandung	11	78	99	565	588	617	1.30%
Kab Pemalang	2	20	41	183	190	200	1.30%
Kab Bogor	10	33	98	1,271	1,322	1,390	3.20%
Sub-Totals Current Scope	**54**	**322**	**547**	**2,848**	**2,968**	**3,121**	**1.63%**
Kot Semarang	9	74	77	439	457	481	1.40%
Kab Tapanuli Utara	2	14	17	113	118	124	1.00%
Kab Sidenreng Rappang	6	49	58	164	172	183	1.50%
Kot Banjar	4	9	16	85	88	92	1.80%
Totals	**75**	**468**	**715**	**3,649**	**3,803**	**4,001**	**1.47%**

121. Generally the RUTR provide for optimistic targets for water supply and sanitation coverage in their medium to long term proposals. Targets in these urban plans usually reflect

gross national targets, such as 90% coverage of PDAM water supply by 2015. The plans are not based on demand surveys or similar. As such the Consultant has taken these plans as a guide only and used them as references for assessing which are the priority service locations from a planning viewpoint. Details of the various urban planning proposals are included in the SPARs which are appended to this report.

C. EXISTING CONDITIONS

1. WATER SUPPLY

COVERAGE

122. Coverage of existing systems in the Sub-Project locations is relatively low. On average the designated WSSP service areas currently have around 18% coverage of PDAM piped water supply systems. The following table summarizes the current situation with regard to PDAM supplies.

Table 7: Existing PDAM Coverage

Sub-Project Location	Coverage of RG population	Coverage of WSSP service area population	% of total RG population in WSSP service area
Kab Serang	5%	16%	66%
Kab Tapanuli Tengah	8%	30%	55%
Kab Barru	15%	7%	35%
Kab Jeneponto	7%	13%	36%
Kab Maros	10%	15%	68%
Kot Palopo	45%	47%	97%
Kab Bandung	8%	4%	57%
Kab Bogor	7%	10%	38%
Average Current Scope	**13%**	**18%**	**57%**
Kab Pemalang	8%	13%	25%
Kot Semarang	41%	50%	83%
Kab Tapanuli Utara	8%	18%	34%
Kab Sidenreng Rappang	10%	14%	61%
Kot Banjar	19%	27%	72%
Average	**15%**	**20%**	**56%**

ALTERNATIVE SUPPLIES

123. The following table summarizes the current means of household water supply for those which do not have a PDAM connection. The current source of supply of water in households not served by PDAM is generally by means of a well either fitted with an electric or hand pump or accessed with a rope and bucket. In many locations, particularly in North Sumatra and South Sulawesi, surface water is still used. Significant levels of water vendor activity were recorded in Bandung, Semarang and Tapanuli Utara.

Table 8: Household Water Sources for Non-PDAM Customers in Project Area

Sub-Project Location	Vendors	Public tap	Well with pump	Shallow well	Surface water or other
Kab Serang	1.3%	1.7%	61.0%	19.7%	16.3%
Kab Tapanuli Tengah	0.0%	4.0%	17.0%	18.0%	61.0%
Kab Barru	0.5%	0.0%	34.0%	35.0%	30.5%
Kab Jeneponto	0.0%	0.0%	7.0%	50.4%	42.5%
Kab Maros	7.5%	3.0%	7.5%	49.5%	32.5%
Kot Palopo	0.0%	0.5%	23.0%	0.5%	76.0%
Kab Bandung	40.0%	5.3%	34.5%	20.2%	0.0%
Kab Bogor	0.0%	0.0%	60.3%	3.8%	35.9%
Sub-totals	**6.2%**	**1.8%**	**30.5%**	**24.6%**	**36.8%**
Kab Pemalang	4.0%	0.0%	66.0%	14.0%	16.0%
Kot Semarang	28.8%	0.0%	24.7%	7.6%	38.9%
Kab Tapanuli Utara	10.0%	5.0%	3.5%	31.5%	50.0%
Kab Sidenreng Rappang	0.0%	1.0%	79.5%	0.5%	19.0%
Kot Banjar	0.0%	0.0%	53.8%	23.1%	23.1%
Totals	**7.1%**	**1.6%**	**36.3%**	**21.1%**	**34.0%**

Source: WSSP socio-economic survey.

124. Groundwater conditions in each of the locations have been examined as part of the field surveys. Specific comments on groundwater conditions in particular locations are as follows:

- Kabupaten Serang: Conditions for groundwater abstraction are poor in many locations and the quality is deteriorating in the crowded urban areas. In the north of the urban area the groundwater becomes saline.
- Kabupaten Tapanuli Tengah: The quality of groundwater is poor in the western areas of the town where it is salty. Pandan is located near the sea and in many places has intrusion of sea water into the groundwater.
- Kabupaten Barru: The quality of groundwater is poor, Barru is located along the sea where the groundwater is salty. In areas where the groundwater is scarce there are problems with availability during dry the season.
- Kabupaten Jeneponto: The quality of groundwater is poor. Again, Jeneponto is near the sea, especially in the southern area of the town where groundwater is salty, and there are problems during dry season. In Jeneponto it is very difficult to get fresh water.
- Kabupaten Maros: The quality of groundwater is poor especially the area near sea. There is no fresh water, and the available groundwater has high iron content and high turbidity. Also there are problems with availability in some areas during dry season.
- Kota Palopo: The quality of groundwater is poor especially in the area near sea. There is no fresh water and the groundwater has a high iron content and it is salty. In areas away from the sea there are problems with availability in many areas during dry season.
- Kabupaten Bandung: The groundwater in the densely populated urban areas is polluted and coloured.
- Kabupaten Bogor. Groundwater is good in some areas but in others has a high iron content; again there are problems with availability in many areas during dry season.
- Kabupaten Pemalang: The quality of groundwater is poor with high lime content and salt levels, especially in northern area of the town. Availability is also a problem during dry season;
- Kabupaten Semarang: The quality of groundwater is poor in the northern area of the town suffers from intrusion of sea water.

- Kabupaten Tapanuli Utara: The quality of groundwater is poor in all areas of the town where it has excessive iron and lime content.
- Kabupaten Sidenreng Rappang: The groundwater quality is poor due to a high iron content. There are problems with availability in many areas during dry season. The existing system of PDAM use deep well as raw water source.
- Kabupaten Banjar: The groundwater quality is poor due to high turbidity, iron and lime content. There are problems with availability in many areas during dry season.

PDAM SYSTEMS

125. The following table provides salient data on current systems which are being operated by PDAMs in the Project locations. Generally the level of service provided is less than acceptable. The quality of water does not meet drinking water standards and supplies are intermittent with many distribution pipes empty for extended periods of time. The current level of consumption is computed at around 116 liters per capita per day. Water losses are generally not measured and reported figures average around 33%.

Table 9: Data on PDAM Existing Systems

Sub-Project Location	BNA systems	IKK systems		HC	Consum-ption	UFW	System capacity
		Operating	Defunct		l/cap/day		l/sec
Kab Serang	32	17	8	25,835	121	28%	439
Kab Tapanuli Tengah	15	7	0	2,398	132	25%	49
Kab Barru	7	6	1	3,159	98	33%	90
Kab Jeneponto	9	1	0	4,625	62	30%	50
Kab Maros	14	1	0	5,700	106	33%	90
Kot Palopo	4	3	0	11,958	163	22%	150
Kab Bandung	45	8	0	46,204	96	44%	700
Kab Bogor	35	12	0	91,285	153	32%	2,039
Total or average	**161**	**55**	**9**	**191,164**	**116**	**31%**	**3,607**
Kab Pemalang	2	1	0	10,498	113	31%	179
Kot Semarang	17	9	0	118,300	132	58%	2,422
Kab Tapanuli Utara	11	8	0	5,277	181	35%	43
Kab Sidenreng Rappang	11	4	0	3,975	107	32%	80
Kot Banjar	4	3	0	6,095	70	28%	80
Total or average	**206**	**80**	**9**	**335,309**	**118**	**33%**	**6,411**

Note: UFW figures are as reported by PDAMs.

126. The review of the water supply systems in Project locations concluded that the following were the key problems and issues from a technical viewpoint:

KAB SERANG

- Poor conditions concerning ground water, both from the viewpoint of quality and availability.
- Limited water resources for provision of supplies to development areas.
- Low coverage of systems with only 11% of urban population served within the 6 Kecamatan (Serang, Cipocok Jaya, Kasemen, Taktakan, Ciruas, and Curug) proposed for systems expansion.
- Problems in the existing system due to pipes being old and requiring replacement.

KAB PEMALANG

- Inadequate water production capacity for serving the existing house connections on a 24 hour per day basis.
- Problems with the existing transmission pipe, especially the asbestos cement pipe which requires replacement.

KOT SEMARANG

- Water resources permits say PSDA will 2,500 l/sec for Kudu WTP, however up to now only around 1,200 l/sec has been provided.
- Distribution system requires replacement of water meters for around 30% of existing house connections.
- High water losses of 57% due mainly to the age and location (4 to 5 m below the surface) of distribution pipes.
- PDAM does not yet serve water on 24 hour per day basis.

KAB TAPANULI TENGAH

- Limited of quantity and continuity and poor quality of raw water in the production systems.
- Limited water production capacity for serving of the existing house connections on a 24 hour per day basis.

KAB TAPANULI UTARA

- Limited of quantity and continuity and poor quality of raw water in the production systems.
- Limited water production capacity for serving of the existing house connections on a 24 hour per day basis.

KAB BARRU

- The piped water supply system has low coverage.
- The existing production facilities have many problems, two of four treatment plants are inoperative and raw water supply is difficult during dry season and turbid in the wet season.
- The quantity of water provided per connection is inadequate due to low pressure and intermittent supply of only 8 hours per day.
- The location of most of Kabupaten Barru is along the sea, and the only raw water source located was in Kecamatan Mallusetassi, which is well away from the urban areas.

KAB JENEPONTO

- The piped water supply system has low coverage.
- The quality of water in the existing supply system is very poor; the intake to the piped supply system currently experiences seasonal problems due to salt water intrusion.
- The quantity of water provided per connection is inadequate due to low pressure and intermittent supply of only 8 hours per day.
- The existing piped water facilities suffer from many technical faults and problems which makes the service unreliable and expensive to operate.
- There is no main water meter facility for supply system.
- The existing WTP not properly operated by PDAM.

KAB MAROS

- Poor conditions concerning ground water, both from the viewpoint of quality and quantity.
- Low coverage of systems with service to only 15% of urban population in the 10 Kecamatan proposed for development caused by limited existing production capacity.

KOT PALOPO

- The groundwater in the urban areas is limited and of poor quality, because the city is in a costal area leading to salinity problems.
- Limited water production facilities for provision of supplies to development areas.
- The existing water source of Latuppa river in wet season has turbidity more than 2000 NTU, the existing WTP could not operate with that quality.

KAB SIDENRENG RAPPANG

- The groundwater in the urban areas is limited and of poor quality;
- Limited water resources for provision of supplies to development areas.
- Low coverage of systems with only 11% of urban population served within the 6 Kecamatan proposed for systems expansion.
- The existing production facilities are inadequate and in addition they are drawn from bores which are seriously diminishing in their yield.

KAB BANDUNG

- The capacity of the existing system in the Kabupaten is 700 l/sec and the continuity the service and quality of the water supplied is quite good, but the coverage extremely low.
- The areas of urban overspill from the Kota are densely populated and are urgent need of a piped water supply service.
- The groundwater in the densely populated urban areas is polluted and coloured.

KOT BANJAR

- The capacity of the existing system in the Kota is quite low at 40 l/sec and the continuity the service and quality of the water supplied is quite poor. The system requires complete refurbishment.

KAB BOGOR

- Low coverage of systems with only around 20% of urban population served and a waiting list of 20,000 households, currently requesting a PDAM service;
- High losses of 38% to 40% due mainly to the age of the main transmission pipe (circa 1920) from the Ciburial Spring to the Jakarta outskirts;

2. SANITATION

127. Generally householders in Project locations have private toilets and bathrooms, however the means of treatment and disposal of waste varies significantly between the Project Provinces.

Table 10: Household Toilet and Bathroom Facilities

Sub-Project Location	Private toilet and bathroom	Bathroom but no toilet	No bathroom or toilet
Kab Serang	98%	2%	0%
Kab Bandung	90%	10%	1%
Kab Bogor	98%	1%	2%
Kab Jeneponto	44%	15%	4%

Kot Palopo	78%	15%	7%
Kab Maros	77%	4%	20%
Kab Tapanuli Tengah	73%	4%	23%
Kab Bantu	76%	1%	23%
Average for proposed Project	**79%**	**7%**	**10%**
Kot Semarang	99%	1%	0%
Kot Banjar	9%	89%	3%
Kab Pemalang	78%	18%	5%
Kab Sidenreng Rappang	78%	10%	12%
Kab Tapanuli Utara	68%	17%	15%
Average all locations surveyed	**74%**	**14%**	**9%**

Source: WSSP socio-economic survey

128. Generally the larger cities have a very high coverage of private toilets and bathrooms. The locations off the island of Java, such as in South Sulawesi and North Sumatra record an average of around 20% of houses without toilets or bathrooms.

129. The details of the breakdown of facilities as computed from the WSSP survey in the Project Areas are included in the following table.

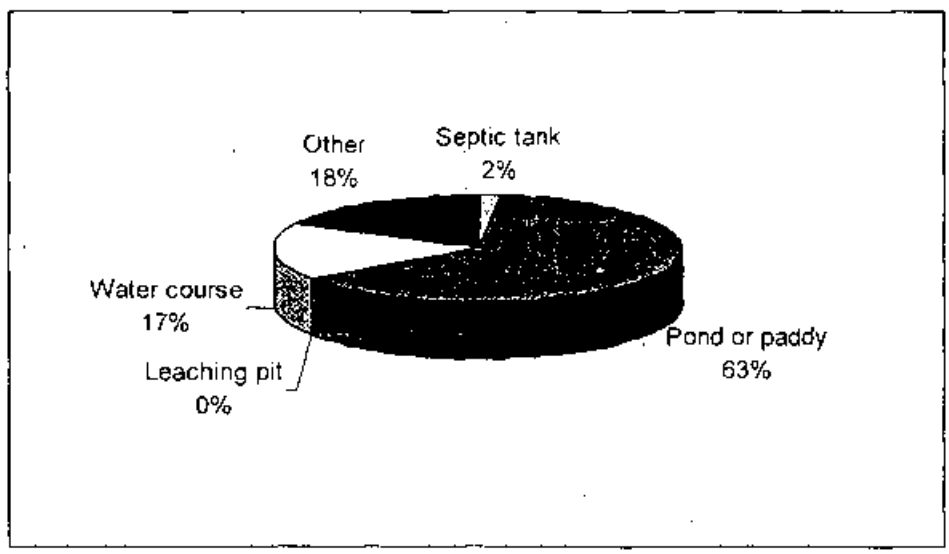
Table 11: Existing Sanitation Treatment Systems

Sub-Project Location	Septic tank	Leaching pit	Pond or paddy	Water course or lake	Other
Kab Serang	86%	5%	1%	7%	0%
Kab Tapanuli Utara	75%	6%	9%	9%	1%
Kab Jeneponto	87%	13%	0%	0%	0%
Kab Bandung	47%	22%	7%	22%	2%
Kot Banjar	90%	1%	3%	5%	1%
Kab Bogor	97%	2%	0%	2%	0%
Kab Pemalang	78%	18%	0%	5%	0%
Kot Semarang	99%	0%	1%	1%	0%
Average	82%	3%	8%	6%	4%

Source: WSSP socio-economic survey

130. The high coverage of septic tanks is recorded in all locations except Kabupaten Bandung, where the coverage of acceptable facilities is well below average.

Figure 5: Bathroom and Kitchen Wastewater Management



131. As described in Chapter IV, the current level of concern for sanitation among RGs in the Sub-Project locations is quite low. The socio-economic survey further established that

generally in excess of 90% of the urban dwellers in the Project areas are satisfied with their existing sanitation arrangements.

132. The survey indicates that in the Project locations sanitation systems in use are generally attending to waste from toilets by removal of solids only and waters with high levels of pollution are being discharged to drains both from toilets and also bathroom and kitchen wastes.

133. The overall conclusion of the surveys is that the low level of awareness concerning the need to improve sanitation systems is the first task which needs to be addressed.

134. Concerning management of septic tank sludge the following table summarizes conditions in the Project area attention appears to be required to the management of desludging systems in Pemalang and Maros. The proposed IPLT in Serang would appear to be urgently required.

Table 12: Septic Sludge Management in the Project Area

Sub-Project Location	Tankers operating	IPLT available	Performance of IPLT or Comment
Kab Serang	Yes	No	IPLT proposed under WSSP
Kab Pemalang	Yes	Yes	Not utilized
Kot Semarang	Yes	Yes	Fair utilization
Kab Tapanuli Tengah	No	No	
Kab Tapanuli Utara	No	No	
Kab Barru	No	No	
Kab Jeneponto	No	No	
Kab Maros	Yes	Yes	Not well utilized
Kot Palopo	Yes	No	
Kab Sidenreng Rappang	Yes	No	
Kab Bandung	Yes	Yes	Well utilized
Kot Banjar	Yes	Yes	Well utilized
Kab Bogor	Yes	Yes	Well utilized

D. PROPOSED PROJECT WORKS

1. WATER SUPPLY

135. The evaluation of requirements from the viewpoint of rehabilitation and expansion works, listed the following components:

CURRENT PROJECT SCOPE

KAB SERANG

- Rehabilitation
  - Rehabilitation of Production unit at Kasemen 10 l/sec,
  - Change of Distribution pump in Pontang and Kragilan, boster pump at Anyer
  - Rehabilitation of distribution pipe in Kota Serang,
  - Rehabilitation of customer water meter
- Expansion Kota Serang system
  - Land acquisition
  - Intake and raw water transmission pipe 500 mm length 1,200 m.
  - WTP at Gelam for 200 l/sec.
  - Transmission pipe 19,800 m 450 - 600 mm dia.
  - Service reservoir 4,000 cu.m.
  - Distribution pipe 251,000 m 50 to 300 mm dia.

- Additional house connections.

KAB TAPANULI TENGAH

- Expansion Pandan system
  - Transmission pipe 400mm length 400 m
  - Secondary and tertiary distribution pipe, diameter 50 – 400mm 72,602 m
  - Water intake at Aek Siaili
  - WTP 100 l/sec
  - Additional reservoir 1,000 m3
  - Additional house connections

KAB BARRU

- Rehabilitation:
  - PDAM office to be refurbished
  - In the existing distribution network, there are many old pipes to be changed and replacement of water meters is required
- System expansion
  - WTP 100 l/sec at Nepo kec. Malussetassi
  - Service reservoir 650 cu. m.
  - Raw water transmission pipe 1,100m 250mm dia. and transmission and distribution pipe dia. 50 – 300 mm, 87,908 m.
  - Additional house connections

KAB JENEPONTO

- Rehabilitation:
  - PDAM office to be refurbished
  - Distribution network pipe replacement and replace 30% of water meters.
- System expansion
  - WTP 75 l/sec
  - Service reservoir 500 cu. m.
  - Raw water transmission pipe 400mm dia., 250m
  - Transmission pipe 300 - 350mm dia., 10,200m
  - Distribution pipe 50-200mm dia., 104,960m
  - Additional house connections

KAB MAROS

- System expansion
  - Raw water transmission 400 mm dia. 200 m.
  - WTP 150 l/sec
  - Service reservoir 5.000 cu m.
  - Transmission pipe 400mm dia., 20,000m.
  - Distribution pipe 50 - 300mm dia., 123,000m.
  - Additional house connections

KOT PALOPO

- Rehabilitation:
  - Rehabilitation of existing WTP
- System expansion
  - WTP 200 l/sec at Selo Bambalu
  - Service reservoir 2,000 cu. m.
  - Raw water transmission pipe 400-450mm dia., 15,100m.
  - Transmission pipe 400 – 450 mm dia., 12,400m.
  - Distribution 75-300 mm dia, 89,340m.
  - Additional house connections

KAB BANDUNG

- System development and expansion:
  - Land acquisition
  - Intake at Cisankuy river for 600 l/sec (100 l/sec for existing WTP)
  - WTP 500 l/sec
  - Raw water Transmission pipe 3,650 m 600 mm dia.
  - Treated water transmission pipe 58,317m, 300 – 600 mm dia
  - Service reservoir 9,000 cu m capacity.
  - Distribution pipe 360,960 m 75 to 250 mm dia.
  - Replacement of existing house water meters 3,790 units
  - Additional house connections
  - PDAM branch office.

KAB BOGOR

- Bogor Timur expansion
  - Land acquisition
  - WTP at Desa Bojong Nangka – 150 l/sec
  - Additional service reservoirs 3,600 cu.m. at Bojong Nangka
  - Transmission pipe, 500 mm dia., 5,150 m
  - Distribution pipe 226,000 m 50 to 400 mm dia.
  - Additional house connections
- Bogor Tengah expansion
  - Land acquisition
  - WTP at Desa Sukahati, Kec. Cibinong 150 l/sec
  - Additional service reservoirs 3,000 cu.m. at Desa Sukahati, Kec. Cibinong
  - Transmission pipe dia 400 mm – 500 mm., 9,700 m.
  - Distribution pipe 50 to 300 mm dia., 187,000 m
  - Additional house connections
  - Rehabilitation transmission pipe, dia. 400 mm – 50 mm, 73,120 m
  - Replacement house water meter 15,000 units

- Replacement of main water meter at WTP Cibinong

- Bogor Barat expansion
  - Land acquisition
  - Spring intake works At Binong Spring, Kec. Ciomas, 70 l/sec
  - Transmission pipe dia 200 – 400 mm, 9,100 m
  - Distribution pipe 50 to 300 mm dia., 54,190 m
  - Reservoir with capacity 710 m3
  - Break pressure tank 2 units
  - Transmission pipe 40 l/sec. from Binong Spring to Ciburial Reservoir (existing)
  - Transmission pipe 30 l/sec from Binong Spring to Ciampea Reservoir
  - Distribution pipe 50 l/sec from Kahuripan Spring System (existing) to Kec. Ciampea
  - Power supply and supporting facilities at Kec. Ciampea
  - Additional house connections

OTHER LOCATIONS – FULL SPAR DOCUMENTS DRAFTED[4]

KAB PEMALANG

- Rehabilitation
  - Replacement of 1,800 house water meter
- Expansion
  - Transmission Pipe from BPT 1 – BPT 2, dia. 350 mm, 5,600 m
  - Transmission pipe BPT 2 – Reservoir, dia. 400 mm, 19,200 m
  - Pipe Bridge 9 units
  - Main water meter 4 units
  - Additional reservoir 2,000 m3
  - Land acquisition
  - Distribution main pipe, dia.200 mm – 500 mm, 30,000 m
  - Additional house connections

KOT SEMARANG

- Rehabilitation
  - Replacement of 35,480 house water meters
  - Installment of 63 district water meters
- Expansion
  - Land Acquisition
  - Distribution pipe 428,463 m 75 to 600 mm dia.
  - Additional house connections

[4] Full SPAR documents have been prepared for Kabupaten Pemalang, Kota Semarang, Kabupaten Tapanuli Tengah, Kabupaten Sidenreng Rappang and Kota Banjar and these are appended to the Draft Final Report.

KAB TAPANULI UTARA

- Unit Tarutung System
  - Land acquisition
  - Spring intake works – 60 l/sec at Desa Parbubu Duluk and Simarlai.
  - New Reservoir with 1,500 m3 of capacity
  - Transmission pipe dia. 150 mm – 250 mm, 8,900 m
  - Distribution pipe dia. 50 mm – 300 mm, 46,050 m
  - Additional house connections
- Unit Muara System
  - Rehabilitation transmission pipe 1,500 m, dia. 100 mm.
  - Land acquisition
  - Spring intake works 10 l/sec at Sidimpula River at Desa Silahi Toruan.
  - BPT 7 cu.m. at Desa Siahi Toruan
  - Transmission pipe dia. 150 mm, 3,000 m
  - Distribution pipe dia. 50 mm – 200 mm, 17,500 m
  - Additional house connections
  - Replacement of house water meter 60 units
- Unit Sipoholon System
  - Land acquisition
  - Spring intake works 30 l/sec at Desa Simanuk Galik, Losung Baru River
  - Pipe Bridge 3 unit
  - Slow sand filter 1 unti at Deas Simanuk Galik
  - Transmission pipe 250 mm dia., 2,000 m
  - Distribution pipe 50 mm – 400 mm dia. 26,000 m
  - New reservoir 450 m3
  - Main water meter 1 unit
  - Additional house connections

KAB SIDENRENG RAPPANG

- Rehabilitation:
  - PDAM office to be refurbished
- System expansion
  - WTP 200 l/sec at Amparita
  - Service reservoir 2,600 cu. m.
  - Transmission pipe 450-500mm dia., 17,770m.
  - Distribution pipe 50-400mm dia. 163,696m.
  - Additional house connections

KOT BANJAR

- System rehabilitation, development and expansion:
  - Land acquisition

- Intake at Sungai Citanduy at Desa Purwaharja
- WTP 50 l/sec at Desa Purwaharja
- Additional reservoir 1,000 m3 at Desa Purwaharja
- Transmission pipe, 400 mm dia, 200 m
- Distribution pipe 51,400 m 50 to 400 mm dia.
- Rehabilitation of existing service reservoir
- Replacement of existing house water meters 1,800 units
- Additional house connections

136. The following table summarizes the proposed expansion of systems with regard to house connections.

Table 13: House Connections 2005 to 2015

Sub-Project Location	Existing	Additional 2006-2009	Additional 2006-2011	Additional 2006-2015
Kab Serang	25,835	18,898	20,767	25,140
Kab Tapanuli Tengah	4,594	4,606	5,732	6,887
Kab Barru	4,776	6,565	8,506	9,646
Kab Jeneponto	4,625	7,997	8,821	10,469
Kab Maros	5,700	8,178	10,277	14,635
Kot Palopo	11,553	5,364	9,230	15,186
Kab Bandung	46,204	25,064	32,503	47,957
Kab Bogor	91,285	20,708	27,258	27,258
Totals Current Scope	**194,572**	**97,380**	**123,094**	**157,178**
Kab Pemalang	10,498	7,000	10,000	17,500
Kot Semarang	118,265	26,939	41,057	50,890
Kab Tapanuli Utara	5,277	4,600	6,600	7,200
Kab Sidenreng Rappang	4,932	9,960	12,034	16,868
Kot Banjar	6,095	3,950	5,950	10,950
Totals	**339,639**	**149,829**	**198,735**	**260,586**

137. In the above table 2006-2008 represents the period of addition of connections under the proposed DBO Contracts. 2006-2010 is the period of WSSP and 2006-2015 represents the contribution of WSSP to achieving the Millennium Development Goal.

2. SANITATION

138. The evaluation of requirements concerning sanitation improvements provided the following components:

- Community Sanitation Centres (CSC) 3 no. per RG except 6 no. in RG Metropolitan;
- Simplified Community Sewerage Systems (SCSS) 3 no. per RG except 6 no. in RG Metropolitan;
- School Sanitation Centres (SSC) 20 no. per RG except 40 no. in RG Metropolitan.

139. The RG currently classified as Metropolitan include Kota Semarang, Kabupaten Bandung and Kabupaten Bogor. In addition to the above an IPLT is proposed for construction at Kabupaten Serang.

E. ASSESSMENT OF TECHNICAL VALIDITY

1. WATER SUPPLY

OPTIMIZING EXISTING ASSETS

140. The project includes a number of physical works directed at optimizing existing assets. The primary focus in this area has been the rehabilitation of pipe work systems. The commitment to optimizing existing assets is evidenced in the following Project activities:

- Transmission pipe replacement in Bogor, where old pipes are leaking and causing excessive water losses.
- Rehabilitation of the existing treatment plant in Palopo..
- Increased service reservoir capacity in Serang and Maros to allow for optimal use of existing distribution systems.
- Replacement of bulk water meters in Bogor.
- Distribution pipe replacement in Tapanuli Tengah, Barru and Palopo.
- Meter replacement programs in Barru and Bogor.
- Refurbishment of the existing PDAM offices in Barru.

141. In addition to the above, UFW reduction programs are included in works in all locations. These are further detailed in the Institutional Development and Capacity Building section of the report.

WATER SOURCES

142. Alternative water sources have been considered and inspected in all locations and the Consultant considers that those in the following table are economic and environmentally acceptable for use under the Project.

Table 14: Water Sources Utilized in WSSP

Regional Government	Name of source	Source capacity l/sec	Proposed abstraction l/sec	%	SIPA obtained	AMDAL required
Kab. Serang	Cibanten River	1,000	200	20%	Not yet	No
Kab. Tapanuli Tengah	Sialil River	350	100	29%	Not yet	No
Kab. Maros	Maros River	4,000	150	4%	Yes	No
Kab. Jeneponto	Kelara River	2,000	75	4%	Not yet	No
Kab. Barru	Landre River	1,000	100	10%	Not yet	No
Kot. Palopo	Salo (Stream) Bambalu	900	200	22%	Not yet	No
Kab. Bandung	Cisangkuy River	2,500	500	20%	Yes	Yes
Kab. Pemalang	Telaga Gede Spring	2,000	200	10%	Not yet	No
Kab. Tapanuli Utara	Situmandi River	1,000	150	15%	Not yet	No
Kab. Sidenreng Rappang	Salo (Stream) Caming	300	200	67%	Not yet	No
Kot. Banjar	Citandui River	5,000	50	1%	Not yet	No
Kab. Bogor	Cikeas River	800	200	25%	Yes	No
	Ciliwung River	2,000	100	5%	Not yet	No
	Binong Spring	70	30	43%	Not yet	No
	Kahuripan Spring	120	50	42%	Not yet	No

Notes.
1. A SIPA is a permit for abstraction of water. It is obtained from either local or Provincial Water Resources Management office.
2. An AMDAL is a full environmental impact study.

143. The water source in Sidenreng Rappang has been inspected by the Consultant's Technical and Environmental specialists. They report that the stream is entirely within a State Forest reserve and there are no downstream users of the water prior to its junction with other more significant streams.

System Expansions

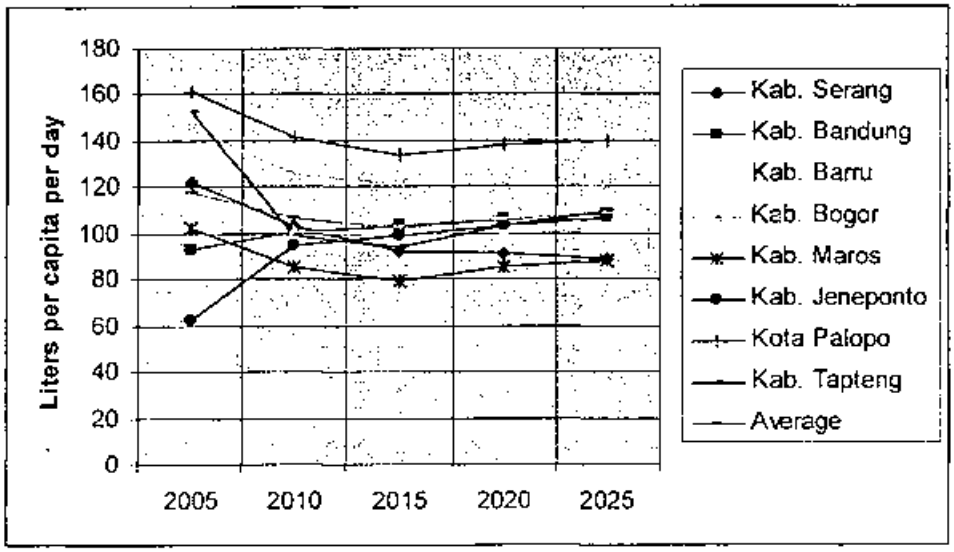
144. Generally water supply system expansions have been designed based on the guidelines of the Ministry of Public Works. The following table reviews key design criteria.

Table 15: Water System Design Review

Description	Projected consumption rate	Transmission pipe velocity at maximum flow	Service reservoir capacity	Water losses	Distribution pipe
units	l/c/d	m/sec	average day	%	m/connection
DPU guideline	100-125	max. 2.0	10-15%	20-25%	-
Kab Serang	103	1.8	25%	20%	12
Kab Tapanuli Tengah	99	1.4	15%	20%	10
Kab Barru	101	0.8	15%	27%	12
Kab Jeneponto	95	1.9	19%	30%	11
Kab Maros	84	1.4	25%	25%	15
Kot Palopo	142	1.9	10%	20%	9
Kab Bandung	101	2.0	25%	35%	13
Kab Bogor	124	1.0	17%	28%	12
Average Current Scope	**106**	**1.5**	**19%**	**26%**	**12**
Kab Pemalang	106	2.0	17%	26%	10
Kot Semarang	123			46%	9
Kab Tapanuli Utara	117	1.2	17%	30%	10
Kab Sidenreng Rappang	103	1.4	15%	28%	12
Kot Banjar	88	1.1	17%	25%	12
Average	**107**	**1.5**	**18%**	**28%**	**11**

145. Water consumption figures are predictions after the Project works are complete and are based on current consumption and field survey results with the effects of price elasticities taken into account. The high consumption figure predicted for Palopo is based on field survey results. The gross scarcity of alternative sources in Palopo means that the per capita consumption in this location is much higher than in other areas.

Figure 6: Projected Consumption per Location



146. The WSSP team has sampled and tested all water sources and results and details of designs of the various treatment plants are included in the SPARs. In Pemalang and Tapanuli Utara the water will be abstracted direct from springs and minimal treatment is required. In all other locations WSSP water treatment plants will provide full treatment in the conventional form of clarification and filtration.

147. Service reservoir capacities in Serang and Maros are set above the recommended due to the inadequate capacity of reservoirs currently in operation in the existing systems in these areas. Also a larger than normal service reservoir is required in Bandung since the intake is downstream of a hydro-electric power station. This power station closes down periodically for long periods for preventative maintenance. During these times the flow of water to the PDAM intake location is cut off.

148. Transmission pipes in most locations allow for further staged development of water sources, where this is possible.

149. Water loss figures, after the Project, are in excess of 25% in locations where losses are currently relatively high.

150. The length of distribution pipe per house connection in each location has been established based on observation and discussions with PDAM technical staff. The average length is 12 meters per connection, which compares favourably with existing system data.

2. SANITATION

151. Community Based Sanitation as is proposed in the Project provided through BORDA is an established approach to urban sanitation in Indonesia. This approach is currently the preferred approach of DHGS. Concerning the treatment units in both forms of application, the following table provides relevant design criteria.

Table 16: Sanitation treatment units – design criteria

Treatment unit	Loading	Detention time	Comment
Baffled reactor	6 kg BOD/cu m/day	30 to 40 hours	Up to 8 stages
Anaerobic filter	4 kg BOD/cu m/day	10 to 20 hours	Up to 4 stages
Horizontal gravel filter	8 g BOD/sq m/day	8 to 12 hours	
Bio-gas digester		1 to 2 days	

152. The above may be compared with anaerobic processes such as UASB which has a maximum volumetric loading rate of 2 kg COD/cu m/day at which rate it is designed to provide full treatment. The baffled reactor therefore appears to act as a "roughing filter" upstream of the anaerobic unit. The gravel filter unit loading compares reasonably with loadings of decanter digester filter type units.

153. BORDA advise that their sewer systems are designed with a minimum slope of 1/100 and a maximum of 200 houses on a 150 mm sewer. For the smaller diameter pipes this slope is less than normally utilized in conventional sewer systems; however it compares favorably with slopes used in low-cost condominial type sewer systems, where community participation in the development and operation of the systems allows flatter grades.

Table 17: Sewer pipes – minimum slopes

Pipe dia (mm)	Conventional	Small bore	SCSS (BORDA)
75	Not used	1/150	1/100
100	1/80 normal 1/130 lower limit	1/250	1/100
150	1/150 normal 1/200 lower limit	1/300	1/100

154. 35 CSCs have already been built in migrant settlements in Jakarta, Surabaya and Denpasar. These facilities were designed by the Bremen Overseas Research and Development Association (BORDA). Each contains six WCs, six bath cubicles, a washing room for clothes and a room for an operator. A simple underground wastewater biological treatment plant is incorporated, which distinguishes it from an old style MCK. This eliminates surface water pollution and also provides biogas as a renewable energy source. The cost of a CSC to serve 100 families is some Rp 300 million.

155. SCSSs have also been built following BORDA guidelines in Pasaruan and Blitar and the investment costs per household are reported to be similar. Community involvement is the same as CSCs, where grants were provided only if a participatory dissemination approach involving local NGOs as well as communities was followed. This meant that the facilities were provided only in places where the community had demonstrated commitment and had agreed to provide 10% of the investment in cash or labor. In some cases, the offer of a facility was advertised generally and communities were invited to bid.

156. In previous BORDA projects investment costs were provided 40% by central grants, 40% by the local government and 20% by donors. The assumption for WSSP is that the central government will be willing to grant finance 3 CSC and 3 SCSS pilot projects in each medium to small project regencies and 6 CSC and 6 SCSS in the larger RGs of Bandung, Bogor and Semarang. It is assumed these will be provided using ADF funding. The location of these projects will be decided during project implementation. Any additional projects would be financed by the regional government, with 10% from the community, 20% from equity and 70% from an ADF loan. Analysis in the SPARs shows that the CSC projects could be self-financing. Data on SCSSs will be analyzed when available. It is also assumed that the central government will take an ADF loan to grant finance toilet facilities costing some base Rp 15 million at 20 schools in each of the medium to small RGs and 40 in each of the three larger RGs.

IV. INSTITUTIONAL DEVELOPMENT AND CAPACITY BUILDING

A. INSTITUTIONAL ARRANGEMENTS GENERAL

1. PHYSICAL INVESTMENTS ARE NOT FULLY EFFECTIVE WITHOUT APPROPRIATE INSTITUTIONS

157. The proposed project relies both on physical investment as well as institutional development and capacity building to achieve its objectives. The two sets of project activities should compliment one another. The effectiveness and efficiency of the physical investment in water supply and sanitation will be enhanced if the formal and informal rules (the "institutions") are in place to ensure that these facilities are designed, built, operated, maintained and in due course expanded in accordance with community needs and expectations. On the other hand, ensuring the institutions are able to play their role requires not only their development and capacity building of key organizations and individuals, but also physical investment in pipes, pumps and the like. In short, sustained improvement in water supply and sanitation services needs both technical solutions as well as change in the institutional arrangements as well as improvements in the capacity of key actors. One challenge however in this situation is that physical works are easier to understand and to measure, so there is a tendency to under provide institutional and capacity building activities.

2. OBJECTIVES OF THE INSTITUTIONAL DEVELOPMENT AND CAPACITY BUILDING (IDCB)

158. The third objective of the consulting services for project preparation was to "prepare institutional-development and capacity-building programs addressing sector reform and governance" (paragraph 1 of the Terms of Reference – underlining added).

159. The overall objectives of the institutional development (ID) activities are further emphasized in paragraph 3, where it says: "Criteria for selecting PDAMs and RGs will be based on (i) their fiscal capacity and commitment to reform" and "(ii) governance criteria". One of the main objectives of the sector reform is highlighted in the third criteria, which is "(iii) focus on serving low in-come communities".

160. The TOR specifies four activities for ID:

- Discussions with RGs and PDAMs to identify key issues, capacity building needs and develop concepts for the design of the capacity building components
- Outline a system of accreditation for personnel and organizations involved in the sub-sector;
- Prepare action plans for each PDAM and RG within the framework of on-going deregulation (including designing an open competency – based organization and staffing system); and
- Developing with the team a Financial and Organizational Performance Improvement Plan (FOPIP) for participating PDAMs

161. The TOR requires two other activities which are not listed under ID but have a close connection and therefore were handled as part of institutional development – these are preparing an effective Project Performance Monitoring System (PPMS) and recommendations on private sector participation (PSP).

3. CONCEPTS FOR IDCB

162. The basic approach to the institutional development work was outlined in the Inception report and was as per the TOR – to consult with RG and PDAMs, identify needs and develop a program to service those needs, using standards and common designs as much as possible to do it efficiently. But before doing so, some common understanding is

needed. The following concepts have been laid down to help improve later implementation of the IDCB component.

SOME KEY PRINCIPLES FOR THE IDCB PROGRAM

163. Some key principles are noted below - along with implications for the project.

- Although institutional development and capacity-building activities under a project should support the achievement of the project objectives, they often not implemented in a synchronized manner – for this project they be tied to physical work and help reform of service delivery to focus more on low-income communities by being part of the Annual Review;
- The field of Institutional Development, like Organizational Development (OD), is far from being a "hard science" and so has a developing vocabulary and methods – the project should agree on a few well recognized models (ISO 9000; Quality Management Systems, for example) and try and maintain over the life of the project the conceptual frameworks they provide; the IDCB has used just one model for the Institutional level work for all participating RGs, and another for all PDAMs under the Financial and Operational Performance Improvement Plan (FOPIP)
- Although ID / OD might be considered "unscientific" at present, programs should be based on factual analysis as much as possible – institutional-development and capacity-building programs was therefore based on surveys of key informants using "standard" questionnaires, which can be used in later years to assess progress against "baselines";
- Capacity–building is a slow process - this project should be aiming to put in place the fundamentals more than targeting ad-hoc interventions; the programs developed therefore are based on a long-term vision of how the water and sanitation sector should be structured and with an implementation approach which requires an Annual Review of the last year's results and the implications for the next year's physical and IDCB program of activities;
- Further, because participation that ensures "ownership" is vital for effective ID, (perhaps much more so than ensuring effective physical investment) the preparation schedule did not allow sufficient time for this process so a more participative approach needs to be built into the 5-year program that the project will design – again emphasizing the need for the Annual Review;
- RGs and PDAMs are much more likely to learn from their peers than central government or consultants – a "benchmarking approach" therefore has be built into the IDCB approach – and especially the FOPIP - to encourage participants to "network" and compare their performance with one-another throughout the project's life; and
- Performance improvement should be a systematic activity – the goal should be to institute within the participating organizations a "plan-do-check-act" cycle of continuous improvement which, in the end is the best way to keep capacity building sustainable.

IDCB IN THE PROJECT DESIGN

164. Experience also shows that, while many projects recognize the importance of institutional development and capacity building, not enough attention has been given to these aspects in the past. This weakness stems from, among various reasons (i) the difficulty in deciding objectives and measuring the outcome of institutional development and capacity building activities (ii) difficulties in identifying appropriate changes (or "interventions") (iii) resistance to change of the current systems for delivery of services and of individual behavior and (iv) a lack of understanding of how best to undertake change management.

165. As noted, project preparation objectives therefore included the objective "to prepare institutional-development and capacity-building programs addressing sector reform and governance" (paragraph 1 of the PPTA Terms of Reference). The GoI and the ADB have

therefore agreed that commitment to reform and better governance of the water supply and sanitation sector are therefore fundamental to solving problems in the sector.

166. The problems are not exactly the same in each participating RG, but the general direction is similar. It is contended that many of the problems can be traced back to:

- inappropriate or no arrangements for involving all the key stakeholders – the so called "voice" (or "governance") problem;
- monopolistic service providers – or lack of competition in the sector – the so-called "choice" problem; and
- poor "structural" or "coordination" arrangements – for example locating activities in the wrong agency with respect to incentives (a classic one may be to expect a PDAM struggling to remain financially viable by selling water to finance from its own revenues the "public works" of sanitation).

167. Institutional development and capacity building activities are designed to begin removing the obstacles that these problems pose to the local governments so they can provide services which respond to the needs and expectations of all important stakeholders, are effective and efficient and are provided in a fair manner for all sections of the community.

THE MEANING OF IDCB, REFORM AND GOVERNANCE

168. As noted in Section 1, institutional development and capacity building programs are to help reform and improve governance. Experience shows it is important to have agreement on what these terms mean from the outset. Some definitions, common terms and abbreviations are given.

INSTITUTIONAL DEVELOPMENT

169. Definitions of institution and institutional development:

Institution: A system of rules and structures evolved to serve a purpose in society (UNDP – CAPBILD). "Institution" is an amorphous term because it has no limitation on scope. A drinking water supply system can be said to be an institution made up of many interrelated organizations such as the PDAM, Pemda, NGOs, community etc. Government itself is an institution comprised of political, legislative and executive parts.

Institutional development: The process of providing an institution (group of organizations or an organization) with the capabilities and the resources necessary for each to satisfactorily serve its purpose within the institution.

170. From this definition it should be obvious that just the PDAM or agency responsible for sanitation services alone does not comprise the "institution" of water supply and sanitation in local governments. The rules imposed by and behavior of local government executives and the DPRD obviously affect the ability of the PDAM or sanitation agency to perform. Institutional development therefore should include development (or reform) of all the components of the sector that affect performance.

CAPACITY BUILDING

171. Definitions of capacity and capacity building:

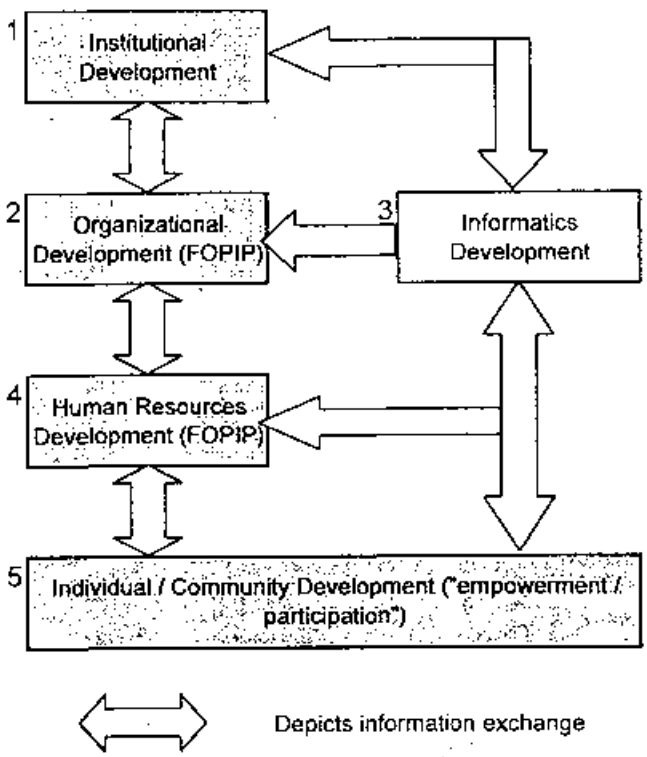
Capacity: The ability to realize stated objectives. It is both a process and an outcome. Capacity is always associated with 'performance'. Capacity is required at the system, organization, sector personnel and individual / community levels. Capacity is multi-dimensional, ever changing and difficult to measure. The understanding of capacity is limited because (i) link to performance not well understood (ii) what constitutes performance is in the eye of the beholder and (iii) the external environment strongly influences capacity.

Capacity building: a process that improves the ability of a system, organization, person or community to achieve stated objectives or to perform better.

172. An important distinction is between institutional development and capacity building. The capacity to deliver water supply and sanitation services depends not only on the PDAM or sanitation agency, but also on the institutional environment in which it operates, the

capacity of its human resources and the capacity of the individuals as well as the community to articulate their needs and expectations. Information systems link these four components. Figure 7 shows these five components. The institutional level consists of a collection of organizations.

Figure 7: Five Components of Capacity Building



173. Capacity-building therefore includes activities in all five components, and not just training of sector personnel, as is often assumed. Capacity building is often seen to subsume institutional development, which focus on activities rearranging the rules between the organizations (ie, at the institutional level and the boxes other than "Organizational Development" and "Human Resources Development").

174. Development of one component is unlikely to having any significant effect on efficiency and effectiveness of water or sanitation service delivery without some improvement in all the other components.

REFORM

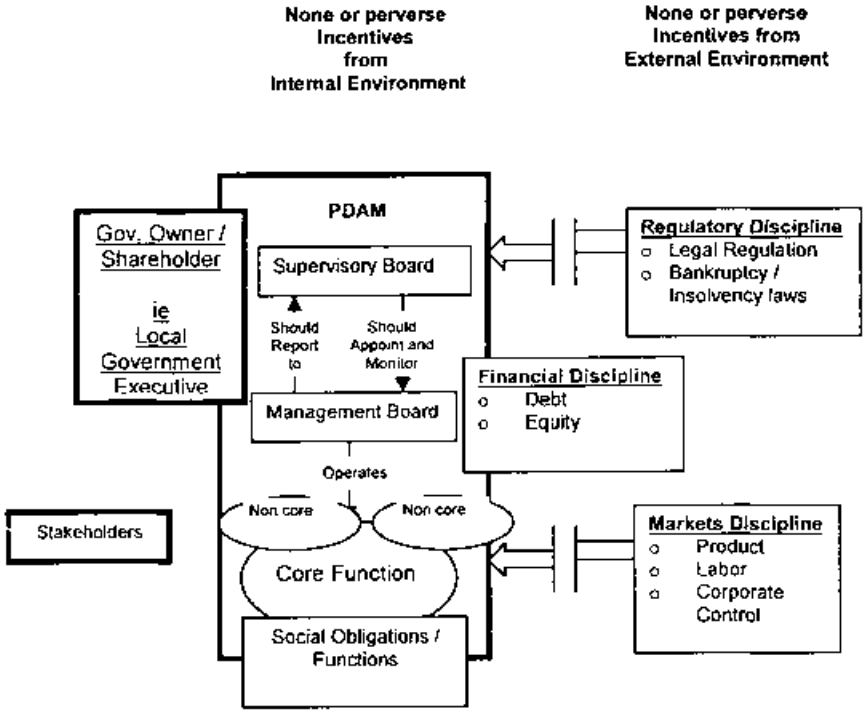
175. The WSSP targets local governments that are "committed to reform". What does "reform" mean in this context? Is it just "change" or "improvement", for example? In the context of the WSSP it is taken to mean "sector reform", which connotes changing the system of rules and structures, that is, the institution, which is obviously a major (and possibly not fully considered) commitment being made by the local governments.

176. Definition of "reform" in the context of the WSSP:

Reform: Institutional development to improve the rules by changing the relationships between the various organizations within the water supply and sanitation sector. Implies changes through re-structuring the relationships between organizations and their component units, more than change of individual behavior, through training for example.

177. The sector reform activities for the project aim to change the structure and clarify the rules and of the sector, and thus improve the incentives for better performance of the PDAM and other organizations. The current "structure" and consequent lack of clarity and incentives is depicted in Figure 8 for the case of a typical PDAM.

Figure 8: Current Confused Arrangements for Service Provision



178. The above Figure shows stylistically the current situation with respect to service providers. The generic problems include:

- The providers not only operate as monopolies but as policy-makers and regulators all in one – a case of acting both as "game-keeper and poacher";
- The providers operate under the direct command of the RG (and especially the Head of Region);
- Social obligations are mixed so badly with commercial objectives that it is difficult for the PDAM to know what it should concentrate on doing well;
- The managers (directors) act with little restraint other than that imposed by the Head of Region because the Board of Supervisors (BOS) is dysfunctional;
- Even if the BOS was in place, they would have difficulty governing the directors because of a lack of sensible strategic and annual work plans;
- Funding arrangements are so undisciplined that there is little incentive for the operators to seek efficiency; and
- Regulatory arrangements to impose standards and targets are non-existent.

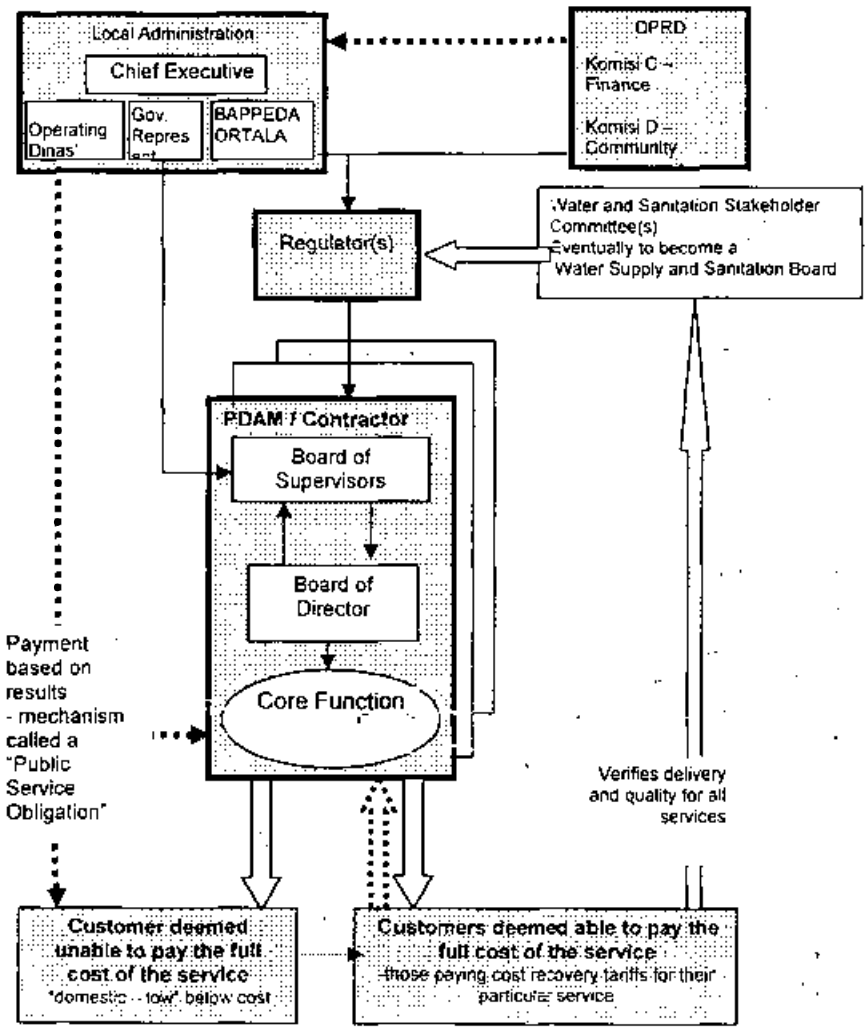
179. In the long–term, the water supply and sanitation providers should operate more as "contactors" – at least as autonomous bodies working in accordance with a "licence" or "contract" of sorts that sets out their authority and accountability, how they are paid, the consequences of failing to perform and how accountability will be enforced.

180. Behind these "hard" problems lay the "softer" ones related to:

- no planning or planning disconnected from budgeting
- information systems that do not provide the appropriate information;
- a legal and regulatory framework which does not improve predictability and enables enforcement, and ultimately,
- the ever present problem of enough competent and incentivized human resources.

181. Reform efforts should be designed to sort out the muddled relationships. The most important work in the long-term is for the water supply and sanitation providers to operate more as "contactors" – at least as autonomous bodies working in accordance with a "licence" or "contract" that sets out their authority and accountability, how they are paid, the consequences of failing to perform and how accountability will be enforced. Figure 9 shows the institutional set-up which is suggested should be the long-term aim of institutional development in the water supply and sanitation sector.

Figure 9 Sector Structure in the Future (Typical)



Note: 1. Broken lines represent financial considerations
2. The Water and Sanitation Stakeholder Committee are initially advisory but in time should acquire more authority

182. Key features of this reformed structure include:

- Separation of policy making, operations and regulation with overall responsibility for system design being returned to PEMDA;
- Funding designed to improve incentives to be efficient;
- Increased autonomy for the PDAM, but more accountability through clear roles and responsibilities for the Board of Supervisors and Directors.

183. The challenge is to ensure the reforms are successfully designed and implemented in the face of the resistance to change that can be expected of any reform. The "soft" factors need attention.

GOVERNANCE

184. Governance can refer in a wide sense to the system in place at the overall sector level for making important decisions that impact on all stakeholders, or it can be more narrowly focused on the governance of the service provider (say the PDAM for water supply) – in which case reform is to achieve "good corporate governance" On what "governance" is the WSSP focused, what is "good governance" and how is it measured?. It is especially important to attempt to measure it because, if it cannot be measured, it will be difficult to know whether the project is improving it.

185. Definition of governance:

Governance: The structures, processes and systems for decision–making, control, behavior and accountability at the top of a government, a sector, an organization or a corporation. The pillars of good governance are accountability, transparency, predictability and participation.

OBJECTIVES OF REFORM AND GOOD GOVERNANCE

186. The institutional development and capacity building component is designed to deliver the reform and better governance arrangements in the participating PDAMs and RGs. The specific dimensions of the desired "reform" and "governance" were not set out explicitly in the TOR for the project. In line with the spirit of the recently promulgated Government Regulation (PP) 16 of 2005 on drinking water supply systems and sanitation, the project is designed to make the PDAMs and RGs more:

- Responsive to stakeholder and customer needs;
- Effective (doing the right things);
- Efficient (doing things right); and
- Fair (equitable) in the provision of services at appropriate levels to the whole community.

187. The problem with these objectives however is they are abstract – they are strategic but they are "fuzzy", and so open to different interpretations. For example, the PDAM may believe they are already responding to stakeholder needs, whereas un-served households probably believe the PDAM is not responsive to their needs, moreover the RG is not fair in borrowing money "in the people's name" to fund PDAM expansion. The above "REEF" objectives are high level "outcomes" indicators in need explanation by agreement on more specific objectives.

188. These abstract objectives have been "operationalized" to be useful in guiding most participants in the design, implementation and evaluation of the institutional development and capacity building activities. They need to be turned into a set of measurements of the degree to which specific objectives have been attained - that is, of performance. Performance indicators will be used, against which baseline conditions and targets can be agreed. All project activities throughout the life of the project then should be justified in terms of how the activity helps the PDAM and RG achieve the targets.

SPECIFIC OBJECTIVES – IMPROVED EFFECTIVENESS AND EFFICIENCY

189. Performance with respect to effectiveness will be assessed as the difference between a target and actual achievement. Performance with respect to efficiency will be assessed as the cost of a certain function (operating the water supply system for example). But "performance" also means different things to different stakeholders. For example, those concerned with financial viability will focus on cost recovery and the like, customers and the community will be interested in service levels, technical oversight agencies will judge performance based on performance of functional tasks while personnel of the PDAM as well as third parties will judge performance based on their relationship with the PDAM. It is therefore important to have a balanced set of indicators, to serve the needs of a wide range of stakeholders.

190. Water supply: The Project Design and Monitoring Framework (PDMF) specifies that PDAM performance under the Project will be measured by the PERPAMSI set of 10 "primary" indicators. The baseline (current) values and the annual targets are different for each PDAM.

These indicators form part of the performance benchmarking system operated by PERPAMSI. A description of the Benchmarking System is included in the SPARs.

191. Sanitation: There is presently little or no agreement among key stakeholders of a set of performance indicators for the sanitation sector. The PDMF suggests a set of indicators based on the currently state of sanitation activities in most local governments. Definitions and baselines will be established in the first year of the Project for each participating RG as part of the "Project Design and Monitoring Framework" (PDMF/PPMS).

SPECIFIC OBJECTIVES – IMPROVED GOVERNANCE

192. Operational indicators for the two strategic objectives - of (i) responsiveness and (ii) fairness - are more difficult to define than for effectiveness and efficiency. In fact, operational definitions requires an assessment of the degree to which the PDAM and agencies responsible for sanitation are responding to community needs and are doing so fairly. Further, improved responsiveness and fairness are very closely related to the quality of governance, so that the project objective of improving governance in fact is an intermediate step to improved responsiveness and fairness.

193. Output indicators are difficult to determine for these objectives, and even more for governance. Measurement of inputs or process will be used instead, as "proxies". Also, because sanitation services are still so underdeveloped, no attempt will be made under the project to measure the degree to which responsiveness and fairness goals have been improved for sanitation. The challenge then is to measure the quality of "governance".

194. But governance of what – the sector as a whole or just the service delivery agency – the PDAM in the case of water supply?

B. IDCB APPROACH AND METHOD

195. The work performed in preparing the IDCB program was based on:

- Conduct of a survey of key local figures concerning their perceptions of institutional arrangements, current and into the future;
- A survey of up to 20 middle and upper level staff of the PDAM concerning the degree to which a series of best practices have been adopted by the PDAM, and the perceived importance of the practices for improving performance;
- Discussion with key personnel in local government; and
- Review of data and information collected.

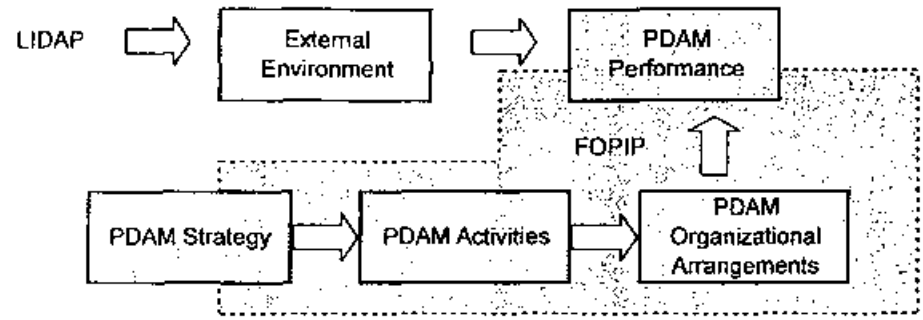
196. The proposed works under the project were then reviewed with respect to the implications of institutional development and capacity building and programs of activities outlined for the first year.

197. Annual review and use of the PDMF is expected to keep the program relevant as the project unfolds.

198. The IDCB component has been split into two parts, the "Local Institutional Development Action Plan" (LIDAP) and the "Financial and Operational Performance Improvement Plan" (FOPIP). This split has been made based on the past experience with such programs under IUIDP, where activities outside the PDAM were often overlooked because the PDAM were expected to manager a program which is beyond their capacity to control. In other words those managing the institutional development activities could not do their job properly because they had no control over the institutional environment.

199. Figure 10 outlines the scope of the two parts, the LIDAP and the FOPIP. Splitting the actions to improve performance into these two parts (internal and external) should ensure that clear responsibility for implementation can be assigned to both. Additional coordination is likely to be needed, but the split will ensure those with the power to change the institutional environment in which the PDAM operates are committed to reform. It is also clear that implementation of the Project should not be the sole responsibility of the PDAM.

Figure 10: Scope of IDCB – LIDAP and FOPIP



200. The approach to IDCB also includes making more use of performance measurement than most IDCB components of the past projects. This is based on the experience that capacity building / performance improvement activities need to have clear objectives if they are to be implemented efficiently and effectively. Performance indicators for the water supply and sanitation components have been established under the PDMF. IDCB should always help in the achievement of the targets to be set against these indicators.

C. IDCB WORK IN THE WATER SUPPLY SECTOR

201. The institutional development survey was distributed to each of the participating RGs on April 5 at the Inception Workshop. Then each of the 14 sub-project locations (except Maros) were visited by at least one IDCB expert for 4 to 5 days of research in the period mid April through mid June. During this visit discussion were held on water supply and sanitation matters, data collected and the FOPIP survey conducted among PDAM personnel. The following outlines the findings, conclusions and suggested IDCB program at the institutional (LIDAP) and PDAM levels (the FOPIP).

1. THE INSTITUTIONAL ENVIRONMENT ASSESSMENT

202. The review analyzed many of the aspects of Figure 7 and considered the LIDAP survey results. The institutional work (reported in an Institutional Environment Assessment - IEA – in Appendix A, Part I, Section 3 of each SPAR) for each location, covers:

- Institutional aspects, taken as being:
  - the various organizations comprising the main actors in the sector
  - how the sector operates overall as an "accountable" or "sustainable" system
  - the structural features outlined in Figure 9
  - the management and flow of information; and
  - the high level human resources needed in the sector.
- Legal Aspects
  - covering gaps an inconsistencies in the local and national legal framework; and
- An outline of LIDAP activities with respect to water supply, consisting of
  - long and short lists of performance improvement actions
  - the most likely "entry points" into institutional reform / change that the survey revealed (see Attachments 1 and 2 of each SPAR for the questionnaire and the analysis)
  - approximate costs; and
  - approximate sequencing of activities.

203. Each section of the Institutional Environment Assessment noted above ends with a long-list of improvement actions indicated by the assessment.

2. WATER SUPPLY - FINDINGS WITH RESPECT TO INSTITUTIONAL ASPECTS

204. In all locations it was found that the PDAM was acting effectively as policy-maker, regulator, provider and many other roles, such as custodian of public assets. There are obvious conflicts of interest. Little influence is exerted by the three agencies which could be expected to act as a check on PDAM activities - Sekda, BAPPEDA and BAWASDA. The Supervisory Board (Badan Pengawas) in most places is also ineffective, and regulatory activity by the Health Service over poor water quality is not present.

205. In fact, the problems signaled by Figure 8 were all present: These included:

- Conflict between commercial and social objectives: Social obligations / objectives forced on the PDAM of providing a low cost water supply (and even a source of employment) are so mixed with commercial objectives of supporting government income generation that it is difficult for the PDAM to know what it should concentrate on doing well; in this situation it is difficult for the PDAM to prioritize use of resources, internal cross-subsidies destroy incentives to be efficient and accountability of managers is reduced;
- Funding arrangements are undisciplined so that there is little incentive for the PDAM operators to seek efficiency. Water services are not valued properly, they have not yet be "commercialized". Further, the "equity" providers (all levels of government) are not consistent in requiring efficient operation; debt financing is often provided by central government to un-creditworthy PDAMs and "equity does not guard debt". Funding of PDAMs needs to discipline PDAMs to be more efficient by paying for results / outputs, not inputs;
- The PDAMs do not have enough autonomy from the local government executive (which is the owner / sole shareholder). Owners and managers are not separated enough. Without sufficient autonomy over management of finances and human resources, the PDAMs do not have the incentives or flexibility to respond to community demands. The relationship between the PDAM and owner needs to be put "at arms-length" ,especially by appointment of suitable representative of the owner;
- On the other hand, the PDAMs not only operate as a monopoly provider but also as a policy-maker and regulator all in one – a case of acting both as "game-keeper and poacher". The owner (the community) represented by the local government often does not have enough information because of "asymmetries of information" in this situation. The system of service delivery generally is incomplete in this situation because decisions are often made not so much as in the public interest but more in the interests of the PDAM. The sector structure is not good;
- Stakeholder influence / discipline is insufficient (many say entirely absent) because the chain of accountability through the Walikota / Bupati / or DPRD is too long; there are no mechanisms for participation of the community (including un-served households and particular groups such as women) in decisions about service by the PDAM;
- The managers (that is, Directors) act with little restraint other than that imposed by the Head of Region because most Board of Supervisors (BOS) are dysfunctional. The BOS has no direct authority over the Directors;
- Even if the BOS was in place and empowered, they would have difficulty governing the Board of Directors because of asymmetries of information and lack of a sensible strategic and annual work plans. The basic instrument for ensuring accountability, the Corporate or Strategic Plan, does not have enough, if any, specific, measurable, accessible, relevant and timely performance indicators to be of use;
- The Directors (the Management board) should concentrate on improving the performance of the PDAM but often lack the correct competencies, and in spend too much time on matters which are not core functions of the PDAM;

- Regulatory arrangements to impose performance standards and targets are non-existent. There is no penalty for providing insufficient or poor quality water, or an interrupted supply. There are no penalties or significant consequences to low efficiency, or even bankruptcy or trading while insolvent;
- Market forces which discipline the private sector to be efficient are absent. Discipline to be efficient is lowered because few others can produce piped water (because of the monopoly) Competition is low. The PDAM does not have to compete for labor because unemployment in the community is high. Low efficiency of the PDAM does not result in control passing to a more efficient organization, as the mechanism of corporate control allows in the private sector. Why be disciplined and efficient if you have a monopoly and there are no consequences of inefficient operation?

206. Management of information and planning practices were also found to be poor. Little relevant information is disseminated to stakeholders, and the use of performance indicators to transmit succinctly information is rare. The sector planning processes are weak, with a rudimentary or non-existent planning – budgeting cycle that pays little heed to assessing and incorporating stakeholder needs and expectations. Most of the PDAM have a strategic plan (called a Corporate Plan), but it is not relevant to the local environment, contains not meaningful performance measures and is not used at all to guide the activities of the PDAM. Meaningful Development Master Plans are also universally absent. The coordination and accountability that plans and planning should bring is largely absent.

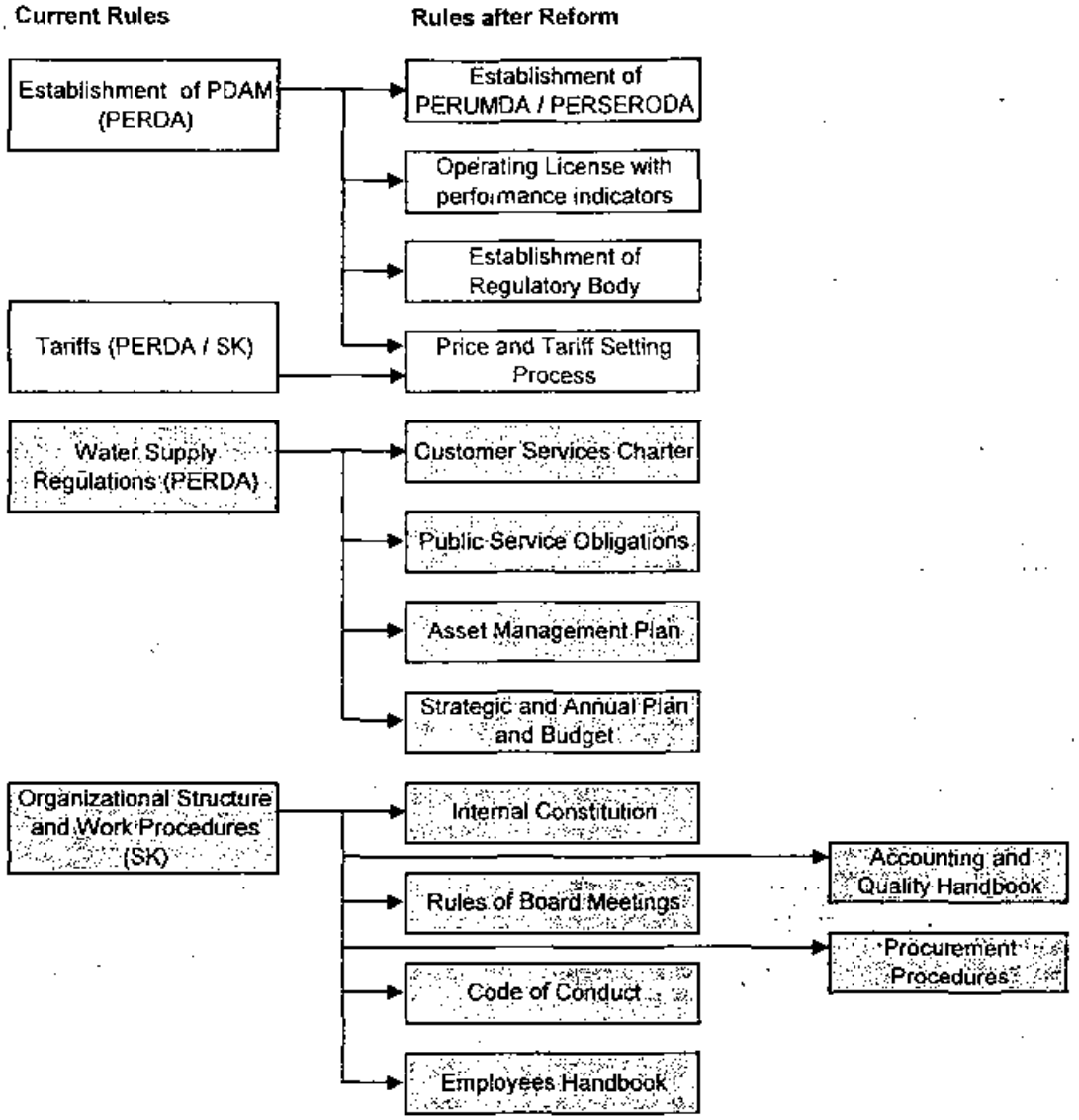
207. The number of capable persons to effectively manage a structured sector is perhaps not more than 30 people. However, at present there is no agency responsible for either effectiveness of the sector (as opposed to effectiveness of the PDAM), and no agency taking responsibility for developing the key human resources. It is a classic problem of where to place the "machinery of government" review function. It appears that BAPPEDA should be empowered to oversee sector structure, while the Regional Civil Service Board (Badan Kepegawaian Daerah) or the ORTALA bureau within SEKDA given the responsibility of developing sector human resources.

3. WATER SUPPLY - FINDINGS WITH RESPECT TO LEGAL FRAMEWORK

208. The assessment of the national and local legal framework was necessarily brief. From the PDAMs records it is clear that many are not aware of or do not try to comply with the provisions of the multitude of rules issued by central government. Compliance with regulations relating to tariff structure, composition of Board of Supervisors, reporting of performance and maintenance of water quality standards are examples of regulations which are ignored. The sheer number of rules, the gaps and the overlaps all contribute to an environment in which there appear to be a surplus of formal rules but in fact rules (formal or informal) which are complied with are few.

209. Figure 11 was used to assess the value of local law and regulations. The Figure shows the local laws and regulations expected once the sector is "unpacked" as in the ideal future structure. Local rules and regulations in most locations are not complete.

Figure 11: Reform of Local Laws and Regulations



210. The main problem is that rules are not performance oriented, are not accepted as binding and are not enforced. They do not describe the level of service the PDAM must provide nor the consequences if this prescribed level, or standards, are not achieved. They do not provide a basis on which the PDAM can be held accountable, without which the sustainability of the service will always be questionable.

D. IDCB WORK IN THE SANITATION SECTOR

1. THE INSTITUTIONAL ENVIRONMENT ASSESSMENT

BACKGROUND

211. Work for the Institutional Environment Assessment in the sanitation sector was similar to that done for water supply and is reported in (see Part 1, Section 4, of Appendix A of each SPAR). The Sanitation Assessment is structured similarly, consisting of (after an opening explanation of the range of sanitation activities, the differences with water supply and the current state of sanitation):

- Institutional Aspects
    - identification of the key agencies

- an assessment of the overall system for (sustainable) sanitation provision, including
  - the policy making institutions
  - how resources are allocated
  - modes of services
  - regulatory activities with respect to inputs, performance and accountability;
- sector structure (to what degree it fits with an ideal structure)
- information management and planning; and
- human resources

- Legal aspects
  - covering gaps an inconsistencies in the local and national legal framework; and
- An outline of LIDAP activities with respect to sanitation, consisting of
  - long and short lists of performance improvement actions
  - the most likely "entry points" into institutional reform / change that the survey revealed (see Attachments 1 and 2 of each SPAR for the questionnaire and the analysis)
  - approximate costs (combined with water supply); and
  - approximate sequencing of activities (combined with water supply).

212. The data on which the assessment is based, however, are much less because not one of the RGs has a firmly established agency whose main duties and functions are to provide a complete range of sanitation solutions to the community. Each section of the Institutional Environment Assessment noted above ends with a long-list of improvement actions indicated by the assessment.

CURRENT SITUATION

213. Sanitation under the project is defined as human waste and wastewater disposal. Drainage and solid wastes are included in the Indonesian Government's definition of the "environmental sanitation service sector", but not in WSSP.

214. Sanitation services are perceived differently compared with other services, especially water supply. Sanitation services have been neglected in the participating RGs, perhaps because of its characteristics, which include:

- The scope of "sanitation" is often difficult to define and measure: "good sanitation" involves both human behavior to ensure waste is not ingested before collection, as well as a range of infrastructure to safely collect and treat waste.
- The subject is often taboo, "something women are concerned with, but not the real decisions makers of the community"
- People do not recognize they, as well as everyone else, contribute to the problem (and so see the problems associated with poor sanitation as someone else's fault and therefore a problem to be solved at someone else's cost)
- Disposal services consist of "collection" rather than "production", so people do not associate a "value" with the service;
- The infrastructure is often below ground and "invisible", leading to the syndrome of "out of sight, out of mind";
- Improved sanitation causes people to discount (forget) the poor conditions before their service was improved; and

- Applying sanctions is difficult for non-payment for use of public space (the "environment") to dispose of one's waste, or for non-compliance with rules on disposal.

215. Sanitation services are perceived as "public goods" – people have a low willingness to pay for them because the cost of inaction is often carried by someone else and, having paid to dispose of the waste, the person cannot stop others enjoying the benefits. It is a service with high "external costs", and so something public funds should be used to pay for in the absence of, or until development of a willingness of private parties to pay.

216. Physical range of components of sanitation services looked for during the field work included:

- Individual and shared toilet facilities for existing and developing private dwellings, with on-site disposal
- Community ablution facilities for existing and developing individual dwellings, with on site disposal;
- Public ablution facilities for public places (schools, markets etc) with on-site disposal;
- Septage (human waste) collection and disposal and / or control of private services providers
- Operation of septage disposal facilities
- Piped sewerage systems and off-site sewage treatment facilities to all the above;
- Capture, storage and dissemination of data, information and knowledge on sanitation services and facilities; and
- Enforcing regulations or providing incentives to effect better sanitation practices.

217. Sustained delivery of the above services depends upon a "sustainable service delivery system" being established. The elements of that system are founded on "institutions" – a set of formal and informal rules of behavior binding the stakeholders. Wide agreement on roles is important in this regard.

218. In order to create and sustain an ever-improving system for sanitation; the Government needs to assign roles, authority and accountability to various agencies and groups to establish these institutions. The following main roles or "functions" should be handled in some way:

- Policy maker
- Standard setter
- Funder / resource provider
- Human resource developer
- Facilitator of public participation
- Employer
- Provider of facilities and infrastructure
- Owner of facilities and infrastructure
- Provider of information
- Monitor of the system performance
- Regulator
- Enforcer

219. This list is probably not definitive. For this assessment, it is shortened to a commonly accepted breakdown of (i) policy-maker (ii) funder (iii) implementer and (iv) regulator, in line with the "ideal sector structure" for water supply. As noted, clarity in allocation of authority and accountability among local government agencies with respect to performing these

functions or roles is a starting point for improved performance of sanitation services. With this objective in mind, the ability to complete the following matrix should be an important objective of institutional development activities under the WSSP.

Figure 12: Assignment of Sanitation Sector Activities

Activities	Organization to which has been assigned the role / function of:			
	Policy-maker	Funder	Implementer	Regulator
Private individual plots and shared on-site disposal	Not clear	Private individuals	Private contractors	Not clear
Community managed "on-site" disposal	Not clear	Community	Not clear	Not clear
Public managed facilities to public places	RG	RG	DPU	Not clear
Desludging of septage from all on-site facilities	RG	Cost recovery	DPU, Dinas Kebersihan	DPU or Dinas Kebersihan
Treatment of septage off-site	Not clear	Not clear	DPU or Dinas Kebersihan	Not clear
Sewerage Systems (off-site treatment)	Not clear	Not clear	Dinas PU	Not clear
Data, information and knowledge management	Not clear	Not clear	Not clear	Not clear
Enforcement of regulations / standards	Not clear	Not clear	Not clear	Not clear

220. The project preparation study was unable to identify any significant activity of government in any of the eight activities, be it in one or more of the four roles, other than some involvement in desludging – and in the case of Serang, preparations for constructing a sludge treatment plant (an IPLT). Perhaps the best that can be said is the that the policy is "Not to have a sanitation policy"

221. There are no schemes (financial or technically oriented) available to help households build satisfactory disposal facilities. The condition of ablution facilities in schools is said by some government officers to be unsatisfactory. There are no sewerage systems. Disposal of domestic waste to the environment is not controlled in any meaningful way. The building permit system should regulate the quality of on-site disposal facilities, but weak standard setting and enforcement negates the effectiveness of this activity.

222. None of the governments operate any central treatment facilities. Most locations have no sludge treatment plant (IPLT), with private-operated sludge vacuum trucks said to be disposing of waste directly to various water courses in the area.

Performance And Trends In The Sector

223. There are no widely accepted indicators of performance of the sanitation sector. Not one of the RGs could offer a quantitative assessment of community access to improved sanitation facilities, how much public money was being spent on sanitation, technical indicators of treatment, nor spending to improve human resources in the sector. A baseline or trends in sector performance therefore cannot be detected. Without these measures it is difficult to identify performance improvement actions in a logical manner. In the absence of agreed indicators, the following table provides suggestions.

Table 18: Suggested Indicators of Performance of the Sanitation Sector

	Performance Perspective		Description
I	**Community Perspective**		
1	Incidence of Diarrhea	%	Preferably measured for children less than 5 years of age, and recalled incidence in the last 2 weeks
2	Access to improved HH sanitation	%	BPS considers this to be the % of total population who regularly use (i) a "Jamban keluarga (Jaga)" (sealed-flush toilet) or (ii) a "Jamban Jamak" or "Jamban Umm" (a communal or a public toilet)
3	Improved disposal of HH waste	%	BPS considers this to be % of total population who regularly dispose of their waste through (i) "Cublik" (a unlined pit) or (ii) a septic tank (no distinction is made as to whether there is or not an overflow from the tank to a "resapan" (leaching drain) or open drain.
II	**Financial Perspective**		
4	Cost recovery ratio of existing public-provided facilities	%	Actual O&M funds received / needed O&M funds. Received includes from APBN/D as well as directly from "retribusi".
5	Annual Increase in Sanitation Budget	%	Total budget in the year to provide services under one or more of the 8 sanitation sector activities of all agencies (central, provincial and local) within the project area, divided by last year's budget. Training costs included only for local personnel.
III	**Operational Indicators**		
6	Disposal capacity	%	Actual desludging capacity (m3 /day) / required desludging capacity.
7	Treatment Efficiency	%	% of effluent tested not meeting the required discharge standard.
8	Water quality in rivers	%	% of tests in the year not meeting ambient standards.
IV	**Personnel Indicators**		
9	Training Budget	%	Expenditure of local government on training staff in sanitation matters as a % of the total sanitation budgets

Note: The values for each indicator will be determined for each location during the first 12 months of the Project and targets set thereafter for 2011.

2. SANITATION – FINDINGS WITH RESPECT TO THE INSTITUTIONAL ASPECTS

RESPONSIBLE AGENCIES

224. Since decentralization, each local administration has been free to structure their service delivery agencies in the manner they see best suited to local conditions. If sanitation is not perceived as important, there is unlikely to be a dedicated agency. Therefore, in each location, sanitation responsibilities are found spread across a range of agencies – typically those dealing with public works, building development and control, settlements and even solid waste management services. Importantly, not one is dedicated to providing human waste management services but, rather, have had the task "tacked" onto a primary service. This is hardly a formulae for success, given the agencies are generally struggling even to fulfill their primary function. There clearly is a need to appoint a "lead sanitation agency", then to fund it sufficiently to, in the first instance, develop some rudimentary policies and programs in the sector, perhaps starting with a clearer assignment of duties between agencies.

A SUSTAINABLE (I.E. ACCOUNTABLE) SYSTEM FOR SERVICE DELIVERY?

225. Part of the problem on demand is clearly lack of a mechanism for the whole community to express its opinion on needs. Stakeholder committees, let alone water and sanitation boards or their equivalent are not present. In some RGs, such as Bogor, an NGO with an interest in the subject was identified, but without the means of pressuring the administration to alter its policy on sanitation. Encouragement of much greater community participation is indicated.

226. From the perspective of resources being made available, cost recovery appears to not being attempted at all, and public funds being allocated are very small, or mostly nothing. With such a low level of resourcing, it is difficult to expect existing agencies to "perform", especially when their mandates are so unclear. Those agencies actually providing a service typically operate one or just a few vacuum trucks. Agencies responsible for regulating or monitoring polluting activities are mostly not interested in domestic waste, and minimum service standards "suggested" by the Ministry of Public Works in 2001 are practically unknown in local government. Action is indicated in the setting of service standards among the agencies and to their enforcement.

227. Enforcement of rules pertaining to pollution control, and especially waste emanating from domestic settlements, is lax. Building regulations, which should be the first point at which household disposal is regulated, are largely not enforced. "Greenfield" settlement sites are thus building up a huge backlog of sanitation problems to burden the government in the future. Of particular note is the role of the "Environmental Office" (KLH) in many locations. Many have a conflict of interest in that they are involved in licensing various disposal operations, which must lessen their incentive to act as independent "enforcers" of pollution laws.

228. The structure of the sector is thus even more problematic than water supply. So, while the same principles apply as with the water supply sector, the separation of policymaking, regulatory and implementing roles is even less clear, with a consequent lessening of accountability by any one agency. Without this accountability it will be difficult to provide in a sustainable manner the range of sanitation services needed.

Information And Planning

229. The lack of performance oriented information is striking, but perhaps symptomatic of the under-developed nature of the sector. Without information in the community about sanitary conditions and their impact, it is not surprising that demand for sanitation services appears suppressed. Development of the indictor system previously suggested would begin to obviate this problem.

230. Some of the RGs have had Master Plans prepared for them over the years, but not one RG has a plan which is operational. The newly released PP 16 / 2005 required that integrated water supply and sanitation strategic plans be developed, to ensure that the large investments required are effective and efficient. Action by BAPPEDA to lead development of a "city-wide strategic sanitation development plan" is indicated.

Sector Level Human Resources

231. The water supply and sanitation sectors probably belong together, although roles may be taken by different players. For example, the PDAM may deliver water supply services, while another operator provides waste treatment services, all under the same "regulator" and policy makers. At this level however, many will be involved in both water supply and sanitation matters. Action to provide and train a cadre of competent senior persons capable of managing the sector is indicated. This includes members of the Stakeholder Committee.

3. Sanitation – Findings with Respect to Legal Framework

232. Uncertainty is the order of the day in water supply, and so, even worse in matters of human waste disposal. There are many central laws and regulations "on the books", but there appear to be so many gaps and overlaps that they are effectively ignored. PP 16/2005 does not handle sanitation in detail. There appears to be a gap in the pollution regulation with respect to human waste. Consolidation of a range of regulations into a dedicated sanitation law or PP is indicated, along with preparation of model PERDA(s) which could be adopted by the local administrations.

233. There is very little in the way of local legal infrastructure for sanitation, although in theory, it should be similar to water supply, in terms of assigning functions unambiguously, describing community rights to service, being performance oriented and providing for meaningful enforcement. Unlike the central framework which has a confusing array of laws

and regulations, the local framework at present is threadbare because enough rules specific to local needs have not been agreed. Crucially, a regulation stipulating the roles of stakeholders and how the sanitation sector should be constituted and governed is not present. To talk of "good governance" is difficult in these circumstances. The rules in four fundamental areas for reform are needed:

- stakeholders need a way to participate in decision making
- sanitation services should be paid for – even if low income households are subsidized
- a "lead agency" agreed that is trusted by the stakeholders; and
- geographical scope for sanitation services is established to improve planning and accountability.

234. No local rules exist with respect to the involvement of the private sector. Reform can also begin of rules with respect to specific administrative matters required to govern the autonomous implementing agencies as they evolve.

235. The imposition of sanctions for failing to meet standards has never happened. While there is no threat of sanctions, the incentives to improve performance are weak. Reasons include (i) the standards have not been agreed (ii) but there is wide agreement that the resources allocated are just not enough to enable the responsible agency to do enough to ensure environmental standards are met (iii) performance information has not been widely disseminated, if it is at all available, and (iv) the sanitation agencies are both implementer and regulator.

E. SECTOR REFORM ACTIONS

236. Based on the Institutional Environment Assessment for both water supply and for sanitation, detailed lists of indicated actions have been prepared (see Appendix B of the SPARs). These lists are largely in the order that the IEA discuss the issue, although some adjustments in headings have been made to provide a similar structure for both water supply and sanitation.

1. WATER SUPPLY LIST

237. Institutional development actions are suggested which will move the structure of the sector towards the "ideal" (or "unpacked") sector structure described earlier. However, actions must take cognizance of the resistance which will certainly be encountered to change from various places within the current system (this is discussed with respect to the LIDAP Survey results). It is therefore important to ensure that leadership is provided. For this reason the first year's activities are designed to ensure the Stakeholder Committee is established and functioning, that PEMDA provide the inter-agency planning and coordinating team (TKPP), and the PDAM establishes an Internal Performance Improvement Team. Table 19 summarizes the long list for water supply.

238. Preparation of plans required by PP 16/ 2005 should be done in the first year initially under the guidance of BAPPEDA. but with increasing participation of the Stakeholder Committee.

2. THE SURVEY RESULT AND SEQUENCING

239. An Institutional Environmental Assessment deals, even under the best of circumstances, with both written ands unwritten rules, behaviors, and perceptions, all of which are quite abstract concepts, although that does not lessen the impact on sector performance of such matters. The LIDAP survey was therefore conducted among the top level local government management in most of the RGs, keeping with the need to base IDCB work as much as possible on fact. The survey also served to open a dialogue with key decision-makers in the RG, and to introduce to them concepts of reform, good governance and the likely conditions under which the WSSP loan would be extended to them.

240. The LIDAP questionnaire is shown at Attachment C of Part I in Appendix A of each SPAR. The questionnaire probed under seven headings local perceptions with respect to the

likely critical success factors for reforming the water and sanitation sector, both in terms of sector structure (again, the move to the "ideal structure") as well as implementation issues.

Table 19: List of Actions for Institutional Development in Water Supply and Priorities

1 Mobilize Leadership and Communicate Action Plan

(i) Establish a water supply and sanitation stakeholder advisory committee.
(ii) Establish the TKKP for overseeing the WSSP, including its non-physical components
(iii) Establish the Performance Improvement Team in the PDAM.
(iv) Disseminate information on the WSSP objectives widely within local government.

2 Clarify the Overall System for Sustainable Service Delivery

2.1 Clarify Who Determines Policy or Intent of the Local Government
2.2 Improve the Sector Planning Process
2.3 Improve the Sector Structure
2.4 Improve Relationship with Local Government
(v) Bupati to appoint a representative with decision making power to perform government administration matters associated with (profitable) ownership of the PDAM
(vi) concentrate this activity on ownership functions – corporate planning, asset management, profitability planning, performance of Boards etc
(vii) ensure the representative is not formally responsible for sector policy making
(viii) ensure the representative is not responsible for pricing water and licensing the PDAM activities and
(ix) is not in a position to agree or provide "soft" government funds – ie, is not the Sekda or BAPPEDA head so as to avoid a conflict of interest between his main role of achieving efficiency by imposing hard budget constraints on the PDAM.

3 Improve Resource Acquisition and Allocation

3.1 Makes better rules for tariff setting
(i) Agree in a PERDA a process for tariff increases, automatically adjusted for inflation
(ii) agree basic service levels that will be re-negotiated with PDAM every 5 years in an approved Corporate / Strategic Plan
(iii) agree in a PERDA the rules for equity injections and dividend payments and
(iv) establish formal coordination mechanisms between agencies based on the Strategic / Corporate Plan.
3.2 Increase Commercialization
(i) in the establishment PERDA for the PDAM, specify cost recovery & efficiency in the sector as objectives
(ii) in the "Tariff PERDA", specify the tariff adjustment process and the criteria for structuring and the level of tariff
(iii) allow automatic adjustment every 6 months to 1 year, with re-basing overseen by the Regulator every 5 years
(iv) formalize the PSO subsidy payment mechanism.

4 Increase and Improve Means of Service Delivery

4.1 Focus on Results
4.2 Introduce Performance Management of the PDAM
(i) Develop a performance contract between the PDAM and PEMDA, or a "license" or "permit to operate" system
(ii) assign responsibility to administer the contract / license / permit to a small independent agency
(iii) improve the corporate plan, especially indicators and targets
(iv) join the PERPAMSI benchmarking system or similar so as to provide independent information on levels of performance of peers
(v) establish a rewards and punishment scheme
(vi) train personnel of the independent administrator / regulator.
4.3 Increase Autonomy of PDAM / Operator
4.4 Improve Performance of the Board of Supervisors
4.5 Improve Performance of Board of Directors

5 Information Management and Planning

5.1 Information Generation and Management
5.2 Improve Planning Process, Content and Quality

6 Increase Accountability

6.1 External Regulation of Input and Performance Standards
6.2 Improve Compliance with Local Legal Instruments
6.3 Improve Legal Certainty and Enforcement
6.4 Improve Implementation of Water Quality Standards
6.5 Increased Certainty of Access
6.6 Overcome gaps and other problems with national level legal instruments
6.6 Overcome gaps and other problems with local level legal instruments

7 Upgrade Set of Local Legal Instruments

8 Improve Human Resources Development at Sector level

8.1 HRD plan based on Sector Development Plan

241. The seven headings were:

1 Proposed project(s) and their overall benefits
2 Current Institutional set-up
3 Perception of PDAM services
4 Perception of sanction services
5 Proposed activities under WSSP
5.1 Water supply
5.2 Sanitation
5.3 Institutional development / good governance
5.4 PemDa financial capacity /credit enhancement
6 Project Implementation
6.1 Establishment
6.2 Planning and design
6.3 Implementation- Financial management
6.4 Implementation - Physical
6.5 Monitoring and performance management
7 Suggestions on how to make the Project a success

242. Most of the questions used a perception scale of 1 to 6; the higher the scale was marked, the more the local perception agreed with the consultant's assessment of local conditions or the factors likely to make the project a success. The lower the marking, the more likely it is that local perceptions differ from the consultants, and thus represent areas of action or reform in which resistance is expected. The results for one RG (with some re-grouping of the answers to produce 10 areas / categories), which is typical for the others, is shown in Table 3. The top three area where perceptions differed most strongly concern:

1. The impact of building PemDa financial capacity
2. The current performance of the PDAM; and
3. The impact of institutional reform

243. The main observations concerning these top three ranking categories are:

- It is widely agreed that PEMDA finances (Category 6) would be a difficult area for the project to improve, and so probably not an area the project should attempt to intervene in.
- PDAM performance (Category 2) is an area that perceptions varied. The resistance rating in this category is not of concern, other than to highlight the diversity of perceptions on performance and the need to measure performance (say using the PERPAMSI Benchmarking System). The framing of questions in this category probably influenced the result.
- The institutional development / good governance aspects (Category 5) scored as the third most likely category where differing perceptions are likely. This is noteworthy in connection with Project design.

Table 20: Entry Points based on Expected Resistance to Change

	Institutional audit category	Scores			
		Perform	Importance	Gap	Resistance
1	Overall benefits of WSSP	3.94	4.57	0.63	10
2	Current PDAM performance	2.88	5.38	2.51	2
3	Current sanitation performance	3.80	5.40	1.60	6
4	WSSP physical activities	3.60	5.83	2.23	4
5	WSSP institutional activities	3.67	5.93	2.26	3
6	PemDa financial management	3.48	6.00	2.53	1
7	Project preparation - governance	4.21	6.00	1.79	5
8	Managing finances	4.40	6.00	1.60	7
9	Physical implementation	4.50	6.00	1.50	8
10	Performance monitoring	4.73	6.00	1.28	9

Note
1. Based on analysis of 5 of 5 questionnaires
2. Perform = current degree to practice has been adopted, according to respondent's perceptions
3. Importnce = degree of importance placed on the practice by the consultant

4. Gap = difference between degree of adoption and importance
5. Resistance = Expected degree of resistance to change in the category identified based on gap (1 = highest priority)
6. Resistance "1" is the category of practice that presently has the greatest need for action to establishment

244. The varying perceptions on the usefulness of institutional development / good governance interventions highlight, among other matters, the need for central government to disseminate its intentions on improving sector governance, starting with explanations of the practices and behaviors that comprise good governance in the sector. The support for establishment of the Project Performance Monitoring System (PPMS) probed in the questions in Category 10, was acknowledged by respondents as important, particularly by those outside the PDAM. In general, it is accepted this system needs funding and assistance provided to RGs. The proposal to institute an annual cycle of "plan do, check, act" based on the targets to be set in the strategic / corporate plan appears well supported.

245. Various other institutional arrangements and practices that were expected to be perceived as important for improved performance of the sector were ranked lowly by the respondents. Table 21 shows on the right a selection of 13 practices which the consultants believe should be adopted or problems overcome, and (in the last column), the ranking according to the respondents. Of the practices or problems, only benchmarking of performance was acknowledged as being important to success of the project. Information dissemination activities in the first year need to change perceptions

Table 21: Perceived Need for Change of Key Practices / Problems

Practice	Category	Priority for action, all categories		
		nr	Practice	Rank
15	2. Current PDAM performance	15	Water losses are too high	46
19	2. Current PDAM performance	19	Better performance be benchmarked	9
27	4. WSSP physical activities	27	At least 50% of those will be LIHHs	99
33	4. WSSP physical activities	33	Investment (physical and non)-will improve PDAM performance	86
34	4. WSSP physical activities	34	Sensible if up to 25% investment in non-physical	22
44	5. WSSP institutional activities	44	Name 5 actions to improve governance of PDAM	53
60	5. WSSP institutional activities	60	PDAM has a corporate plan with indicators	127
63	5. WSSP institutional activities	63	PDAM concerned about efficiency, and should recover all costs	105
67	5. WSSP institutional activities	67	Directors recruited from anywhere based on performance	53
68	5. WSSP institutional activities	68	Promotions are subject to certificates of accreditation	36
72	5. WSSP institutional activities	72	Annual performance of PDAM is publicly reported.	108
127	10. Performance monitoring	127	Supervisors will use baseline targets	86
134	10. Performance monitoring	134	Stake. Committee has active monitoring role	53

246. Table 5 summarizes the results of the institutional reform category (5) of the survey. The summary suggests the entry points within this category as being:

- increased resources through higher tariffs and commercialization in general of water supply
- introduction of performance management tools for and in the PDAM, and
- improvement in the relationship between PDAM with government.

Table 22: Suggested "Entry Points" for Institutional Development – Water Supply

No.	Institutional practice category	Mean score		Gap	Rank of entry point
		Agree	Ideal		
1	Overall sector structure	3.89	5.86	1.97	4
2	Degree of commercialization	4.60	6.00	1.40	1
3	Degree of autonomy / corporatization	3.49	6.00	2.51	5
4	Objectivity of government representatives	3.40	6.00	2.60	7
5	Independence and capacity of oversight board	2.91	6.00	3.09	9
6	Capacity of directors / managers	4.25	6.00	1.75	3
7	Performance management	4.53	6.00	1.47	2
8	Introduction of private sector skills	3.00	6.00	3.00	8
9	Miscellaneous	3.07	5.67	2.60	6

Notes:
1. See preceding table for practices within each category.
2. Suggested entry point is category with smallest gap.
3. Gap is difference between mean score and ideal score.
4. It is assumed that the entry point for institutional development is best where there is most agreement or least resistance.

247. The results of the survey are predictable in many aspects. Persons associated with the PDAM tend to agree that more autonomy is needed to improve performance, but that accountability is not an issue. Those outside the PDAM see the need to raise accountability as a prerequisite to more autonomy.

248. The specific practices that comprise these three priority categories, plus the others in the category, are shown in Table 21.

3. SANITATION ACTION LIST

249. Each section in the IEA for sanitation ended with a list of indicative actions. These have been consolidated at Attachment 2 (part 2) in Appendix A of each SPAR and summarized under eight sets of activities in Table 24. The first set contains the leadership aspects similar to the water supply list and ensures the Local Institutional Development Action Plan (LIDAP) has a proper means of implementation.

250. There are numerous actions indicated under each set of activities (see Attachment 2.2). Are all sets of activities needed, which ones are priority and in what sequence should they be implemented?

251. Logic suggests the institutional development activities most influential in delivering the project objectives should be addressed first. Experience suggests that all the 8 sets (see Attachment 2.2) will be needed in time to significantly improve performance of the water supply and sanitation sector. How much is done under the project depends on political desirability, feasibility, and resourcing, among other factors.

252. Unlike for water supply, the Institutional Development Survey did not probe in detail acceptable sanitation arrangements, so all that can be said at present is that institutional development activities should address holistically the main points under each group by the end of the Project.

253. Two points from the survey are:

- The respondents generally agreed with the consultants that sanitation sector performance as not good (see Questions 21 to 25); and
- The survey highlighted some negative perceptions concerning the Stakeholder Committee. While there was moderate agreement that the Committee would be useful (Question 93), there was much less agreement that the Committee should play an on-going monitoring role (Question 134). This response perhaps is not unexpected, considering the mainly bureaucratic background of the respondents.

254. As pointed out in the water supply assessment, institutional development requires changes to the existing organizations in the local government, to systems and the "rules" – the way things are done – both formally and informally. It probably will be resisted by

sections of the government for this reason. It may therefore be best to start (to "enter") where there is wide agreement on the need to change. Again, the Institutional Development Survey conducted among important decision-makers in each participating local government could have provided some guidance on sequencing of sanitation interventions, but not enough questions on sanitation were asked to provide guidance. The specific priorities are to be determined in the first year of the project, when detailed planning is to be done.

Table 23: Long List of Institutional Development Actions for Sanitation

1 Improve leadership - Clarify the Overall System for Sustainable Service Delivery
- 1.1 Clarify Who Determines Policy or Intent of the Local Government
- 1.2 Improve the Sector Planning Process
- 1.3 Improve the Sector Structure
- 3.1 Establish and Empower a Stakeholder Committee
- 1.4 Improve Agency relationship with Local Government

2 Improve Tariffs / Resource Acquisition and Budget Allocation
- 2.1 Make better rules for setting of service charges
- 2.2 Increase Commercialization

3 Expand and Improve the Means of Service Delivery
- 3.2 Focus on Results
- 3.3 Introduce Performance Management of the Sanitation Agency
- 3.4 Increase Autonomy of Operating Agency (ies)
- 3.5 Improve Performance of Sanitation Agency managers

4 Information Management and Planning
- 4.1 Information Generation and Management
- 4.2 Improve Planning Process, Content and Quality

5 Increase Accountability
- 5.1 External Regulation of Input and Performance Standards
- 5.2 Improve Compliance with Local Legal Instruments

6 Improve Legal Certainty and Enforcement
- 6.1 Improve Implementation of Discharge Standards
- 6.2 Increased Certainty of Access to Services
- 6.3 Overcome gaps and other problems with national level legal instruments
- 6.4 Overcome gaps and other problems with local level legal instruments

7 Upgrade the Set of Local Legal Instruments / Framework

8 Improve Human Resources Capacity at Sector level
- 8.1 HRD plan based on Sector Development Plan

See Part 1, Attachment 2.2 of SPAR Appendix A for detailed activities

Table 24: Local Perceptions of Institutional Practices

ID	P no.	Practice	Total resp.	Mean score		Gap	Priority
				Agree	Ideal		
		Overall sector structure					
5.01	44	Name 5 actions to improve governance of PDAM	5	2.80	5.00	2.20	21
5.02	45	PDAM's monopoly improves service	5	3.60	6.00	2.40	17
5.03	46	Better if BAPPEDA or a Regulator sets WSS policy, not PDAM	5	4.40	6.00	1.60	27
5.04	47	Regulation, like Jakarta Water Supply Regulator, will be successful	5	3.20	6.00	2.80	11
5.32	75	Private investors in PDAM are welcome	5	5.20	6.00	0.80	36
5.33	76	Private investors are welcome to build new systems.	5	4.40	6.00	1.60	27

ID	P no.	Practice	Total resp.	Mean score		Gap	Priority
5.35	78	PDAM should have responsibility for sanitation.	5	3.60	6.00	2.40	17
		Degree of commercialization					
5.05	48	Tariff level must cover costs	5	3.40	6.00	2.60	14
5.06	49	Tariff process more important than level set	5	4.20	6.00	1.80	24
5.21	64	PDAM paid a subsuidy for providing social services	5	4.60	6.00	1.40	30
5.22	65	PEMDA ready to pay a subsidy	5	5.80	6.00	0.20	40
5.20	63	PDAM concerned about efficiency, and should recover all costs	5	5.00	6.00	1.00	34
		Degree of autonomy / corporatization					
5.07	50	A more autonomous PDAM will be better	5	2.20	6.00	3.80	5
5.08	51	More accountability can be introduced to match more autonomy	5	2.20	6.00	3.80	5
5.31	74	Accountability and autonomy will improve as a PT	5	2.40	6.00	3.60	7
5.30	73	PDAM ready as "PT" by 2008.	5	2.00	6.00	4.00	4
5.17	60	PDAM has a corporate plan with indicators	5	5.80	6.00	0.20	40
5.16	59	An AGM receives reports and appoints BP	5	5.60	6.00	0.40	39
5.18	61	PDAM Annual Budget is realistic and published	5	4.20	6.00	1.80	24
		Objectivity of the government representative					
5.14	57	Region Head appoints an appropriate PEMDA representative.	5	3.40	6.00	2.60	14
		Independence and capacity of the oversight board					
5.09	52	Badan Pengawas (BP) represents the community	5	1.20	6.00	4.80	2
5.10	53	BP has a minority representing PEMDA	5	4.20	6.00	1.80	24
5.11	54	BP members are trained in their duties	5	4.60	6.00	1.40	30
5.12	55	BP takes strategic decisions that Directors follow	5	3.60	6.00	2.40	17
5.13	56	The Chairman has same authority as President Director.	5	0.80	6.00	5.20	1
5.15	58	Chairman of BP has responsibilities as onerous as directors.	5	2.40	6.00	3.60	7
5.23	66	The BP chooses directors	5	3.60	6.00	2.40	17
		Capacity of directors / managers					
5.24	67	Direksi dan staff PDAM dipilih berdasarkan kemampuan kinerjanya.	5	3.80	6.00	2.20	21
5.25	68	Promotions are subject to certificates of accreditation	5	3.40	6.00	2.60	14
5.26	69	All contractors have certified competency in WS	5	5.20	6.00	0.80	36
5.27	70	Director's contracts extended if good performance.	5	4.60	6.00	1.40	30
		Performance management					
5.28	71	Internal auditor's role is important	5	4.60	6.00	1.40	30
5.29	72	Annual performance of PDAM is publically reported.	5	5.20	6.00	0.80	36
5.19	62	A performance contract needed between PDAM and PEMDA	5	3.80	6.00	2.20	21
		Introduction of private sector skills					
5.34	77	Private contractors are invited to manage existing systems	5	3.00	6.00	3.00	10
		Miscellaneous					
5.36	79	Name 5 non-physical activities by PDAM to improve performance.	5	4.00	5.00	1.00	34
5.37	80	PEMDA needs to make decisions to improve PDAM performance.	5	3.20	6.00	2.80	11
5.38	81	Name 5 non-physical actions by PEMDA to improve sanitation.	5	2.20	5.00	2.80	11
5.39	82	Province has a role as investor?	5	4.40	6.00	1.60	27
5.40	83	Province has a role as manager of WSSP.	5	2.80	6.00	3.20	9
5.41	84	Province has a coordinating role?	5	1.80	6.00	4.20	3
Mean				3.67	5.93	2.26	

4. APPROXIMATE COST OF LIDAP

255. Table 25 shows the estimated cost over 5 years allocated for undertaking the water supply and sanitation components of the LIDAP. The two sectors have been combined because at the LIDAP level institutional development efforts should be integrated as much as

possible. The cost of providing a "standard package" has been estimated and then an allocation as a percentage of this made to each RG, based on an estimate of the total available funds for IDCB activities. The percentage of the standard package is shown in the costing of the FOPIP.

Table 25: Estimated Cost of a Typical LIDAP for Water Supply and Sanitation Sector

No	DESCRIPTION	Unit	Total	2007	2008	2009	2010	2011
	Approximate Citizens	Nr.		220,000	220,000	230,000	240,000	250,000
	Approximate PDAM Connections	Nr.		23,000	25,358	26,625	27,957	29,354
	Approximate Total Persons Served	Nr.		156,000	162,240	168,730	175,479	182,498
	Approximate Total Revenue of PDAM	Rp M	57,298	8,777	10,257	11,416	12,706	14,142
A	**SOURCE OF FUNDS**							
1	Levy on PDAM Revenues	Rp M	381	0	81	90	100	111
	Total fees as % of PDAM revenue (approx.)	%		0%	1%	1%	1%	1%
2	Other Levies on Third Parties in Sector	Rp M	93	3	10	18	26	35
3	Grants from Province / Central Government	Rp M	3,905	923	847	794	685	656
	Total Revenue	Rp M	4,048	923	878	828	722	698
B	**USE OF FUNDS**							
B.1	**Operational Expenditure**							
0.1	Wages/Salaries	Rp M	674	98	108	143	155	170
0.2	Office Running Costs	Rp M	146	26	27	29	31	33
0.3	Reporting Costs	Rp M	35	7	7	7	7	7
	Minimum Cost of LIDAP Secretariat	Rp M	855	131	142	179	193	209
1	Leadership / Governance Group and Communications	Rp M	123	21	23	24	26	28
		Rp/ Citizen	528	97	103	106	109	113
	Normal Cost of LIDAP Unit and Project Governance	Rp M	977	152	165	203	219	238
		Rp/ Citizen	4,190	693	750	882	914	950
B.2	**Capital Expenditure**							
2	Re-design Overall Service Delivery System in Sector	Rp M	218	218	0	0	0	0
3	Improve Tariff Setting and Resource Allocations Process	Rp M	169	99	69	0	0	0
4.1	Increase PDAM / Operator Autonomy / Corporatize	Rp M	505	0	0	172	167	167
4.2	Performance Agreements & Regulator	Rp M	225	113	71	41	0	0
5	Improved Information Management and Planning	Rp M	518	120	150	83	83	83
6	Improve Governance / Accountability via Badan Pengawas	Rp M	816	135	180	181	182	137
7	Upgrade Local Legal Instruments	Rp M	233	0	158	75	0	0
8	Improve Sector Level Human Resources	Rp M	383	85	85	71	71	71
9	Strategic Management in Sector	Rp M	0	0	0	0	0	0
10	Miscellaneous On-the-Job Assistance	Rp M	0	0	0	0	0	0
Total Investment (2 to 10)		Rp M	3,066	769	713	623	503	458
TOTAL EXPENDITURE		**Rp M**	**4,043**	**922**	**878**	**826**	**722**	**695**

Note: Above 37.5% of a standard package.

Table 26: Summary of Costs of a Typical LIDAP

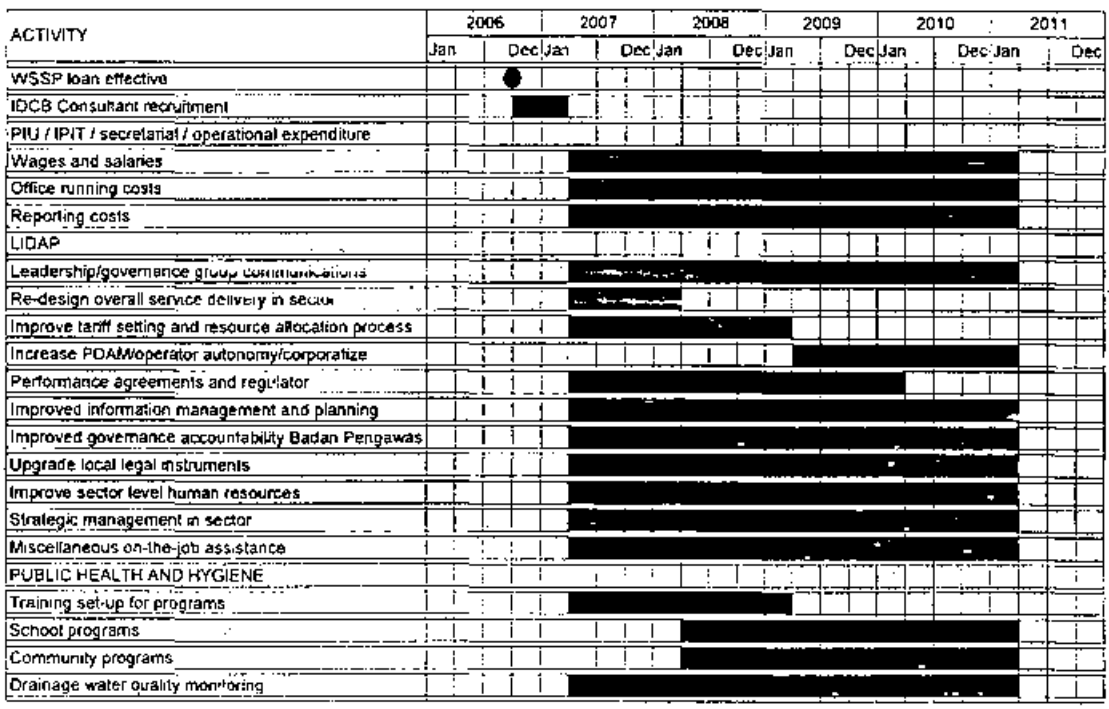
Costs Breakdown	UNIT	TOTAL	2007	2008	2009	2010	2011
Total Foreign Manmonths	mm	6.6	2.4	1.1	1.1	0.9	0.9
Total Local Manmonths	mm	40.1	6.0	18.9	9.2	4.1	1.9
Total Manmonths	mm	46.7	8.4	20.1	10.3	5.1	2.8
Total Costs Foreign Consultants	Rp M	1,444	536	248	248	206	206
Total Costs Local Consultants	Rp M	679	114	310	150	75	30
Total Consultant (Remuneration) Costs	Rp M	2,123	651	557	398	281	236
Total Training Costs	Rp M	408	88	89	77	77	77
Total Purchases equipment and software	Rp M	379	9	122	83	83	83
Other (travel, accomm, campaigns, fees, etc).	Rp M	156	21	55	67	62	62
Total LIDAP Capital Expenditure	Rp M	3,066	769	713	623	503	458
Consultants as % LIDAP Expenditure	%		85%	78%	64%	56%	52%
LIDU and Leadership Group Opex	Rp M	977	152	165	203	219	238
Total LIDAP Expenditure	Rp M	4,043	922	878	826	722	695

Note: Foreign mm and associated costs will not be included in "Wilayah Contracts", but consolidated into contract(s) at a higher level.

5. Approximate Timing for LIDAP Activities

256. The approximate sequencing and duration of the activities for the LIDAP in a typical RG is shown in the following Figure.

Figure 13: Indicated Schedule for a Typical LIDAP in the Water and Sanitation Sector



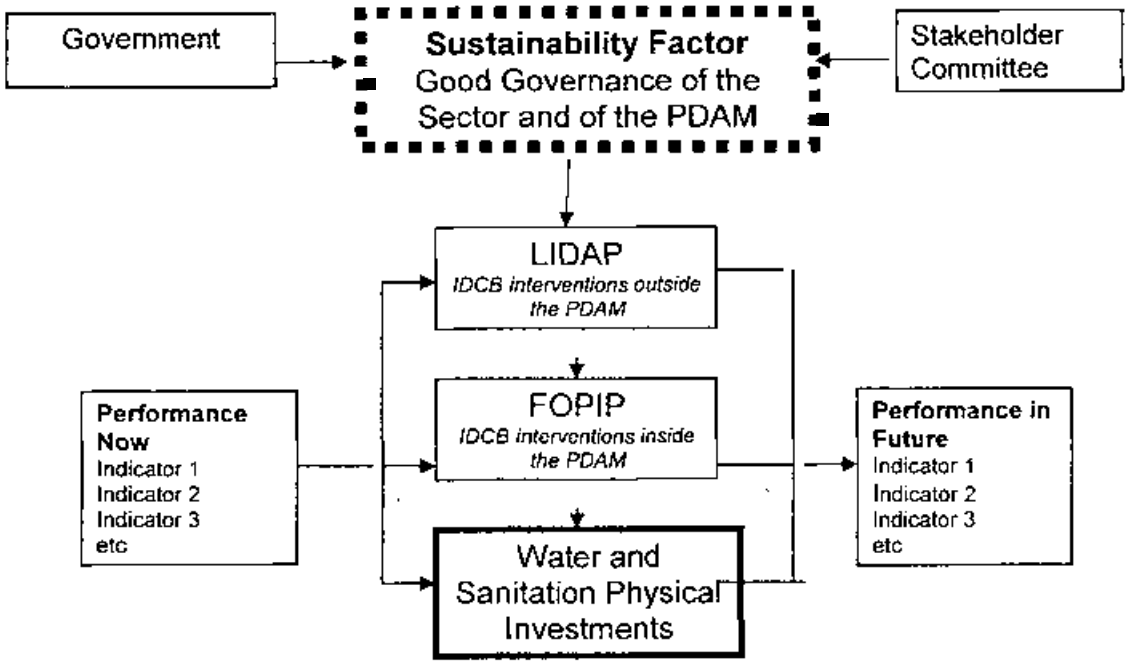
F. Good Governance

1. Sector and Corporate Governance Sustain the Investment

257. The immediate objectives of the IDCB activities are promote reform and good governance in the sector. Good governance practices are critical to improving sustainability of the project investments, as they ensure that key actors in the sector are involved in decision making, and that external forces are brought to bear on the service providers, thus helping to keep them sensitive to community needs.

258. The good governance objective is to ensure a system is established to interpret local needs, review project objectives and progress in achieving them, and directing changes needed to keep the project's objectives aligned with local needs, all in the most efficient manner possible. Good governance is the critical factor in improving project sustainability. In summary, Figure 6 outlines the relationship to another of the various project components.

Figure 14: Good Governance in the Project Design



259. Governance also has two levels – the sector level, or governance in the wide sense – and governance of the service providers, or "good corporate governance" in the case of PDAMs. The "unpacking" of the sector and associated initiatives, such as creation and operationalizing the Stakeholder Committee, according to the "ideal structure" will improve sector governance.

260. The project will not attempt to measure the quality of governance at the sector level, although Table 24 provides a proxy for the perceived quality of governance at this level. Instead, the degree to which good governance is being practiced at the PDAM will be monitored, as improving governance of local government owned enterprises, including PDAMs, is part of GOI policy at present. It forms the basis for the Ministry of Home Affairs draft law on reform of local government owned enterprises (BUMN), which has been approved by the President for entry into the Government's legislative program in 2005 or 2006.

2. Sector Governance and the Stakeholder Committee

261. Participation (and consultation) is one of the pillars of good governance (the others being accountability, transparency, and predictability), and yet, the IEA found in all RGs very weak mechanisms for ensuring the consumers, community and other other stakeholder "voice" (or rights) were incorporated into decision making in the sector. Further, the LIDAP survey on perceptions among bureaucracy with regard to participation produced evidence that the concept will take time to become common practice. Many of the respondents saw little use for the Stakeholder Committee, throwing up the usual objections, such as (i) the only people interested in participating in such a Committee were malcontents (ii) who would pay (iii) how to reconcile the apparent conflict between the duty elected and administrative official have to make decisions about the sector and such an "ad-hoc" committee (iv) how would Committee members be held accountable (v) does the law allow such participation and (v) what would happen after project completion?

262. These objections are not considered to be insurmountable. It is obvious that the Committee, at the least should be advisory in nature, but there is no reason why formal power-holders cannot delegate certain decisions. In fact it would also appear advantageous to busy senior administrators to involve as many people as possible to avoid poor decision-making. Wide participation of stakeholders would be beneficial for both the water supply and sanitation sectors. It is too much to expect the DPRD will be involved in depth in the sector 0- their "political" agenda is full, and there is a certain level of competence required of governors of the sector that would be left to competent and interested people. This is the history of many more formal "Water and Sanitation Boards" around the world – a group of competent, independent, interested and professional people appointed by the government to oversee the water and sanitation services provided by government.

263. The specific role of the Stakeholder Committee with respect to authority and accountability is a matter for each RG to determine (and will probably change over time), but immediate roles include:

- Receive technical advice for the service provider (PDAM and sanitation agencies)
- Discuss, represent and defend stakeholder interests and provide advice to the technical agencies concerning acceptable standards of service and designs;
- Help the consultants and technical agencies conduct surveys and gather community data;
- Feedback to their constituencies proposed designs and progress of the Project
- Compile and provide to the administration and the DPRD thoughtful recommendations concerning the water supply and sanitation designs and project implementation related to the project, as well as other matters, including projects, associated with the sectors;
- Conduct their own meetings in an orderly manner, including taking minutes and following democratic procedures;
- Evaluating stakeholder satisfaction with the project;
- Representing and performing advocacy roles with respect to promotion of the Project; and
- Representing the Project in the local media and community.

264. Constitution of the Committee should cover key stakeholders: various interest groups, examples being:

- Women and disadvantaged groups
- The poor
- Civil society
- Government agencies
- Political interest groups
- Academics
- Householders, served
- The un-served;
- Industry and trade associations
- Prominent community members; and
- Religious leaders.

265. It would be best for the Committee to grow "organically" from an existing organization, but time may preclude this method of establishment. The inaugural members probably have to be carefully selected, using an open selection process as much as possible. In time the selection process may become more formal. The selection process should aim to provide

members with the appropriate competencies for the Committee, which include: the ability to work in a team, a sense of fairness, an interest in and time available to serve the community, sufficient knowledge of the importance of due process, strategic thinking skills, and the ability to act as an advocate for the achievement of the Project's objectives.

266. The Committee should be supported by a "Secretariat", which would best be the formal group of officials that exists in most RGs for coordinating projects – the Tim Koordinasi Perencanaan dan Pemantauan (TKPP). Funding for the secretariat has been included in cost estimates.

267. The method of working of the Committee is expected to be through sub-committees or work groups. One would handle strategy development and planning issues for instance, another liaison with the community and the media, and a third would handle technical matters. Immediate task include overseeing development of an integrated water supply and sanitation plan required by PP 16/2005 (Article 78), part of which are likely to be specific matters coming out of the city-wide sanitation strategy. They would also approve (or recommend for approval) actions proposed by agencies and communities, based on compliance with criteria established at the strategic level, while remembering their main task is to provide a governance overview of the sector, not management action.

3. CORPORATE GOVERNANCE OF THE PDAM

268. The IEA also revealed that the Board of Supervisors of the PDAM have very limited effectiveness, due to lack of proper constitution, poor election processes of members, asymmetries of information with respect to the Directors, and low capacity. And yet it is vital that more broad-based decisions are made with respect to the distribution of the costs and benefits of water supply investment, and to provide oversight of the PDAM Directors. Like the Stakeholder Committee at sector level, a deliberate action to establish proper governance of the PDAM is indicated – a system of good corporate governance is needed. The system would encourage adoption of practices that ensure:

- Owners (currently PEMDA) and stakeholders' rights in the PDAM are protected;
- Risks faced by the PDAM are managed properly, including abuse of community owned assets and corruption,
- Laws and regulations are complied with
- The Directors perform an appropriate role
- The Board of Supervisors also perform an appropriate role; and
- A system of Good Corporate Governance (GCG) is established.

269. The concept of governance unfortunately is poorly understood in many quarters, so the specific practices which constitute good corporate governance need to be moved from the abstract to the concrete. To do this, each SPAR includes a checklist and scoring system breaking down the above practices (Appendix A, Attachment 4 of Part 2) into sub-headings and specific practices. In this way a "GCG Index" is proposed. Table 9 shows the seven main components proposed. Sub-components and then specific practices are included in the referred Attachment.

270. The practices have been mainly based on the requirements of the draft law concerning reform of local government owned enterprises (BUMD). However, some additional practices concerning production an maintenance of an Anti-Corruption Action Plan, and transparency in procurement have been added to met the immediate needs of the Project. Possible loan "conditionalities" are therefore incorporated into the local context, rather than being seen as external impositions.

Table 27: The Good Corporate Governance Index for PDAMs

	Good Corporate Governance Practices	Practice Score	Weight	Total Score
1	Established Components of System of Good Corporate Governance	-	30	-
2	Appropriate Role played by the Board of Supervisors (Badan Pengawas)	-	10	-
3	Appropriate Role played by the Board of Directors (Direksi) in support of good governance initiatives	-	10	-
4	Fulfillment of Disclosure, Transparency and Compliance Obligations	-	10	-
5	Control of Risks, Corruption and Fraud	-	20	-
6	System to Protect Rights of Government Owners / Shareholders	-	10	-
7	System to Protect Rights of Stakeholders, including provision of consultation and participation mechanisms	-	10	-
			INDEX VALUE	

Notes:
1. "Practice Score" is based on the "Degree of Adoption / Achievement" awarded to each Practice, calculated from the sum of the score awarded to each component.
2. See Table 2 for the components of each Practice and scoring
3. "Weight" is an arbitrary value determined by authorities to reflect the importance of each Practice in achieving a state of good corporate governance.
4. "Total Score" for each Practice is component score multiplied by weight.
5. "Index Value" is a single number calculated by summing the Total Score for each Corporate Governance Practice. The higher the score, the better. It can never be more than 1000 under the stipulated scoring method.

271. Use of the index raises the question of who will score it, and how. It should be used by the Stakeholder Committee as a general guide for assessing the status of their own governance improvement efforts, and specifically by the Board of Supervisors to guide development of their System of GCG. It has value both as a self assessment tool, and as a tool to be used by an external quality auditor. The value of the index will be calculated in the first year of the Project following an assessment by the IDCB and QA consultant.

G. FINANCIAL AND OPERATIONAL PERFORMANCE IMPROVEMENT PLANS (FOPIP)

1. BACKGROUND AND OBJECTIVES

272. Experience, discussions and observation indicate performance of the PDAM depends upon some factors which are outside of their control, and others which are mostly, if not entirely, under their control. IDCB work for the FOPIP concerned those factors under the control of the PDAM directors and personnel. The plans are shown in Part 2, Attachment A of each SPAR.

273. The Plans are based mainly on the project objectives and activities, the results of an organizational audit conducted by survey among PDAM personnel, and the opinions of senior PDAM managers and the consultants and the physical investments proposed. The objectives in preparing the Plans wee to record the methods, reasoning and first conclusions (prbobaly good enough for agreeing first year's activities. Keeping the critical need in IDCB to have full ownership, the Project design requires each participating local government to, among other matters:

- prepare a water supply and sanitation sector strategy by September of the first year of the project; and
- prepare or update the PDAM Corporate plan by September of the first year of the Project

274. These strategic plans are required by Indonesia regulations and will therefore update and refine this FOPIP. The Project also requires an annual update of the plans to ensure that a cycle of continuous improvement is instigated.

2. APPROACH AND METHOD

275. The approach to assessment and preparation of the plan is based on fact as much as possible, given the limited project preparation period (a four day visit to various agencies of the local government, including the PDAM, by an institutional specialist). Data was collected using three methods:

- Conduct of a survey of organizational competencies or needs among important personnel of the PDAM (the "FOPIP" survey)
- Completion of a questionnaire by the President Director of the PDAM; and
- Discussions with the Directors and key personnel.

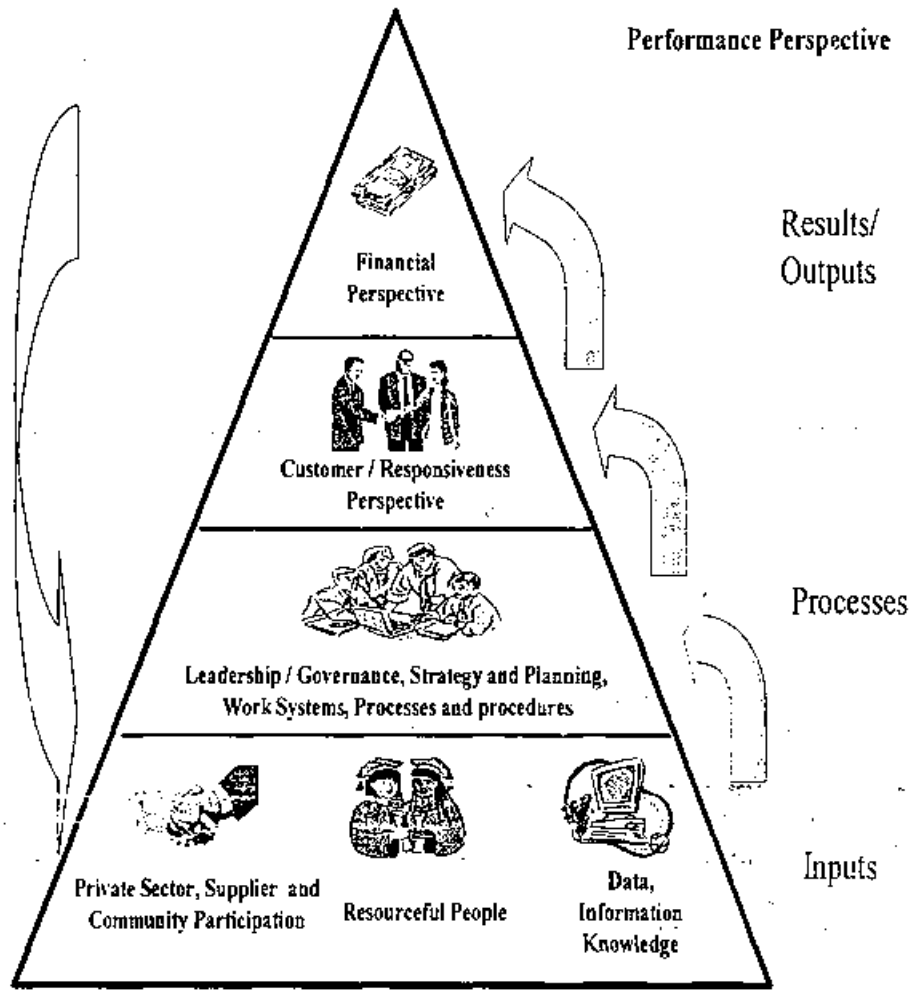
276. The impact of the proposed projects (new production facilities, new customers etc are also considered. As noted previously the Plan focuses on internal matters over which the Director(s) have authority and can be held accountable for.

277. One problem with capacity building / performance improvement efforts of the past has been their lack of use of an analytical framework, or a postulated set of cause and effects. The experiences of one project are difficult to transfer to other areas under these circumstances. But the broad categories / components or competencies of any organization which contribute to superior organizational performance are reasonably well recognized among experts in the field of organizational development. They are practices related to:

1. The leadership / top management
2. Financial management
3. Customer or external (stakeholder) focus
4. Strategy and planning
5. Work systems, processes and procedures
6. Organizational structure
7. Supplier and partner relationships
8. Data information and knowledge creation and management
9. Human resource management and development ("people"); and
10. Achievement and continual improvement of organizational performance

278. The assessment of the PDAMs, be it through the FOPIP survey of personnel or discussion of organizational arrangements, was done within this framework. Proposed actions for improvement are also presented within this framework. Which categories are related to other categories, or cause other categories to support improved performance? As has been used in the PERPAMSI Benchmarking System, it is postulated that these categories are related in a hierarchal way, as shown on Figure 15.

Figure 15: Analytical Framework for PDAM Performance Improvement



279. Figure 15 postulates that:

i. good human resources, information and supplier / third party relationships enables

ii. development of better organizational structure, work systems, processes and procedures as well as strategy identification and planning, which

iii. delivers better water services, which in turn

iv. causes improvement in the financial affairs of the PDAM – with the improvement in financial affairs then creating financial resources which can be used to further improve performance.

280. This framework to improve understanding of performance and the underlying competencies is in fact used by PERPAMSI to guide measurement activity for their PDAM Benchmarking System.

281. The 150 and more practices which constitute the 10 categories are shown in Appendix A of the SPARs, (Attachment 1 to Part 2). Many of the practices are generic – that is, any organization deploying the practice will perform better. They are the foundation of such generic management systems as ISO 9000:2000 (SNI 19.9000:2001) concerning standards for a quality management system.

3. ASSESSMENT OF PDAM ORGANIZATIONAL PRACTICES

RESULTS OF THE FOPIP SURVEY

282. The organizational survey / audit was conducted by surveying the perceptions of between 10 and 20 senior personnel of each PDAM (see Appendix Attachment 1 for the instrument). The dimensions or category of the organization audited included:

1. Leadership
2. Financial management
3. Customer Focus
4. Strategy and planning
5. Human Resources
6. Organizational Structure
7. Procedures, Processes and Product
8. Contractors and suppliers
9. Data, Information and Knowledge
10. Performance

283. Results of the bivariate analysis are shown in Appendix A of the SPARs, Part 2, Attachment 2. The audit seeks to identify improvement actions by (1) analyzing the gap between degree of establishment and degree of importance of organization categories and (2) through a series of open questions asking sector managers and staff to identify felt training needs. The method acknowledges that the persons inside the PDAM doing their job are most likely in the best position to know what performance improvement actions are most needed. Its weakness is that those doing the job may not know enough of the "big picture" to properly assess needs.

284. Priority should be given to categories of practices and also individual practices perceived by the personnel as being most important to improve performance, and which are not being well performed at present.

285. Table 2 shows the priority of categories established by the survey. The full results of the survey are reported in Attachment 2. It includes specific practices in each of the three categories which particularly worry the PDAM personnel. PDAM Directors should not these concerns and act to improve the practices identified as needing improvement.

286. These categories were also applied because they represent organizational competencies, which if mastered, should enable the PDAM to respond to the challenges it faces. Building the PDAM around these practices will create an open, competency-based organization in which the staff become increasingly interchangeable among the PDAMs. The agenda of an open recruiting system will be addressed in this way.

Table 28: Priority Categories for Action, according to PDAM Personnel

Organizational Audit Category	Scores			
	Perform	Importance	Gap	Priority
1. Leadership	3.67	4.12	0.44	8
2. Finances	3.80	4.33	0.52	7
3. Customer focus	3.72	4.49	0.77	2
4. Strategy and planning	3.62	4.49	0.87	1
5. Human resources	3.37	4.04	0.67	4
6. Organizational structure	4.06	4.38	0.33	10
7. Procedures, process, product	3.22	3.76	0.53	6
8. Contractors, suppliers & partners	3.47	4.18	0.71	3
9. Data, information & knowledge	3.82	4.47	0.65	5
10: Performance	3.80	4.19	0.40	9

Note
1. Based on analysis of 11 of 11 questionnaires
2. Perfm = average score for adoption
3. Impt = importance to performance
4. Gap = difference between Perfm and Impt
5. Action Priority is the practice that presently has the greatest need for action to establish within the organization; 1 indicates first priority

287. Each survey revealed a different set of priorities according to respondents. For the example shown, overall, the PDAM personnel surveyed perceive that the highest priority category for action is to improve the strategy and planning aspects of the PDAM. This may reflect lack of a sensible Corporate Strategy and annual planning for normal functions, such as marketing and customer relations, procurement processes and other routine functions.

288. The second ranked category in the case is "customer focus". This often mean the personnel know that they should be more concerned with providing a good service but feel there are gaps between what is said and what is done in the PDAM" It often indicates lack of performance information in the community and so, probably low accountability.

289. The third ranked category in the example is "relationships with contractors, suppliers and third parties" and possibly indicates concern of procurement practices.

290. Depending on the category indicated as priority, the indicated performance improvement actions differ between PDAMs. Each FOPIP contains a selection of indicative actions chosen from Attachment 3 to the FOPIP, that is, Appendix A , Part 2 of each SPAR. The intention is to establish a framework which enables PDAM directors establish an on-going "self-assessment checklist" of better practices.

291. Like the LIDAP survey, analysis of individual practices also highlights some of the challenges to be faced in managing change and reform under the Project. Table 11 from a typical RG summarizes the survey results from three perspectives:

- First priority practices in each category
- Top ten priority practices gathered from all categories; and
- Key practices that the WSSP should be targeting.

292. Practices shown on the lower part of Table 29 need special attention because they are important to achieving project objectives but are not perceived to be important by the PDAM personnel. In this example, only the need to regularly adjust tariff, have a workable strategic plan and enough information to calculate water losses are perceived as needing attention (i.e. are ranked highly). And yet these and the rest of the practices in the right of the table are targeted in performance improvement activities classed as "mandatory activities" under WSSP.

Table 29: Top Priority Practices within Categories

1. First Priority Practice in Each Category

Organizational Audit Category	Priority action-> nr	Practice	Gap
1. Leadership	6	Leaders explain duties for each section	1.18
2. Finances	11	Tariff automatically adjusted for inflation	1.18
3. Customer focus	11	Community outreach deployed	1.64
4. Strategy and planning	2	Strategic Plan forms basis for all activity	1.36
5. Human resources	19	Bonuses are based on objective criteria	1.40
6. Organizational structure	12	Structure facilitates communication to bosses	0.64
7. Procedures, process, product	5	Drinking water, not clean water distributed	1.30
8. Contractors, suppliers & partners	6	Routine market testing for prices	1.09
9. Data, information & knowledge	9	Enough info to calculate water losses	1.33
10. Performance	4	Reasons for changes in performance are analyzed, and actioned	0.64

2. Top Ten Priority Practices - All Categories

Priority	Organizational Audit Category	Priority for action, all categories nr	Practice	Gap
1	3. Customer focus	11	Community outreach deployed	1.64
2	5. Human resources	19	Bonuses are based on objective criteria	1.40
3	4. Strategy and planning	2	Strategic Plan forms basis for all activity	1.36
4	9. Data, information & knowledge	9	Enough info to calculate water losses	1.33
5	7. Procedures, process, product	5	Assets are managed by plan	1.30
6	2. Finances	11	Tariff automatically adjusted for inflation	1.18
7	5. Human resources	9	All sections have professionals	1.18
8	1. Leadership	6	Leaders explain duties for each section	1.18
9	9. Data, information & knowledge	10	Frequent cadastres	1.18
10	4. Strategy and planning	9	Overall, planning is good	1.10

3. Need for Change of Key Practices to be Targeted by WSSP

Practice	Organizational Audit Category	Priority for action, all categories nr	Practice	Rank
1.09	1. Leadership	9	Leaders emphasize customer service	143
2.11	2. Finances	11	Tariff automatically adjusted for inflation	6
2.15	2. Finances	15	On-going attention to billing efficiency	142
3.03	3. Customer focus	3	Customers surveys are used	20
3.04	3. Customer focus	4	Customers complaints are processed	112
4.02	4. Strategy and planning	2	Strategic Plan forms basis for all activity	3
5.14	5. Human resources	14	Employee perception surveys are routine	27
5.25	5. Human resources	25	All directors nationally accredited	61
6.06	6. Organizational structure	6	Developing more autonomy	92
7.07	7. Procedures, process, product	7	Have a water quality testing program	92
7.19	7. Procedures, process, product	19	There is a technical program for UFW	149
9.05	9. Data, information & knowledge	5	Data provides results for performance indictors	20
9.09	9. Data, information & knowledge	9	Enough info to calculate water losses	4
10.02	10. Performance	2	Performance indictors are published for stakeholders	99

Note: Based on an analysis of 11 of 11 questionnaires.

RESULTS OF DISCUSSIONS AND OBSERVATIONS

293. The Assessment in each SPAR includes an analysis of the PDAM under the ten "organizational excellence" categories. Most assessment noted the lack of proper governance arrangements, weak financial management, minimal practices with respect to customer service, useless corporate plans, human resources practices driven by patronage, bloated organizational structures in need to re-structuring; no recording of processes and procedures, antiquated or non-transparent procurement practices. rudimentary information systems and no use of performance measurement to identify systematically problems or to provide incentives to staff.

294. The assessment in each category sets-out either specific problems identified, or the problems typically observed in many PDAMs. Each assessment ends with a list of indicative

actions for consideration of the Directors and the PDAM's Internal Performance Improvement Team to be established under the Project. Table 30 provides a summary of the findings. It was noted that PDAMs on Java have appear much better (for example most have rudimentary job descriptions, but "quality is more the problems than quantity".

Table 30: Summary of Evaluation and Possible Management and Operational Improvements

No	Category / Group	Assessment	Suggested Steps for Improving Performance
I	**Leadership / Local Government**	1. Pemda policy treats PDAM as a social service, making it difficult for the PDAM to become profitable. 2. Simultaneously Pemda treats the PDAM as a source of local revenues (PAD) 3. The Pemda still place civil servants as Directors of the PDAM 4. Pemda have not yet empowered the employees of the PDAM to act as entrepreneurs.	1. Change the thinking of PEMDA to that of the PDAM being a profit seeking organization, and not a just a social service. 2. PDAM may only contribute to PAD if the profit is above a certain level. 3. Pemda must seek Directors based on their entrepreneurial expertise. 4. Pemda should facilitate development of PDAM personnel with an entrepreneurial orientation.
II	**Financial Management**	1. Small PDAMs of Type A & B not yet able to compile financial reports in accordance with the Guidelines, and some have not been audited by BPKP for some years. 2. There is a shortage of accounting staff in the PDAMs able to prepare financial reports. 3. Computerization of accounting procedures and reporting is only partially available.	1. Authorize the PDAMs to be audited by a public accountant and improve the financial administration. 2. All PDAMs need to program into their HR plan the provision of degree holders in accounting and finance as well as diploma holders in the same disciplines. 3. Develop and provide training in the use of the accounting manual in the context of the project finances. 4. Provide computers and accessories, including accounting software.
III	**Customer service / relationship with stakeholders**	1. Most PDAMs do not have a 24 hour emergency response / repair service 2. Many PDAMs do not have a meter workshop, and other repair workshops. 3. Most PDAMs do not provide a continuous supply (24 hour supply) but rather work on a "block" system 4. Some PDAMs do not have a marketing unit, most Units are ineffective anyway.	1. PDAM should be obliged to provide a 2-hour emergency response. 2. PDAM should be obliged to have a meter repair workshop and other repair workshops. 3. After WSSP, a 24 hour continuous supply should become the norm. 4. As a result of WSSP, the marketing Unit should be made effective.
IV	**Strategy and Planning**	1. Corporate Plans of the PDAMs have a poor structure and content with so much variety they are difficult to improve "wholesale". 2. The weak financial situation of the PEMDA and PDAM most often not accounted for in the strategy and planning. 3. Some PDAM are beginning to evaluate their strategy and plans.	1. Strategies and plans should reflect the actual conditions prevailing, including the capacity of the PDAM to implement. 2. More alternative sources of funding needed, including form higher levels of government, and the private sector. 3. Training in preparation and use of a of a Corporate Plan in needed.

No	Category / Group	Assessment	Suggested Steps for Improving Performance
V	**Human Resources**	1. Personnel are accepted without testing and there are many who have been placed there by local (nepotistic) government officials. 2. The salaries of PDAM staff is not at all standardized with some being paid below the minimum regional wage (UMR).	1. Upon joining WSSP, the personnel of the PDAM must become more productive, with steps such as Alternative A: Reselection after laying-off and provision of separation packages for those not reselected Alternative B: Program the provision of technical and accounting training soon, working with training institutions or under a WSSP component. 2. Local government officials and members of the DPRD must be helped to understand that the PDAM is most efficient when it is left to seek a profit form its activities. 3. Pemda and PDAM officials should seek training programs outside Pemda. 4. The salary system should be made more performance oriented after the re-selection.
VI	**Oganizational Structure**	1. Small PDAMs of Type A and B in general are not structured efficiently in accordance with SK MenNeg Otda no.8 tahun 2000. 2. Sub units in the structure are not oriented to servicing customers. 3. Degree of decentralization not sufficient; too hierarchial. 4. Line functions are not performing enough "staff" functions (such as HR, planning, procurement and information management).	1. Restructure those PDAMs that are clearly not following Keputusan MenNegara Otda. 2. Disseminate models for more decentralized structures for PDAMs. 3. Provide training to structural personnel of the PDAM concerning the links between structure and management needs. 4. Disseminate re-structuring proposals to Pemda before proceeding.
VII	**Work processes, systems, procedures and product**	1. Most PDAMs are not making proper use of technical manuals and other guidelines, such as for accounting and administration to systematically improve the ay things are done. 2. Job descriptions based on preferred procedures and performance indicators are not available for most personnel 3. Work programs for sub-units have not been prepared for many units, meaning that any high level objectives are not being translated into everyday activities.	1. Specific guidelines on accounting, administration, finances, procurement and technical aspects need preparing and disseminating. 2. The mentioned Guidelines should be produced separately and in simple forms for use as Handbooks by the staff. 3. Every structural official should prepare a duty statement and discuss it with colleagues and others. 4. A work program should be prepared and discussed by all structural officials in the PDAM.
VIII	**Contractors and Suppliers**	1. Small PDAMs of Type A and B in general should do repairs and maintenance as well as small capital work, by themselves. 2. Large contractors are generally not available readily in smaller kabupatens / kota	1. Larger contractors need to collaborate with local contractors as sub-contactors. 2. More collaboration with neighbors. 3. More use of managing contractors / operators.
IX	**Data, information and knowledge**	1. Technical data such as on the pipe network and on customers is far form complete. 2. More information and publication made available to PDAMs. 3. Knowledge of staff in small PDAMs about their operations and efficiency is particularly limited.	1. More technical staff need recruiting and more careful management of those staff (quarterly reporting etc). 2. Work more closely with the media and official sources. 4. Encourage staff to follow higher education courses, including rewarding them for doing so.

No	Category / Group	Assessment	Suggested Steps for Improving Performance
X	**Organisational Performance**	1 Larger PDAMs of Type C, D and E in general are preparing some reports including assessment of performance. 2. None are disseminating properly.	1. Smaller PDAMs need training to measure and then prepare reports on performance. 2. Assessment of performance to concentrate on customer and financial perspectives. 3. Train all to use more effectively performance information.

295. The third part of the assessment considered the future facilities proposed and the impact on personnel and training. Table 31 consolidates the assessment.

Table 31: Consolidated Recruitment and Training Needs (Indicative)

Description	2006	2007	2008	2009	2010	2011
Production Capacity	6,535	7,685	9,325	9,325	9,325	9,325
Incremental Production	36	1,150	1,640	0	0	0
Connections	344,820	376,283	451,459	531,090	578,888	609,633
Incremental Connections	2,683	31,463	75,176	79,631	47,798	30,745
Personnel/1000 Connections	124	116	106	102	100	99
Personnel	2,449	2,640	3,155	3,702	4,024	4,228
Incremental personnel	63	191	514	547	322	205
Cumulative new personnel	63	254	769	1316	1638	1842
Number for Training						
-Percent 'Refresher' Trained		50%	25%	25%	25%	25%
-Refresher		1,225	660	789	925	1,006
-Induction		191	514	547	322	205
Total Persons for Training		1,416	1,174	1,336	1,247	1,211

296. This assessment is based on a conservative estimate of the productivity improvements to be achieved as indicated by the personnel to connection ratios. Estimates for training costs have been included in the FOPIP cost estimate. The HR systems to be improved under the "Human Resources" category should include a sub-system to ensure the new recruits are the best available, having been recruited using transparent and professional practices in the open market. The assessment does not include those (significant percentage) of personnel who may be retired or retrenched because they are not suited to their job. Most PDAMs need to increase the number of qualified people in the technical and financial management / accounting disciplines.

297. The assessment ends by noting that specific circumstances and the dynamic nature of change management demand an annual update of the assessment, and that the performance improvement programs developed as a result of the Annual Review should include recent experience and local dynamics.

PROPOSED ACTIVITIES FOR FIRST YEAR

PRINCIPLES FOR DEVELOPING THE PLAN

298. There are an almost endless number of performance improvement actions which could be chosen. From the foregoing assessment, the following principles have therefore been developed to help choose performance improvement actions:

- It is essential for leaders and top managers to be seen to be and are fully supportive of performance improvement plans and actions;
- A systematic approach to management and its improvement is better than ad-hoc / unsystematic approaches;
- A clear vision and mission consistently enunciated by leaders and top management gives direction to employees; strategic objectives should reflect these statements and all activities designed to support achievement of the objectives

- Performance improvement plans should be prepared and agreed as much as possible with personnel because involvement improves ownership (ie, informed choice is vital);
- Understanding customer needs and expectation should drive PDAM direction, strategy and action;
- To consistently improve the outcome, improve the inputs, the processes and the systems, remembering that any change to systems requires a broad understanding of the PDAM;
- Personnel capacity is fundamental to achievement of the outcomes the PDAM desire;
- Performance improvement activities should be part of a continual improvement cycle, not just "one-off" activities; and
- Data, information and fact should be used to design improvement programs.

299. With these principles in mind, the following first set programs are suggested. To accommodate the need for local choice but also for the capturing of economies of scale and application of limited IDCB expertise, the FOPIP activities have been classed into 3 group (1) core or mandatory programs (2) programs proposed by the PDAM based on survey and other factual information and (3) optional programs which need to be justified against the above criteria.

CORE OR MANDATORY PROGRAMS

300. There is at least one activity from each of the categories. Mandatory activities are performance improvement activities the PDAM participating in WSSP must undertake, and include:

i. Establishment and on-going maintenance by the Directors of the Internal Performance Improvement Team (IPIT);

ii. Establishment and on-going maintenance of a program of Good Corporate Governance by the Badan Pengawas (see Attachment 3);

iii. Appointment, training and on-going maintenance of financial management personnel and practices (see Attachment 4 for the practices to be established, if they have not already been adopted);

iv. Implementation of a rapid revenue enhancement program;

v. Implementation and analysis of an annual customer satisfaction survey before each Annual Review, as well as establishment and maintenance of a complaints receipt and processing function in the first year (all part of a customer management system)

vi. Conduct of an Annual Review of the Corporate Plan and (up-dating as necessary) including of its indicators and targets;

vii. Implementation, analysis and action on an annual employee perception survey before each Annual Review, as well as progressive establishment of an improved Human Resources Management System.

viii. Implementing a water loss reduction program;

ix. Conduct an energy audit and review generally supplier (electricity, chemicals, materials, services) relationships, including the procurement process, prices obtained and the quality control process;

x. Annual collection, checking and submission of benchmarking data to PERPAMSI, and associated use of the results to improve understanding of performance and communications with stakeholders; and

xi. Development of an Information System oriented to delivering the data needed for financial management, benchmarking performance, asset management and other performance improvement activities.

301. Table 32 shows the first set of recommended actions. A brief explanation follows for each of the mandatory programs / activities, which, taken as a whole, should establish the conditions under which more specific financial and operation performance improvement plans can emerge in later years.

Table 32: Action Plan / FOPIP for the PDAM

Strategic Objective: Sustainable improvement in coverage and cost recovery.

	Category and Program / Action	How Performed?	Responsible Party	Begin - Finish	Indicator of Success
1	**Leadership / Governance**				
	Good Governance Program Internal Peformance Team	Thru Badan Pengawas (BP) 6 senior personnel, with S/K	BP Director	2006 /10	GCG Index
2	**Financial Management**				
	Project & Operations Accounts Rapid Revenue Improvement	Appointments and training Plan and actions	PIU Head Finance Director	2006/07 2006/10	Audit Reports Scorecard
3	**Customer Focus**				
	Customer Surveys & Mgt.	Customer Management System	Customer Relations Div.	2006/10	Indicator on Scorecard
4	**Strategy and Planning**				
	Annual Corporate Plan Review	Based on survey results and formal review with stakeholder consultation	Directors	September every year	Revised targets available
5	**Human Resources Management & Development**				
	Employee Surveys & Management	Staff Management System	Director Umum Head of HR	2006/10	Indicator on Scorecard
6	**Organizational Structure** (in water loss reduction)				
7	***Systems, Processes, Procedures and Product***				
	Water Loss Reduction Program	Organization, measurement, information, incentives	Tech. Director Finance Director	2006/10	Indicator on scorecard
8	**Contractors, Suppliers, Third parties**				
	Energy and procurement audit	Begin with audit of energy. Then chemical and pipe material procurement process	Internal Performance Improvement team	2007/2008	Operating costs on Scorecard
9	**Data, Information, Knowledge**				
	MIS/GIS for Performance and Asset Management	Begin with simple MIS to supply benchmarking and other performance indicator data	Tech. Director Finance Director	2006/07	Monthly availability of KPIs
10	**Organizational performance**				
	Benchmarking System	Joining PEPRMASI System	Main Director	2006/10	All Indicators on Scorecard

302. Internal Performance Improvement Team (IPIT). Many past performance improvement plans have failed for lack of application of the opening principle – lack of "champions", top management support, ownership and on-going development of OD capacity

within the PDAM. To overcome this, an Internal Performance Improvement Team will be established within three months of the loan signing. The team will be 6 in number at least, be cross functional and staffed with senior but volunteer PDAM employees. They will have responsibility for updating the FOPIP each year as part of the Strategic Plan routine updates. The FOPIP will update this document. Its contents and approach will be similar.

303. The IPIT will advise and report to the Directors and be maintained for the life of the Project at least.

304. Good Corporate Governance: It is now widely agreed that many problems in the PDAM originate in poor governance level decisions, or decisions that have not involved sufficiently the owners and stakeholder of the PDAM. The GCG program aims to correct this problem. The WSSP is founded on a commitment of the participating local governments to reform and good governance of the water and sanitation sector. If the Badan Pengawas is not constituted in accordance with national guidelines, it will be by loan signing.

305. The seven components of the GCG will cover establishment of (1) a GCG system (2) the appropriate role of the Badan Pengawas (3) similarly for the Directors (4) a program to ensure the PDAM progressively complies with PP16/2005 and other laws (5) a program to manage risks, especially corruption and fraud (6) a system for managing PEMDA rights (as owner) and (7) a system to guard the rights of stakeholders. Attachment 4 to the FOPIP details the components of the GCG System and how ongoing performance will be monitored.

306. The Badan Pengawas members will then receive training to improve their capacity to govern the PDAM. They will prepare, launch and be maintaining in cooperation with the Directors a GCG program for the PDAM by the end of the first year of the project.

307. Financial Management Capacity: It is essential that the project finances as well as on-going revenues and expenses of the PDAM be accounted for properly and management decisions be taken on good quality financial data. All PDAMs have weaknesses in the area of financial management. Upon loan signing, the local government in cooperation with the PDAM will establish the temporary project implementation organizations, and nominate staff meeting competency levels specified by the project executing agency.

308. The areas to be addressed are practices that ensure (1) the personnel managing finances are knowledgeable (educated), skilled, experienced and have appropriate values and attitudes (2) appropriate accounting policies are in place and respected with regard to (i) segregation of duties (ii) budgeting (iii) revenue receipt and payments (iv) policy and procedure production and review (v) cash and bank procedures (vi) safeguards over PDAM and local government assets and (vii) management of decentralized offices/branches (3) external audit is effective (4) internal audit is effective (5) reporting and monitoring procedures are effective; as are (6) financial management information systems. Attachment 5 to the FOPIP details the components of these practices.

309. With assistance from consultants, key persons will receive training and be assisted in the first year of the project to improve manage systems for the finances associated with implementation of the project, as well as PDAM revenues and expenses. Particular attention will be given to upgrading the capacity of the internal audit function using professional human resource development and management approaches. Key financial management and procurement practices will be progressively documented, to form a manual of Standard Operating Procedures which will be up-to-date and specific to the PDAM's needs a year before loan closing.

310. Procurement guidelines and practices will also be reviewed (see below) to ensure that they are transparent, effective and efficient, and that the PDAM procurement managers can be held accountable. Documentation of these, along with the financial policies and practices, will help improve the governance of the PDAM, thereby promoting the agenda to allow greater autonomy of the PDAM in return for more accountability.

311. Rapid Revenue Improvement Program (RRIP): The PDAM needs to increase revenue as quickly as possible while keeping down costs. Rapid improvements in revenue will also provide the enthusiasm needed to sustain more long term changes foreseen under the FOPIP. It is therefore important to have early and demonstrable success. This mandatory improvement program (like the water loss reduction program) covers this need.

Attachment 6 to the FOPIP describes actions that will be taken to immediately to improve revenues of the PDAM.

312. The areas covered by the Program are (1) improving accounts receivable (2) exchanging meters to ensure sales are properly recorded (3) improving the information held with respect to customers (4) acting to reduce illegal connections and (5) making connection fees affordable, so as to maximize revenues and capture the economies of scale that are needed to make the PDAM financially viable. Improved means for customers to make payment, such as more accessible payment points (loket), payment collection agents, electronic transfers etc will also be reviewed and improved as necessary

313. The RRIP will be prepared by the Financial Director within 6 months of loan signing, and action started immediately. Targets will be reflected in the "Performance Scorecard" of the PDAM, progress reported monthly to the PEMDA and updated each year as part of the Strategic Plan Review and preparation of the Annual Work Plan and Budget (RKAT).

314. Annual Customer Survey and Customer Responsiveness Program: The performance of the PDAM relies mainly on the PDAM understanding customer and stakeholder needs and expectations and delivering services which respond to those needs and expectations. But PDAM understanding of their customer and stakeholder perceptions is generally poor. As a critical input to the annual Strategic (Corporate) Plan Review, an annual (or on-going) survey will be completed before July each year to inform the Review. The format of the survey has already been established by PERPAMSI under their benchmarking system.

315. The Customer Services Division of the PDAM will be responsible for implementing the survey and for its analysis. Consultants will advise the Division on approach and methodology, and help with benchmarking aspects of the program. Customer complaints systems will also be established, along with other opportunistic means of gathering information on stakeholder perceptions.

316. The systems and procedures developed will be recorded in a Manual of Standard Operating Procedures specific to the needs of the PDAM, as a part of improving the management system documentation. This is needed to help the agenda of establishing a systematic / quality "management system" specific to the PDAM.

317. Annual Review and Update of Corporate Plan: The current corporate plans of the PDAMs participating in WSSP are very low quality. They have little relevance to serving stakeholder needs, are based on visions that are not credible, have no performance indicators by which achievement of their objectives can be assessed, have not allocated the resources needed for their implementation and do not have contingency plans. In summary, present plans are not effective. But a Strategic Plan is vital to improve coordination and act as a reference against which the Badan Pengawas and Directors can be held accountable. A Plan is essential for improved governance.

318. The Corporate Plan will be reviewed and upgraded (or prepared from anew if the current document is considered of no use) by September each year. This will form the basis of the Annual Work Plan and Budget (RKAT) currently required of the PDAM. The Corporate Plan will be prepared under the guidance of the Badan Pengawas and discussed with PEMDA and the Stakeholder Committee. It will contain an assessment of the external environment and the mission / vision of the PDAM. In its assessment of the external environment, social and environmental aspects will also be included. Targets will be agreed for strategic objectives as operationalized in the "Performance Scorecard" for the PDAM. Options for physical and non-physical investment under the project will be considered each year by PDAM governors (members of the Badan Pengawas) and actions chosen which will effectively and efficiently meet the objectives, for inclusion in the next year's RKAT. Standing procedures for budget approval will be complied with.

319. Good Corporate Governance will be the main means of ensuring the Plan is kept relevant to the ever changing social and institutional environment in which the PDAM operates. The Corporate Plan will be the main instrument through which Directors and personnel understand higher level objectives and coordinate their actions. As part of the Corporate Plan Review, it is expected that reviews will be undertaken of the plans of the various Divisions ("Bagian") that comprise the PDAM and a cascade of objective setting be introduced, so that performance management can in time be realized throughout the PDAM.

320. The performance indicators of the Corporate Plan/Scorecard will be disseminated to the public at least once a year within a month of the results becoming available, as a means of providing succinct performance information to the owners and other stakeholders. This dissemination may be part of a greater public information campaign.

321. Employee Attitude Improvement and Human Resources Management: The perception of PDAM employees about the degree to which the PDAM trust, develops, manages and cares for its employees may be the most dominant factor influencing the performance of the PDAM. Directors and senior managers of the PDAM need to understand employee attitudes in order to design actions, including training, which will improve the capacity and satisfaction of their employees. This practice is widespread in private sector, but state owned enterprises are just beginning to adopt the practice.

322. Like the Customer Responsiveness Program, the Employee (Attitude) Improvement Program needs to be more than just an annual survey; it needs to be approached systematically. With assistance from consultants, a Human Resources function will be established or upgraded to enable it to design, implement, analyze and follow-up with actions to improve people management within the PDAM. The full cycle from HR Information Systems and planning through to employee termination will be addressed, as well as "soft" issues, such as communications, continual improvement, development, education and training, empowerment/involvement, well being/satisfaction and teamwork will be addressed. A Complaints Processing and Grievance Resolution System will be established as part of a Performance Management System.

323. The systems and procedures developed will be recorded in an Employee Handbook specific to the needs of the PDAM, as a part of improving the governance instruments needed to advance the "autonomy but accountability "agenda.

324. Water Loss Reduction Program: No organization can afford to lose the amount of its product the PDAM does, especially when it is a PDAM struggling to provide responsive, effective and efficient services fairly to the whole community. Water losses must be reduced by a systematic approach involving both reduction of technical as well as commercial losses. Past experience of the difficulty of achieving this result will be taken into account by paying more attention to the incentives of senior managers to control losses, by improving the role of measurement in providing incentives and designing plans, and by improved management and operational practices.

325. The program will start by constructing a water balance and attempting to estimate the split between technical and commercial losses, and then develop specific actions based on that estimate. Again, a systematic approach will be taken. The organizational structure will be reviewed to focus attention on control of losses, and operating practices steadily upgraded. Operational practices to detect leaks will be instigated and a simple MIS / GIS introduced to record asset details and provide basic information on the network and its operational characteristics. Record keeping, data collection and analysis, use of computer software to monitor supply and pressure, improved customer and community relations and information systems will all be addressed. Simple methods using the knowledge and innovativeness of existing personnel will be applied as much as possible, but the longer term need to establish District Metering Areas (DMAs) will not be forgotten.

326. A simple 5-year NRW Reduction Plan will be developed by September of the first year of the Project and reviewed by that date each year thereafter as part of the Corporate Plan Review. The Plan will set targets, allocate responsibilities and contain description of review procedures. It will progressively be turned into a manual of Standard Operating Procedures (SOP) to be completed a year before the loan closing date and fully owned by NRW reduction personnel of the PDAM. Consultants will advise on key elements of the NRW system and help the PDAM link their efforts to a national NRW approach and methodology being developed by PERPAMSI. Methods of involving contractors in the program will be investigated, particularly using model incentivized schemes being developed nationally and which are based on "pay for performance". Attachment 7 to the FOPIP describes the fundamentals of a water loss reduction program.

327. The benefits of the Program include increased revenues, greater capacity of the personnel to manage the system, delayed next source development (less negative

environmental and social impact) and better quality water delivered to the customers as ingress into pipes is lessened.

328. Energy audit and other supply processes: The cost of operation, or the PDAM's efficiency, is mainly dependent on the level of prices of inputs, such as electricity, chemicals, piping, and labor. The PDAM and its stakeholders should be confident that it is operating as efficiently as possible. Stakeholder commitment is especially dependent on this confidence.

329. To address frequent concerns expressed by personnel in the FOPIP survey, an audit of the efficiency of the process of procuring inputs will be undertaken. An energy audit will be the first activity, to identify possible efficiency gains and deliver immediate results. The activity overall will lead to production of a Manual of Standard Operating Procedures for Procurement, which should be completed two years after sub-loan signing.

330. Benchmarking and Performance Information Systems Improvement: One vital principle to be adopted is the approach of using data, analysis and continual improvement as the basis for performance improvement planning. Without data from routine and special measurement, information and knowledge is difficult to create and the performance of the PDAM is likely to only improve in a hap-hazard manner, if at all, and certainly not in a sustainable way. A systematic management system recognizes this need (the ISO 9000: 2000 standard on Quality Management Systems and its Indonesian equivalent, SNI 19-9000: 2001 devote a whole Section to requirements for measurement, analysis and improvement).

331. The PDAM will adopt the performance assessment system managed by the PERPAMSI Benchmarking Unit. The 10 performance indicators on the Performance Scorecard are in fact the "primary" (P) indicators in this system. The System also provides the results for the Ministry of Home Affairs indicator set under Kepmendagri 47 / 1999 as well as the international IBNET system sponsored by the World Bank.

332. Data will be provided by June of each year to the PERPAMSI Benchmarking Unit using a data entry diskette provided by PERPAMSI. The PDAM will become a member of the System by paying the small membership fee within 6 months of loan signing and establishing the two-person Benchmarking Team that PERPAMSI suggest as being essential. The performance of the PDAM in relation to peers, other PDAMs in the province and other Project participants will then be monitored, from which performance improvement actions can be incorporated in the annual Corporate Plan Review and the Annual Work Plan and Budget (RKAT).

333. But just submitting benchmarking data is not enough to improve performance. "Process benchmarking" practices will also be introduced. The Benchmarking Team within the PDAM will make comparisons with other PDAMs to identify the best performers, from which visits to these "centers of excellence" can be arranged. The Benchmarking System covers all important aspects of PDAM financial and operational performance and so provides a comprehensive system to measure the factors which are contributing to PDAM performance. Besides performance from the financial perspective, perspectives are provided from that of the customer/stakeholder, quantity, quality, cost and continuity indicators are provided, as well a personnel attitudes and capacity building efforts. The Benchmarking Program will allow the PDAM to both objectively assess performance in relation to its peers, as well as facilitate the operation of the mandatory "Project Performance Monitoring System" (PPMS) required by the Asian Development Bank (ADB) and central government for WSSP.

334. Data, Information and Knowledge creation: While benchmarking should be concentrating on using performance measurement to design improvement plans and communicate with stakeholders, those processes are underpinned by the collection of quality information on finances, operations, asset management and performance. Improving asset information in MI / GI Systems is important as the PDAM becomes more business oriented, and to allay concerns among some stakeholders that state assets are being mismanaged.

335. Performance information systems will be reviewed first and upgraded as necessary to provide the data needed for benchmarking. The Good Corporate Governance Index component number 4 (of disclosure, transparency and legal and regulatory compliance obligations) will also be serviced by this program. Further, the mandatory Project Performance Monitoring System (PPMS) required by central government and the ADB will

also be serviced, as well as ensuring other statutory requirements for provision of information can be complied with.

SPECIFIC PROGRAMS BASED ON SURVEYS AND RESEARCH

336. Actions may also be chosen based on the results of the customer, organizational and employee perception surveys with specific content adapted to specific local circumstances. They are to come mainly from the FOPIP list of best practices (see Questionnaire at Attachment 1 and results at Attachment 2 to the FOPIP appended to each SPAR).

337. The main criteria for selection are (i) they clearly support achievement of the project objectives as indicated on the performance scorecards at (ii) have been identified as priority by a survey or other assessment tool and (iii) there is a clearly identified method for delivering the program. Activities that enable economies of scale will be given preference.

OPTIONAL PROGRAMS AND PROGRAMS FOR TRAINING

338. These are expected to be delivered by (i) PERPAMSI (ii) Cipta Karya (iii) the Project or (iv) purchased by the PDAM from an accredited training provider, based on PDAM identified needs, which will be identified using the survey instrument at Appendix 1 of the FOPIP, as adapted by the Project from time to time. All programs shall include an evaluation of the effectiveness of the training. Specific training needs will be agreed with consultants in the first year and then each year thereafter to ensure efficient preparation of training programs.

4. APPROXIMATE COST OF FOPIP

339. Table 15 shows the estimated cost over 5 years allocated for undertaking the FOPIP for a typical PDAM. The FOPIP contains matters only of concern to the PDAM. It does not cover sanitation. The cost of providing a "standard package" has been estimated and then an allocation as a percentage of this made to each RG, based on an estimate of the total available funds for IDCB activities. The percentage of the standard package is shown in the costing of the each FOPIP.

340. Costs should be shared between government and the PDAM, depending upon where the work is done. The cost of implementing the FOPIP will be paid by the PDAM, local, provincial or central government, depending on the specificity of the activity. Model documents, systems, tools and techniques prepared centrally for project-wide application should be charged to central government.

341. Technical assistance provided specifically to the PDAM, as well as materials and equipment, will be charged to the PDAM. If the PDAM or local government funds the FOPIP, it should be counted as counterpart funds.

Table 33: Summary of Costs and Inputs for the FOPIP

No	DESCRIPTION	Unit	Total	2007	2008	2009	2010	2011
	Approximate Citizens	Nr.'000		1,550	1,550	1,575	1,600	1,625
	Approximate PDAM Connections	Nr.		24,500	32,013	32,288	32,578	32,881
	Approximate Total Persons Served	Nr.		104,000	160,063	161,441	162,888	164,407
	Approximate Total Revenue of PDAM	Rp M	66,789	9,349	12,949	13,844	14,806	15,841
A	SOURCE OF FUNDS							
1.0	Levy on PDAM Revenues	Rp M	452	0	102	109	116	125
	Total fees as % of PDAM revenue (approx.)	%		0.0%	0.8%	0.8%	0.8%	0.8%
2.0	Other Levies on Third Parties in Sector	Rp M	2,073	76	237	408	585	767
3.0	Grants or equity injections	Rp M	4,253	1,256	1,155	713	549	581
	Total Revenue	Rp M	4,423	1,256	1,193	754	592	628
B	USE OF FUNDS							
B.1	Operational Expenditure							
0.1	Wages/Salaries	Rp M	274	45	49	54	60	66
0.2	Office Running Costs	Rp M	367	55	69	73	77	82

No	DESCRIPTION	Unit	Total	2007	2008	2009	2010	2011
0.3	Reporting Costs	Rp M	12	2	2	2	2	2
	Minimum Cost of FOPIP Secretariat	Rp M	653	113	120	130	140	150
1.0	Leadership / Governance Group and Communications	Rp M	123	21	23	24	26	28
	Normal Cost of FOPIP Unit and Project Governance	Rp M	776	134	143	154	166	179
B.2	Capital Expenditure							
2.0	Improve Financial Management and Revenue	Rp M	149	135	6	4	2	2
3.0	Improve Customer Services and Responsiveness	Rp M	185	99	69	6	0	11
4.0	Improve / Update Corporate (Strategic) Plan and other Planning	Rp M	401	161	155	30	26	28
5.0	Personnel Surveys and HR Management Systems	Rp M	293	135	94	64	0	0
6.0	Organizational Structure and Resources	Rp M	383	120	116	49	49	49
7.0	Water Loss Program and Other Processes, Procedures & Product	Rp M	1,744	388	421	302	311	321
8.0	Improve Purchasing and Partner Relations	Rp M	161	0	101	60	0	0
9.0	Data, Information and Knowledge Management	Rp M	87	19	19	17	17	17
10.0	Demonstrate Organizational Performance	Rp M	234	66	66	66	19	19
11.0	Miscellaneous	Rp M	11	0	3	3	3	3
Total Investment (2 to 10)		***Rp M***	**3,648**	**1,122**	**1,050**	**600**	**427**	**449**
TOTAL EXPENDITURE		**Rp M**	**4,423**	**1,256**	**1,193**	**754**	**592**	**628**
TOTAL REVENUE		**Rp M**	**4,423**	**1,256**	**1,193**	**754**	**592**	**628**

Notes:

1. The above represents a 37.5% portion of a standard package.
2. Includes costs of international experts
3. International expert manmonths and associated costs will not be included in "Wilayah Contracts", but consolidated into Contract(s) at a higher level.
4. Sources of funds to be confirmed

Table 34: FOPIP Costs Breakdown Summary

COSTS BREAKDOWN	UNIT	TOTAL	2007	2008	2009	2010	2011
Total Foreign Manmonths	mm	8.3	3.2	2.4	1.1	0.8	0.8
Total Local Manmonths	mm	44.3	11.6	21.6	7.3	1.9	1.9
Total Manmonths	mm	52.5	14.8	24.0	8.4	2.6	2.6
Total Costs Foreign Consultants	Rp M	1,815	701	536	248	165	165
Total Costs Local Consultants	Rp M	741	225	360	107	24	24
Total Consultant (Remuneration) Costs	Rp M	2,556	926	897	354	189	189
Total Training Costs	Rp M	790	120	156	162	171	181
Total Purchases equipment and software	Rp M	244	9	88	49	49	49
Other (travel, accomm, campaigns, fees, etc)	Rp M	58	67	-91	34	17	30
Total FOPIP Capital Expenditure	Rp M	3,648	1,122	1,050	600	427	449
Consultants as % FOPIP Expenditure	%		83%	85%	59%	44%	42%
FOPIP/PIU and Leadership Group Opex	Rp M	776	134	143	154	166	179
Total FOPIP Expenditure	**Rp M**	4,423	1,256	1,193	754	592	628

Notes:

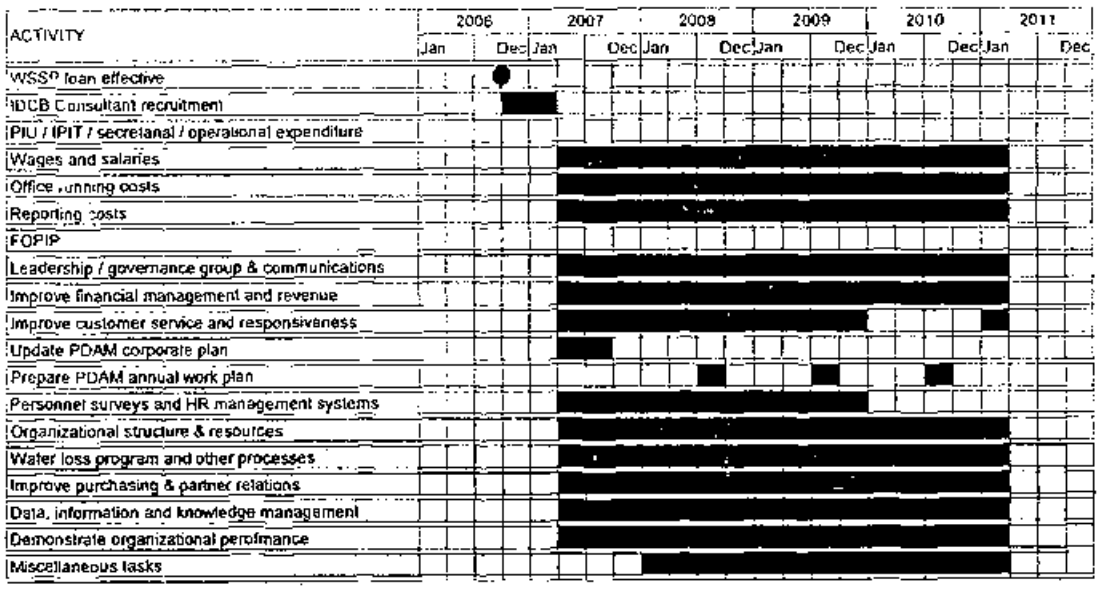
1. The above represents a 37.5% portion of a standard package.
2. International expert manmonths and associated costs will not be included in "Wilayah Contracts", but consolidated into Contract(s) at a higher level.

5. APPROXIMATE TIMING OF FOPIP

342. Figure 16 shows the approximate duration, sequencing and timing of FOPIP activities. It is clear that most IDCB activities will be opportunistic in nature. What is important is to begin addressing the 10 categories in a holistic manner and to use early

success and experience to help design the next round of improvements. The activities proposed in the first year are sufficiently concrete in nature to enable PDAM personnel to see early result and encourage the next round of planning.

Figure 16: Outline of FOPIP Implementation Schedule



H. OUTLINE OF AN ACCREDITATION SYSTEM

343. There is a close link between the reform agenda of promoting more autonomy / accountability and accreditation for personnel and organizations working in the water supply and sanitation sector. The more autonomous the provider (the PDAM), the more likely the PDAM will recruit in the open market – and so the more accreditation is needed to ensure standards are maintained and to facilitate the movement of skills through the sector. Accreditation systems can also protect the PDAM from the practice of "titipan", which means the assignment of unqualified personnel to the PDAM by PEMDA or through nepotistic practices of Directors and other powerful persons.

344. For these reasons the TOR requested the consultant "outline a system of accreditation of personnel and organizations (including civil works contractors and consulting firms) that will guarantee competencies and levels of performance through accreditation."

345. Discussions have been held with PERPAMSI, and MoHA, and local branches of the contracting association, the Association of Water Supply Contractors. Discussion with professional associations such as those representing the accounting profession and water and sanitary engineers are also needed. In recent times INKINDO and BAPPENAS have worked together to establish an accreditation scheme for consultants – lessons from this exercise are that it is the individual who is best accredited, not the firm, because firms are so transitory and they also find it easier to capture the accreditation agency and exclude competition.

346. The main competencies for sector level staff have been outlined in the IEA / LIDAP. Organizational competencies for PDAMs have also been outlined (in the FOPIP categories). PERPAMSI also have established a set of competences for middle level PDAM personnel and provide a certification service for senior personnel. The service is governed by a board, consisting of members drawn form various central government agencies and the scheme is "accredited" itself by the Ministry of Labor and Transmigration. There is a separation of testers from those delivering the training courses within PERPAMSI, to ensure that conflicts of interest do not adversely affect standards.

347. There seems little reason to go beyond this framework at present for individual accreditation, but rather, the system could be formalized and upgraded. There are two main problems though: (1) one of the main challenges is to get PDAMs and especially PEMDA to respect accreditation when choosing personnel for promotion and for directorships. Work

under the LIDAP to reform the local legal framework should include this in the (re)drafting agenda; and (2) there has not been any formal pronouncement by responsible central agencies – the MoHA or Public Works – as to the status of the scheme. Without this formalization, local government may be reluctant to adopt rules which they may see as restrictive, illegal or at as a perverse incentive with respect to maintaining an employment market to their liking.

348. The Ministry of Public Works has the authority under Law 18/1999 concerning Construction Services and the establishment of standards in the construction industry, including the accreditation of contractors and consultants. Contactor and consultants in the water supply sector are included. Government Regulation (PP) 28 of 2000 regulates the role of business and the community with respect to services, while PP 29 of 2000 prescribe the set-up and way construction services should operate in the Indonesia.

349. The mandated duties are fulfilled through a foundation (Lembaga Pembina Jasa Konstrusi - LPJK) or the Construction Services Foundation according to PP 30 / 2000. It has branches in most provinces and an oversight board constituted from a wide cross-section of actors in the industry. Most Indonesia trade association concerned with construction, including the Association of Water Contractors (AIKINDO) are members of the LPJK.

350. Again, there seems little reason to go beyond this framework. More voice might be given to PDAM, perhaps through greater representation in the LPJK through PERPAMSI.

351. The main challenges to creating a formal system of accreditation of individual and organizations working in the water supply sector are (i) obtaining a clear consensus on whether the scheme should be administered for the sector, by industry sub-sector or profession (ii) locating an "administrative home" for the chosen structure (iii) agreeing the degree to which the scheme will be regulated – the extremes being external and tight regulation versus self regulation; and (iv) funding mechanisms. The entry point appears to be to concentrate on upgrading the PERPAMSI individual accreditation scheme for PDAM personnel and to work through MoHA to increase the official support for the scheme.

I. REVIEW OF PRIVATE SECTOR PARTICIPATION

1. BACKGROUND

352. A review of the current involvement of the private sector in providing water supply and sanitation services was carried out in each RG as part of the 4-days of field work. The data collection consisted of:

- A number of questions in the LIDAP survey concerning perceptions on PSP;
- A questionnaire to be completed by a director of the PDAM
- A questionnaire to be completed by the local branch of AIKINDO
- Certain questions during interviews with key staff,
- Provision of copies any major contracts with the private sector; and
- Observation.

2. INSTANCES OF PSP FOUND

353. A range of PSP was found in the larger PDAM on Java, but nothing of any substance in small PDAMs in Sulawesi and in Sumatra. The most advanced RG was Serang, where the PDAM, beginning in 1992, has been involved as a "licenser" or "concessionaire" of various private sector schemes, mainly designed to provide the high industrial demand in the Kabupaten. It is involved in four schemes. All the schemes pay a royalty to the PDAM and go about their business basically without further PDAM involvement. At one location the PDAM is actually producing and selling water back to the concessionaire – who distributes it to his (mainly industrial) customers. None of the contracts are performance oriented or based – payment to the concessionaire is not related to achievement of performance targets or

standards. At a small scale, there is some carting of water, although the PDAM operate a small fleet of tankers.

354. PSP in sanitation services appears not to have any formal agreements. Private operators provide de-sludging services.

355. A similar pattern was observed in Bogor and Bandung, but on a much smaller scale. The most common reason given for PSP was the inability of the PDAM to service a new housing estate, so the developer was supplying the service himself. There appears to be no doubt that the PDAM has the authority to demand it be consulted with respect to proposals, and to impose charges if it so desires. The PDAM commented that often they (the PDAM) were requested to take over the scheme(s) after the developer had completed his development, but the schemes were small and difficult to service. Bigger schemes, which presumably are no more profitable because they capture economies of scale (and scope), continue to be operated by the developer (and quite likely profitably – with tariff setting power being retained fully by the developer).

356. There had been various attempts in Kabupaten Bandung and Kota Semarang over the years to procure a private sector partner under a concession model, but negotiation had always failed. Semarang in particular have a long history of both BOT and concession proposals, but had failed to conclude a deal on any. The inability of government and the PDAM to define their own objectives with respect to PSP and the vested interest the PDAM has in maintaining its monopoly probably lead to break-down of the negotiations. A number of small scale providers are known to operate in Kabupaten Bandung with the tacit approval of PEMDA. These providers work outside of the PDAM legal framework, but because they are seen to provide a service that the PDAM has failed to do, are not discouraged by local government, somewhat to the chagrin of PDAM.

357. Surprisingly, more "low-powered" cooperation with the private sector appears quite limited. No service agreements for specialized maintenance and simple outsourced tasks such as meter reading were identified. No management contracts were identified, but a number of PDAM report having received proposals for Build Operate and Transfer (BOT) schemes, presumably because the private sector see this mode as having the lowest risk.

3. THE INSTITUTIONAL ENVIRONMENT

THE BARRIERS

358. Private sector participation is an emotive issue in the Indonesia water and sanitation sector (as evidenced by the backlash against the new law on water resources - Law 7 of 2005 - and the judicial review granted by the constitutional court). In theory it should not matter who the service provider is – public or private – so long as the service is provided as efficiently as possible. In practice, there are a number of barriers:

- The ideological barrier – the belief that the profit motive will cause private sector participants to disregard the social obligations that any public water supply provider will always have – publicly or privately owned. This attitude has perhaps been strengthened over the years in Indonesia because of the current leaders were brought up in a time of "big – government", and the bitter experience of "crony capitalism" of the late 1980s and 1990s.
- There is so little performance information available that it is difficult for stakeholders to make judgments about the effectiveness and efficiency of PDAMs. The result is that many key decision-makers have little or any idea as to the relative efficiency of their PDAM and therefore are not sensitive to arguments that the water supply service needs to be more efficient, even if this means more participation of the private sector".
- The attitude of the PDAMs themselves. They enjoy a monopoly and have little real pressure on them to improve performance – be it coverage, service or efficiency. While one might argue that it is in the interest of the PDAM directors to engage with the private sector, there are obvious risks for the PDAM that a risk – averse president Director may judge private sector participation to be "not worth the effort".

- Asymmetries of information: The latter two points highlight problems with information flows in the sector. The PDAM has most of the information needed to mount an argument for or against PSP and others do not. Combine this with their monopoly position, and the private sector will only ever be able to enter if the President Director agrees – unless he himself is directed by an owner who acts more on instinct than analysis.

359. To help assess the real position of key decision-makers on the issue, the LIDAP survey included a number of questions, both directly related to PSP, and on the aspects of the environment of interest to potential private sector partners. Table 16 shows a typical result for these questions.

360. The results highlight a number of areas that need attention if private sector participation is to be promoted. These include:

- Questions 75, 76 and 77 relate to different modes to PSP, about which there are very different perceptions:
    - Question 75 results indicate it is common for there to be little resistance to the idea that the private sector should be allowed to invest only (with the existing PDAM operating the system).

Table 35: Perceptions – Is the Institutional Environment Conducive to PSP?

Question	Category	Perceptions / Action that support PSP nr	Practice	Gap	Rank
	General Environment				
11	2. current PDAM performance	11	Better the tariff is increased now	1.60	74
13	2. current PDAM performance	13	Service quality ruins the public image of Bupati	1.60	74
14	2. current PDAM performance	14	Service quality ruins the public image of the DPRD	2.00	57
18	2. current PDAM performance	18	PDAM has too many personnel to be efficient	1.60	74
46	5. WSSP institutional activities	46	Better if BAPPEDA or a Regulator sets WSS policy, not PDAM	1.60	74
47	5. WSSP institutional activities	47	Regulation, like Jakarta Water Supply Regulator, will be successful	2.80	28
48	5. WSSP institutional activities	48	Tariff level must cover costs	2.60	36
61	5. WSSP institutional activities	61	PDAM Annual Budget is realistic and published	1.80	65
64	5. WSSP institutional activities	64	PDAM paid a subsuidy for providing social services	1.40	86
65	5. WSSP institutional activities	65	PEMDA ready to pay a subsidy	0.20	126
73	5. WSSP institutional activities	73	PDAM ready as "PT" by 2008.	4.00	8
117	8. Managing finances	117	Community objects if tariff rises > 50%	1.80	65
121	9. Physical implementation	121	Single contract will raise efficiency	2.60	36
122	9. Physical implementation	122	Sharing procurement will raise efficiency	2.00	57
123	9. Physical implementation	123	National contractors better than local	2.40	46
124	9. Physical implementation	124	Whatever, consultant supervision needed	1.40	86
128	10. Performance monitoring	128	Need performance management system from start	0.40	119
134	10. Performance monitoring	134	Stake. Committee has active monitoring role	2.20	53
			Average	1.89	65
	Specific - private sector participation				
75	5. WSSP institutional activities	75	Private investors in PDAM are welcome	0.80	107
76	5. WSSP institutional activities	76	Private investors are welcome to build new systems.	1.60	74
77	5. WSSP institutional activities	77	Private contractors are invited to manage existing systems	3.00	22
			Average	1.93	63
			Average Overall	1.91	64

Notes:

1: Practices are a selection from the main questionnaire, but those that have implications for use of the private sector
2. Gap is the difference between perceived importance assigned by respondents and a theoretical maximum
Rank (in resistance) is based on gap. The less the gap, the less important the practice or perception is for changing during
3. Project implementation, if PSP is to be promoted through the LIDAP.

  - Question 76 indicates that more resistance is likely with the suggestion that the private sector should be allowed to develop new or "greenfield" sites.
  - Question 77 results however typically indicate that there is likely to be considerable resistance to allowing the private sector to operate existing PDAM facilities.

- The importance of the tariff and regular increases appears to be under-valued. The suggestion that tariffs were too low at present, even for PDAMs, is far from universally accepted. The presence of the private operator is hardly likely to change this perception overnight
- Independent regulatory arrangements needed for confidence building with the private operators is not well understood or accepted; and
- Transparency, participation and wide dissemination of performance information are not the norm, and so pose problems for the open, competitive bidding process needed to sustain PSP. The resistance to or skepticism concerning the Stakeholder Committee probably summarizes the situation – any reforms, including introduction of private sector participation, which threaten the current power holders will be treated with great caution.

361. Positive signs in the institutional environment with respect to encouraging PSP include:

- A lower resistance than expected to the suggestion that the PDAM (and any private operator?) should be paid to provide services to low income households or households that cannot afford to pay the full amount for a service; and
- There is an acknowledged need to instigate performance management.

WHAT OF DESIGN, BUILD AND (EXTENDED) OPERATION?

362. Questions 121 to 124 probed perceptions concerning the proposed "Design Build and Operate" (DBO) approach to WSSP. The response was variable, but as the table shows, there can be significant resistance to the proposal. Further analysis of these questions may reveal a different perception between PDAM respondents and those from elsewhere in PEMDA, particularly if there is also strong resistance in the PDAM to private sector involvement in operation of existing assets.

ADMINISTRATIVE PREPAREDNESS

363. Moving beyond emotive (behavioral) barriers, there are also some very concrete barriers in terms of institutional arrangements and experience (let alone the willingness of the private sector to invest in the sector – mainly because tariffs are so low and their change is so fraught with risk, particularly political risk outside their control).

364. The consultants conducted various discussions with PEMDA officials and local contractors during the 4-day visit, using a set of questions related to assessing whether the institutional environment is conducive to PSP. Table 16 shows on the left the areas probed, and an overview of the environment on the right. It is obvious that the larger PDAMs on Java are far more advanced than those in Sulawesi or Sumatra, but even so, PSP is very much approached in an ad-hoc manner.

365. Discussions with AIKINDO in a number of locations were also revealing as to the extent that PDAM controls other possible providers. In a number of locations AIKINDO members, when asked whether they felt confident they could provide more investment and

management-oriented services than at preset answered "yes" when alone with the consultants, but tended to withdraw from this position if PDAM staff were present.

4. THE LEGAL / REGULATORY FRAMEWORK

366. Discussions were held with AIKINDO representatives in a number of the larger RGs. These discussions, complimented by the Consultants experience and observations, indicate there are certain circumstances which encourage the private sector to seek PSP opportunities. These circumstances involve conditions that provide positive incentives, and also circumstances that involve the minimization of risks. Table 18 summarizes these.

367. The greatest obstacle in the legal and regulatory framework is the uncertainty of payment stemming from control over tariffs by the local administration and politicians. Article 60 of PP 16 / 2005 opens the door for tariffs largely determined by formula, and gives a role to an "independent regulator, be it the central government level. These are two key issues which will need to be "operationalized".

5. THE WAY FORWARD

368. The WSSP project contains a number of features which will promote greater private sector participation; these include (i) the design build and operate (DBO) approach to water supply construction (ii) the insistence that tariffs begin to reflect costs (iii) creation of a Stakeholder Committee to increase the administration's sensitivity to performance (iv) introduction of performance agreements between the PDAM and PEMDA to put at arms length the operator and regulator and (v) the general improvement of the sector structure to separate roles, highlight weaknesses and make each actor more accountable.

369. The DBO contracts are expected to demonstrate that the private sector can be trusted to perform with better quality work, more efficiency and better marketing, that performance is better than the PDAM could do alone, that when operators are paid for performance the performance will be better and generally that risks shared with the contractor help the PDAM perform better themselves. The risks involve possible corrupt and fraudulent behavior in the bid process and capture of supervisory bodies by the contractor.

370. The project's viability rests on tariffs being set at full cost recovery levels Once this becomes the norm, the private sector will be much encouraged to participate in the sector. Achievement of sustained cost recovery levels is a major challenge. While loan covenants may help, it is more likely that the FCR state will only be sustained once institutional development has reached a threshold level. A key to this will be a combination of pressure to instigate automatic tariff increases under P 16/2005, improved transparency and accountability from the PDAM and improved capacity of the key sector organizations.

371. Creation and operationalization of a Water Supply and Sanitation Stakeholder Committee is an important driver of this change. It should increasingly act as a break on the secretive and bureaucratic way decisions are made in the sector. It should be the driver of improved governance in the sector, and so give hope to the private sector that what is valued is performance and not other criteria, such as closeness to the administration, when the government is pondering the most efficient way to provide services.

372. The proposed introduction of performance agreement between the PDAM and PEMDA is also a crucial step for promoting PSP. Once the PDAM is being managed at arms length and according to performance, it is just a small step to managing a private sector operator under the similar arrangements.

373. Finally, the LIDAP provides a set of actions which should move the sector from its present confused state to one where the policy making, regulatory and operational roles are better defined. The LIDAP is expected to address many of the barriers that restrict private sector entry. Improving tariff setting mechanisms and creating a subsidy scheme founded on a fully costed and fully funded public service obligation subsidy mechanism removes the main obstacle. But performance agreements and a independent "umpire" (regulator) also provides the RG with hands-on experience of operating at arms-length to the provider. Similar experience will come from initiatives to increase both the PDAM's autonomy and accountability through various actions, including building capacity of Directors and the board

of Supervisors and upgrading the local legal framework to orient it more to clarifying authority and accountability based on performance. Improved sector leadership and coordination based on the early drafting of a integrated water and sanitation sector strategic development plan in consultation and with the participation of key stakeholders. Improved information flows and performance management underpin all these actions.

374. The FOPIP within the PDAM is also important in promoting PSP, even if less directly. As the PDAM becomes more efficient, there will certainly be a greater realization that there are limits to what they can so alone, the employees will become more employable in the sector (even working for the private sector), and the private sector will feel less at risk in working with PDAMs. The WSSP does not aim to promote private sector participation per se, but in promoting sustainable investment, it is in fact creating the conditions under which private sector participation become much more likely.

Table 36: Legal / Regulatory Framework and Credit Enhancements[5]

No	Aspect	Issues / Finding
Aspects which impede		
1.	The agreement will require higher approvals	Past practice has been that decisions stop at PEMDA level. This is manageable for contractors. Whether PP 16/2005, or the re-write of Keppres 7/1998 will alter the situation is unfolding
2	Excessive bond / insurance /bid security	Has not been an issue. Perhaps too low in the past
3	Possible completion during life of contract	Not an issue, except where dramatic increases in coverage or water quality are required, or reduction of water losses.
4	IRR will be recalculated ex-poste	Is currently not foreseen by national regulators, but may become an issue as the generally accepted 22% IRR is considered more fully in the light of economic stability.
5	No government involvement	Hard to avoid in Indonesia. Many investors in Indonesia like some involvement to provide some security.
6	Government procurement procedures applied to concessionaires	Has not been a major problem in the past, but Law 8/1999 and anti monopoly laws may make this more of an issue in the future. The DBO contract will need to address this issue. Theoretically, if the DBO is competitive, need no further competitive process.
7	DED before start	The DBO approach addresses this common barrier.
Aspects which encourage		
8	Contractor free to choose areas, method etc	Government has in the past been vary wary of "design and build" in the sector. ON the other hand, contractors complain not enough feasibility work has been dome before they must offer firm bids. Needs good consulting work.
9	Gov. willing to assist with planning approvals, licenses etc	Not so much of a problem if PDAM involved.
10	EIA and processing assisted by Gov.	Not a major issue with water supply, but will be more so if sanction moves in PSP direction.
11	Credit enhancements possible	Nothing at present. Minimum would be PEMDA to pay a subsidy for services to low income households.
12	Physical security guaranteed by Gov.	Supposedly not a problem, but government has made it clear guarantees cannot be provided.
13	Tax holiday possible	Being considered at present
14	Sales tax etc exemptions	PDAMs have not been able to get them.
15	Public liability limitations	Not an issue, but may become one
16	Land procurement aided by Gov	PP 36 / 2005 will help.
17	Value capturing possible	PEMDA have traditionally worked schemes involving land swaps etc. Just needs the sector to be more profitable.

[5] At present this refers specifically to the stance of Provincial / local government, but can be applied equally to the central governments stance

Table 37: Fact – Is the Institutional Environment Conducive to PSP?

Item	PSP Consideration	WSSP Conditions
1.	Is there a local government regulation (PerDa) that specifies the conditions under which the private sector will be permitted to participate in the provision of urban and public services?	Only Bandung have prepared a PerDa. Without this, investors may feel at risk.
2.	Does the local strategic plan (Renstrada) and the local development program (Propeda) contain specific references about local government policy towards the role of the private sector in providing public and urban services?	It appears that Serang, Bogor, Bandung and Semarang believe at this level the private sector have a role, and have mentioned it. Other RGs not so advanced.
3.	Do any of the local Dinas strategic plans (Renstra Dinas) contain specific references about local government policy towards the role of the private sector in providing public and urban services?	Those that mention it do not address the real issues, which are the need for realistic tariffs and certainty that they will be adjusted according to contact terms. No real awareness of the role the PS can play in more mundane matters, such as supplier of special services
4.	Has a special Team been formed at within the local government to promote and facilitate PSP activities and projects?	No. Bandung, Serang and Semarang appear to have contacts between the PDAM and the investment promotion board (BKPMD)
5.	Has the local government ever made a PSP project proposal to the private sector?	Bandung only
6.	Has the private sector ever made a PSP proposal to the local government?	Semarang, Bogor, Bandung, Pemalang, Semarang certainly
7.	Has the local government ever conducted a pre-feasibility study for a PSP project?	Serang, Bandung, Semarang, Maros
8.	Has any study or special review ever recommended that potential exists to development a commercially viable PSP project for a public or urban service?	Yes, in Serang, Bogor, Bandung, Pemalang, Semarang, Maros
9.	Are there any public or urban services that have already been contracted to the private sector?	Septage removal with vacuum trucks appears to be the only service consistently provided. Many private real estate developments also.
10.	Has the local government or any other 'local forum' ever conducted a workshop or presentation to promote local PSP opportunities?	Not known other than certainly Bandung, but surprising if any other than Bandung.

V. PUBLIC HEALTH AND HYGIENE

A. BACKGROUND

375. Water supply and sanitation (WSS) health problems are affected by three major factors: (a) infrastructure to provide clean water; (b) education and behavioral practices; (c) infrastructure to take dirty water away and ensure it does not pollute the environment. Available data on the importance of these factors are summarized in Section VIII.K, where it is used to estimate the economic benefits of improvements in water supply and sanitation. No single answer is available, since each individual location will have its own special characteristics. What is known, however, is that WSS diseases are lower in Indonesia than the SE Asia and world averages[6][7]. This agrees with Ministry of Health (MoH) diarrhea disease data and is probably the result of: (a) almost universal boiling of water for human consumption; (b) heavy rains which wash away pollutants. WSS diseases are 30% above those in Europe, however, and so further savings are available. Baseline data shows that these could be obtained from changes in all three affecting factors.

376. Even in locations where appropriate water and sanitation options are available, it is still the factor of human behavior that poses perhaps the biggest challenge to the problems of finding effective mechanisms to interrupt or reduce disease transmission. The problem is so formidable that, in Indonesia, many programs and projects have tended to focus on technical infrastructure (clean water or improved sanitation) or medical treatment solutions (Oral Re-hydration Therapy), rather than attempting to tackle the "human behavior" challenge. Yet, behavioral change is seen as the principal mechanism for achieving hygiene improvement and further reduction in disease transmission.

377. Despite the evidence pointing to the benefits of increased quantities of water on health, the relationship is not simple and most research has made significant assumptions about water use. Hygiene is not solely related to availability of water, but also to specific hygiene behaviors such as hand washing at critical times, for instance before eating and cooking and after defecation. Studies suggest that a median reduction of 35% in diarrhea disease morbidity from improved hand-washing is achievable through well-designed hygiene education programs. This indicates that household-targeted interventions deliver significant improvements in health even when environmental conditions and services are not conducive to improved health, although as with all environmental interventions the range of impacts is considerable.

378. The objectives of the health and hygiene assessment are to:

- assess current health and hygiene practices as they relate to water supply and sanitation,
- record current levels of water-borne diseases
- assess broad impacts of these diseases,
- outline current on-going awareness and education programs, and
- define additional programs for implementation as part of WSSP.

B. CURRENT STATE OF PUBLIC HEALTH IN WSSP LOCATIONS

379. Concerning assessment of public health, diarrhea has been singled out for monitoring for two reasons. Firstly, in many countries, dehydration from watery diarrhea is a major cause of death during infancy and childhood and, secondly, the condition is amenable to treatment by oral rehydration therapy. This combination makes diarrhea a priority concern for health services.

[6] This assessment was confirmed by the TA 4063-INO Community Water Services and Health Project which examined MoH surveys from 2000 and concluded that "diarrheal disease incidence in Indonesia is already fairly low for children under 5 on a national basis".

[7] Demographic and Health Surveys (DHS) data was also reviewed by the Consultant, however the coverage of the data provided through other sources was considered more comprehensive.

380. The following Table provides numbers concerning the most recent statistics on water borne, water washed, water based and vector diseases in the proposed WSSP project area.

Table 38: Cases of Water Related Diseases in Project Area 2003 - per 1,000 persons

Location	Dengue fever	Diarrhea	Cholera	Dysentery	Typhoid	Hepatitis
Kab Serang	0.15	28.07	0.10	3.18	0.89	0.03
Kab Tapanuli Tengah	-	-	-	-	-	-
Kab Barru	0.63	13.33	-	-	-	19.47
Kab Jeneponto	0.20	10.73	-	1.87	1.45	0.00
Kab Maros	2.46	24.03	0.01	4.11	1.07	0.19
Kot Palopo	0.19	40.53	-	-	-	0.01
Kab Bandung	0.22	32.17	-	0.19	0.29	0.00
Kab Bogor	0.11	26.48	-	-	-	-
Average Current Scope	**0.57**	**25.05**				
Kab Pemalang	0.01	11.77	-	2.61	2.89	0.12
Kot Semarang	0.82	18.36	-	-	-	-
Kab Tapanuli Utara	-	25.03	-	-	-	-
Kab Sidenreng Rappang	0.79	13.62	-	-	-	0.01
Kot Banjar	0.20	14.33	-	-	-	-
Average Locations	**0.53**	**21.54**	**0.06**	**2.39**	**1.32**	**2.48**
Average Indonesia		**91.40**				

Source: WSSP analysis

381. The Consultant experienced severe difficulties in obtaining data in the format required, especially in North Sumatra. Some of the reported data also appears unreliable. However, overall the data indicates that level of diarrhea in the Project area is relatively much lower when compared with the Indonesian average.

382. It is of interest to note that the highest incidence of reported diarrhea occurs in Palopo. A further discussion on this topic is included in Section VIII.K.2.

383. It should be noted that it is generally assumed that only around 10% of diarrhea cases are reported in the community health centres since only quite severe cases will seek medical assistance. This phenomenon is dealt with in the DALY data, however, which uses WHO defined standards.

384. Concerning standards, discussions with the various Dinas Kesehatan (Regional Government Health Office) in the Project locations indicate that to date specific targets for disease, quality of raw and drinking water, types of toilets used etc have not been set and thus at the present time performance monitoring with regard to their activities is not carried out.

C. WATER AND ENVIRONMENTAL MONITORING ACTIVITIES

1. OVERVIEW

385. District health programs throughout Indonesia are based on a common pattern. Several of these programs are available for use by the Project. The activities performed by the Dinas Kesehatan include tasks aimed at prevention and control of diarrhea, sanitary inspections for houses and also commercial and public places, water quality monitoring, school health programs, community health programs and assistance in construction of private water supply and sanitation facilities.

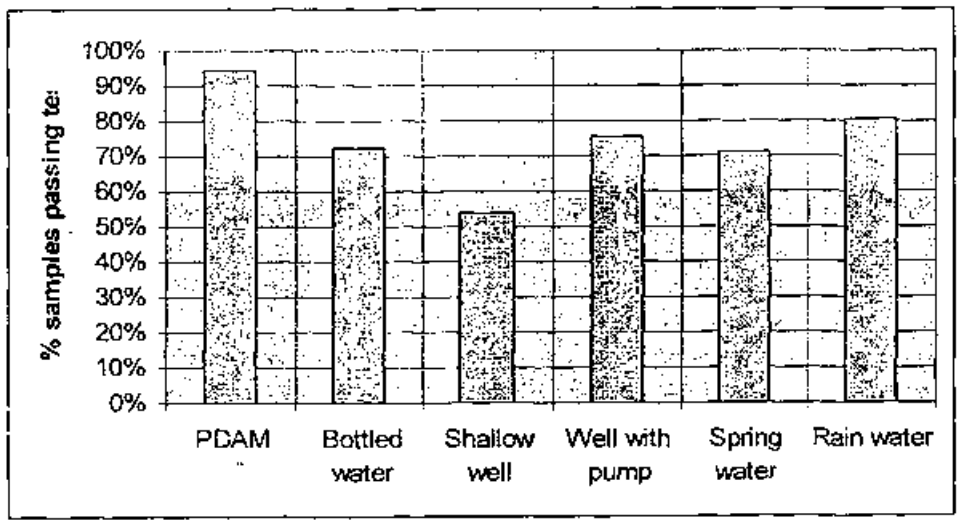
386. Community empowerment is the key approach used by the Dinas. Development and construction of facilities is based on community demand, with as far as possible facilities being developed entirely by using community resources.

2. DRINKING WATER QUALITY

387. Drinking water quality monitoring is carried out based on MoH Decree 416/1990 and 907/2002. Standards monitored are specifically for drinking water. These decrees outline the responsibilities and authority of a number of agencies and also include the relationship between them. The decrees include the organizational structures to be used along with the legal basis for testing programs. Testing is done by both the PDAM and the Dinas Kesehatan.

388. In the Project area discussions with the various Dinas Kesehatan indicate that water quality monitoring programs have been constrained due to limited availability of funds leading to limited equipment and labour.

Figure 17: Water Quality Monitoring - % Samples Passing Bacteriological Tests



Notes:
1. Based on a detailed sampling obtained in Serang, Pemalang and Maros.
2. Bottled water refers to private vendors supplying usually in 19 liter bottles.
3. Rain water refers to private tanks collecting rain water from roofs etc.

389. Only a limited number of results could be obtained on water quality testing. No data could be obtained from Sidenreng Rappang, Tapanuli Tengah and Tapanuli Utara. The results of testing PDAM water indicate that the quality is relatively good. Shallow wells in most locations were found to have unacceptable bacteriological quality in around half the samples tested. It is surprising that bottled water or vendor supplied water is of considerably lesser quality than PDAM supply.

390. From discussions with the various Dinas Kesehatan it appears that the coordination of activities with PDAMs is less than optimal. Equipment problems and lack of funding have led the Dinas to focus on bacteriological testing which means that other potentially harmful characteristics are not being monitored.

3. WASTE WATER QUALITY

391. In the WSSP Project areas the survey found that approximately 56% of existing access to sanitation in urban areas is through on-site sanitation since government policy makes households responsible for the treatment and disposal of wastewater. The major portion of this wastewater from toilets is passed to septic tanks for treatment. A small portion is dealt with direct by leaching systems. Septic tanks provide only very limited removal of pollutants – around 33% - yet surveys indicate that around most of the effluent from septic tanks was discharging direct to surface drains. A further problem is that around 80% of bathroom, kitchen and laundry wastes are passed direct to surface drains without any form of treatment. Regulations generally require that septic tanks be provided with leaching systems; however, this regulation is not enforced. Septic tank effluent, along with untreated wastewater from kitchens and bathrooms, therefore flows into drainage systems creating costly and severe environmental pollution of urban areas.

392. To the present time waste water quality monitoring is not an area which is a concern to the Regional Government. Bapedalda is the Regional Government body responsible for control of adverse environmental impacts. However, there monitoring programs are limited and operate on the basis of "self-monitoring" with regard to industry. Industries are required to treat their waste to discharge standard. They are further required to test there wastewater treatment plant effluent on a monthly basis and send the results to the RG. In practice, this results in considerable environmental pollution from industrial sources.

393. Concerning domestic waste, neither Bapedalda nor Dinas Kesehatan has a waste water quality monitoring program. Dinas Kesehatan does however; have a program for inspection and checking of sanitation facilities. This monitoring is based simply on inspection of the sanitation facilities, checking the local environment for evident damage and observing local community behaviour. Low income areas are generally targeted in these activities. Special programs are mounted in areas of disease outbreak. This qualitative approach is less than optimal but appears relatively effective, given the limits on available resources. After completion of inspections a report is provided to the owner of the water and sanitation facilities, outlining any problems and suggested remedial actions. If the owner is a PDAM customer, a copy of the report is provided to PDAM.

394. Although domestic wastewater quality is not specifically monitored it is of interest to note, with reference to Figure 17, water quality in shallow wells is relatively badly polluted compared with that from deeper wells and other sources.

4. Public Awareness and Education Programs

395. Centrally a special unit attached to the Ministry of Health – the Center for Health Promotion – has been established with the function and responsibility of developing national guidelines on health promotion and assisting divisions within the Ministry in the development of specific programs.

396. This unit has achieved good results to date and it therefore proposed that materials prepared by this unit will form the basis of PH&H initiatives under the WSSP.

397. One of the more popular programs is the Health and Cleanliness Behaviour Program. The objective of the program is to make people aware of the causes of health problems and thus to assist in reduction of these problems. The program uses methods of advocacy, social support, social communication and community empowerment.

398. A further unit known as the Water and Sanitation Behaviour Promotion unit runs programs and activities aimed at increasing awareness with regard to healthy water and sanitation practices. This unit has been quite successful in increasing awareness concerning safe practices. Specific programs for sanitation and diarrhea reduction have focused on the urban poor. Programs have focused on achievement of improvements through behavioural change. The program takes an integrated approach by involving local government, the health care infrastructure, local leaders, teachers and primary school children, men's groups, women's groups and mothers of at-risk children.

399. Although much work has been done in the area of public awareness and education programs for public health and hygiene, their still remains areas where more could be achieved. The program contents appear to have been quite successful, however, the allocation of Regional Government budgets for these programs is constrained since RGs do not generally consider this area one of primary concern. The primary focus of programs must continue to be in the area of behaviour change. These programs are also proposed to include parental involvement.

D. Public Health and Hygiene – WSSP Initiatives

400. Sanitation and hygiene behavioural change programs will form an integral part of the WSSP. The programs are designed to extend the health improvement impact of the Project investments. The objective of the Programs is to extend the health benefits of improved water and sanitation facilities by enhancing community awareness of the linkages between improved facilities, improved sanitation and hygiene behaviour and community health.

401. To improve better health through reduction of water and sanitation related diseases the whole community needs to be involved at all stages of activities. Particular attention must be paid to gender issues, target groups and high-risk groups. The development of physical sanitation infrastructure is outlined in Section II.C.3 and the proposed institutional strengthening and capacity building tasks are outlined in Section IV.D. These activities will be supported by a schools health education program and a community health education program. Also included will be a program to monitor water quality in local urban drainage systems within the Project areas. The estimated costs of these programs are set out in the following table.

Table 39: Public Health and Hygiene Programs (Rupiah Millions)

Activity	2006	2007	2008	2009	2010	Total
Training set-up for programs	3,600	1,200				4,800
Schools program		600	600	600	600	2,400
Community program		600	600	600	600	2,400
Drainage water quality monitoring	1,200	600	600	600	600	3,600
Totals	4,800	3,000	1,800	1,800	1,800	13,200

402. The initial task will be to prepare materials, print leaflets etc. and train local persons in the delivery of programs. At this time the program for testing water quality in the micro-portions of the urban drainage systems in the Project area will be set-up. Since the Project will be under the Ministry of Public Works control, it is proposed to make use of existing Programs, already trialed and used by the Ministry of Health. The major problem experienced by these Programs is understood to be a lack of funding for their implementation.

403. The school health education program will use participatory hygiene and sanitation education to reach young children, both to influence their long-term behaviour and to use them as change agents for their families and communities. The school based health program will consist of several activities including:

- enhancing the current primary school curriculum on health and sanitation,
- supplementing the school health and sanitation curriculum with special topics on other priority basic health programs,
- worm infestation treatment for school children in Project locations, and
- water quality monitoring at Project locations.

404. The community health program will focus on improving health and sanitation behaviour by using the participatory approach to encourage change in individuals, family and community. It will also strengthen the capacity and communication skills of local health and sanitation providers, including the sanitation agency, midwife and other local health resources such as PKK. The focus on the community health program will be on activities including:

- strengthening the local awareness on health, hygiene and sanitation through community participation,
- local media programs on health, hygiene and sanitation , and
- improvements in community health facilities.

405. The above activities will form part of the City Wide Sanitation Strategies which will be prepared with technical assistance from the Institutional Development and Capacity Building Consultants (refer to Appendix F). Precise details of task allocations and responsible agencies will be developed as part of the Strategy preparation during the first year of the Project. The implementation of these strategies will proceed over a period of three years.

406. The process will be firmly community based, with schools and communities in Project areas being involved in preparation of programs and eligible to submit proposals for special funding. These activities would have to be clearly defined and meet certain criteria related to improving health and sanitation, such as "Clean School Facilities Competitions".

407. The drainage water quality monitoring program would sample street and local area drainage waters on a bi-annual basis. The focus would be on the micro, or local community,

rather than the macro or city drainage infrastructure. Areas which are subject of community based sanitation projects would receive priority treatment within this monitoring program. Such testing of urban community drainage waters should prove useful as further attention is given to sanitation in future project work.

VI. ENVIRONMENTAL IMPACT ANALYSIS

A. INTRODUCTION

408. The proposed Water Supply and Sanitation Project (the Project) for the provinces of West Java, Banten, North Sumatra and South Sulawesi, Indonesia, has been classified as a Category "R" project in accordance with ADB's environmental assessment requirements. An initial environmental examination (IEE) was undertaken as part of the project preparatory technical assistance to ascertain the Project's impact on the environment and to identify measures to prevent or mitigate any adverse environmental impacts that could arise from its implementation. The examination uses 2005 as the base year for forecasting, with impacts predicted for 2010. This report was prepared during the feasibility studies for the preparation of Sub Project Appraisal Reports (SPAR) for the various project locations. The IEE was prepared based on site visits, meetings held with district-level agencies, reports by relevant government agencies, and is in accordance with ADB's Environment Policy (2002) and applicable environmental legislations and regulations of the Government of Indonesia. This appendix summarizes the main findings of the IEE.

B. DESCRIPTION OF THE PROJECT

409. The objective of the Project is to improve the quality, reliability, and sustainability of water supply and sanitation services in Serang, Bandung, Tapanuli Tengah, Maros, Jeneponto, Barru and Bogor Regencies and Palopo City. This objective will be achieved through: (i) the strategic rehabilitation and optimalization of selected facilities; and (ii) the construction of new water supply and sanitation infrastructure. The Project is expected to benefit a total of about 1,250,000 people in eight sub-project locations by 2010.

410. Alternative technical options were analyzed during Project preparation, and the proposed options are least-cost in economic terms. Concerning water supply production facilities, the existing water treatment plants in Serang, Jeneponto, Palopo and Barru will be rehabilitated and new water treatment plants will be developed in all locations to service the demand for drinking water.

411. The detailed engineering design and construction of the project components will be performed using experts in all respective fields producing facilities which are properly constructed and operated in an environmentally sensitive manner.

C. DESCRIPTION OF THE ENVIRONMENT

412. The Project area covers portions of four provinces – Banten, North Sumatera, South Sulawesi and West Java. The population in the eight Regional Governments (RGs) ranges between 150,000 in Kota Palopo to 4,135,000 people in Kabupaten Bandung. Bandung and Bogor are classified as major or metropolitan regional governments, characterized by typical urban environmental problems in Indonesia: (i) lack of reliable water supply; (ii) lack of maintenance of the water supply and sanitation systems; (iii) lack of adequate network for collecting and disposing wastewater; and (iv) widespread water pollution due to solid waste and sewage flow into drains and water courses.

413. The Project's physical infrastructure works involve construction and rehabilitation of water supply and sanitation assets, including intake, water treatment plant, trunk mains, transmission and distribution of water supply networks, communal sanitation centres and simplified community sewerage systems. Metering of water supplies to residential housing, will be included under the Project. Land areas for the proposed water supply facilities have been identified and resettlement is required under current proposals. The land areas have no unusual vegetation cover. Within the boundaries of the eight RGs, there are no significant ecological resources. There are no known sites of historical or cultural significance in the areas that are likely to be affected during project implementation. The economy of the eight regencies is mainly agriculture-driven with cropping of rice, cotton, coconut, fruit, as well as animal husbandry.

414. For the sanitation component there will be no delineation of and acquisition of land identification of and any resettlement impacts until at least the second year of implementation of the loan. The proposed sanitation investments have been very small and their land requirements are in some inner urban locations where it is possible that land acquisition and a small amount of resettlement would be necessary. To address this possibility, ADB policy provides for the preparation of a resettlement framework.

D. SCREENING OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

415. The longer-term negative environmental impacts of the proposed Project are likely to be insignificant, with impacts resulting directly from preconstruction (land acquisition for production facilities, reservoir and part of transmission line, such as in Bandung) and construction activities only. Environmental impacts during construction depend on (i) contractors' work practices, especially those related to the storage of construction materials and cleanliness of the work sites; (ii) cooperation by local communities in terms of land acquisitions and settlement, labor requirement, use of land and utilities; (iii) enforcement of construction practices and standards through supervision; and (iv) implementation of mitigation measures identified in the IEE and included in bid and contract documents.

1. ENVIRONMENTAL IMPACTS

416. **Improvement in Public Health Conditions.** The Project will increase the reliability of the water supply service to domestic customers, and will significantly improve the quality of water (especially physical and microbiological parameters) supplied to the customers. It will also provide improve sanitation facilities to a limited number of persons. This should lead to a reduction in illness and morbidity from water-borne diseases and a general improvement in public health. This is the most important benefit of the project.

417. **Pollution by construction run-off.** Negative impacts to groundwater and rivers are expected to be temporary and of minor significance. The duration of civil works will be controlled, and weather conditions in the project towns generally will contribute to the limitation of such effects. Additional measures and enforcement of local norms for protection of groundwater will be implemented.

418. **Inconvenience during construction and rehabilitation works.** These impacts will occur during the construction and rehabilitation works on the distribution network. The negative effects include water supply interruption, air quality degraded from construction activities, noise during trench excavation, possible effect of vibration on old buildings, restriction on access to buildings, closure of roads and section of roads causing increased traffic, and movement of construction traffic. Construction camps may have public health impacts; however for this Project these camps will be quite small. There will be a potential for diseases to be transmitted, exacerbated by inadequate health and safety practices. Each contractor will therefore be required to recruit an environmental, health, and safety manager to address such concerns in the camps. Detailed engineering design will develop a detailed phasing-in of the new water supply and sanitation systems and decommissioning of the old water supply and sanitation facilities in the most optimal way, with minimization of water supply interruptions. Coordination procedures for cut-offs will be established; time for replacement operations minimized; and use of nighttime scheduled, if necessary. Appropriate mitigation measures and construction methods will be in place in coordination with relevant local executive authorities. The potential adverse impacts during construction will be avoided by selecting experienced and responsible contractors, and by monitoring and supervision of the works by the trained PMU/PIU staff and the relevant local authorities.

419. **Noise and Vibration.** Prevention of noise and vibration will be an issue during construction. Machinery operations will be restricted to between 0600 to 2100 hours. In addition, a limit of 70 dBA will be set and strictly followed near the construction site. Controlled blasting using low volume charges will reduce the potential for damage to structures, while owners of houses that will obviously be damaged will be fully compensated in accordance with compensation policy guidelines.

420. **Disposal of demolition debris.** Demolition debris will be generated during the replacement of distribution pipes, transmission pipes, construction of intake, reservoir and water treatment plant and rehabilitation works on water supply and sanitation facilities. These effects will be localized and temporary, and will be minimized by means of appropriate removal and disposal procedures. Appropriate waste disposal systems suitable for local conditions will be applied.

421. **Damage to existing utilities.** Old water networks, electricity and telephone lines may be inadvertently damaged during the rehabilitation works. Therefore, the necessary measures will be taken in the construction phase, including coordination and clearance with the appropriate government agencies and municipal enterprises.

422. **Safety hazards from construction activities.** No major hazards are expected during the construction of the proposed project components, as long as proper construction practices and safety procedures are applied. Major contractors are proposed to be employed using a Design Build Operate form of contract. These contractors will employ safety practices in accordance with National requirements and guidelines.

423. **Damage to trees and vegetative resources.** The impacts on vegetative cover will be short-term, localized, and associated with construction. They can be mitigated by adopting proper measures and contract provisions with the contractors.

424. **Damage to cultural resources.** No archeological or cultural resources are expected to be encountered during project implementation.

425. **Compensation Plan.** The Project will require land acquisition for the intakes, water treatment plants and service reservoirs. Public Consultation with affected people before the projects start has to be approved. Besides, some temporary disturbance is possible due to displacement of roadside stores, setting up of temporary construction camps, and cutting of trees. Public consultations indicate concern for policy guideline on the compensation plan to be disclosed to the local community.

426. **Community Impacts.** Construction camps may place stresses on nearby communities. The contractors will be required to establish a mechanism by which local people can raise complaints. The use of local labor and the provision of construction support services will be encouraged and will help alleviate potential conflicts. Village leaders will consulted during public consultation meetings and requested that local people be involved, where possible, in the new water supply and sanitation systems.

427. **Proper Construction Practices.** Contractors' conformity with contract procedures and specifications during construction will be carefully monitored. A Quality Assurance Consultant is proposed to act as a monitor on technical construction procedures and quality of work. Public consultations showed that prime contractors tended to use sub contractors without ensuring that they conform to main contract clauses. Such practices reduce the quality of construction and the benefits of the Project. Contractors will be made to follow standard construction practices, monitored and supervised by field team consultants employed under the Project.

428. **Operation of Water Supply and Sanitation Facilities.** Minor impacts from operation are associated with maintenance (repair and replacement) of water pipelines when there are leaks or breaks in the network. In all eight subprojects, a program will be established to detect leaks and replace any old pipelines to minimize the risk of water supply interruption. With the proper design and construction of the water treatment plant, the drinking water distribution system, leakage rates and risk of contamination during distribution will be decreased substantially, resulting in improved water quality. Likewise, the odor standards will be maintained by careful selection of the sanitation treatment processes.

2. MITIGATION MEASURES

429. **Program to Prevent Undue Disruption.** There will undoubtedly be some water supply service interruption, inconvenience and also traffic disruption caused by construction vehicles and roadside excavations. To avoid undue inconvenience the construction program will include the following:

- In the detailed engineering design and civil works contracts, specify the work implementation sequence for pipeline replacement and rehabilitation, such that local inconvenience is avoided to the maximum extent feasible.
- Provide for an emergency water supply by PDAM tanker trucks in case of prolonged water supply disruptions to domestic consumers.
- In the civil works contracts, specify the coordination measures for water service interruption, such that cut-off periods are reduced to the minimum possible and customers are advised accordingly.
- In the civil works contracts, specify the method of construction in highly congested areas to minimize access disruption, such as trench-to-truck construction and provision of plates to provide temporary access over trenches. Proper access to daily businesses will be guaranteed to the maximum extent practicable.
- Require the contractors to secure approval of construction staging and temporary usage areas for storage of pipes and excavated materials.
- Require the constructor to use traffic routing for implementation of construction works. Safe traffic and safety signals and lighting should be in accordance with local regulations. Safe detours and walkways for pedestrians will be implemented as necessary.

430. **Measures to Minimize Noise and Vibration.** During construction, noise can be minimized through scheduling and specific restrictions for particularly noisy activities. To the extent possible, excavation and related works close to and in residential areas should not be undertaken from sundown to sunrise. Routine control on maintenance all equipment used for construction and transportation will be required to ensure reasonable noise levels. In built up areas, excessive vibration from heavy machines during construction will be avoided to the extent possible to reduce any damages to the surrounding areas. Manual excavation will be adopted in certain cases. Local construction standards will be followed if they specify more stringent requirements.

431. **Protection of the Air Environment from the Construction Dust and Pollution.** The contractor will employ dust suppression measures during the construction process and transportation of materials, such as periodically sprinkling water in certain areas and removal of excess materials from the sites. All street surfaces, sidewalks, and construction sites will be cleaned upon completion of activities. To reduce vehicle emissions the contractor will use traffic routing. Also it will be required to provide routine control on maintenance all equipment used for construction and transportation of materials, and the equipment will be operating only when required.

432. **Prevention of Accidents during Construction.** The contractors shall take all necessary precautions for the types of civil works involved, especially in residential areas and those with high circulation of persons and vehicles. All construction and rehabilitation works should be carried out in accordance with equipment safety rules, and health and safety regulations. Safety measures will be adopted to protect the personnel involved in the works. Public access to construction sites will be properly restricted. Internationally accepted practices and active regulations should be assisted regarding restoration of construction health and safety.

433. **Protection of Vegetative Cover.** As a general principle, all vegetation destroyed will have to be replaced. Ornamental trees that need to be cut will be properly replaced.

434. **Land Availability (ROW or Municipal land).** The Project will install trunk mains and distribution networks, and will require land for a water treatment plants and service reservoirs. Some of the project activities will take place within the existing pipeline alignment or right-of-way and on land owned by the municipal governments. The location and design of works associated with the Project has been carefully considered to avoid land acquisition and resettlement. Based on the survey, discussion with officials and communities in the project areas as well as inventory location for water treatment plant and water distribution systems, there are currently no areas where buildings will be demolished or households resettled. The Project currently defined will require land acquisition but no resettlement. The sanitation facilities are yet to be defined and may require some land acquisition and possibly

resettlement. Provision for such an event is made in the Land Acquisition and Resettlement Framework, appended to the Final Report.

435. **Additional Measures.** All wood used during construction will be procured from authorized sources. Solid waste (other than demolition and excavation debris) such as wood, paper, glass, plastic and trash in general, will be properly collected, separated, stored, and disposed. All construction sites will be kept clean and in good sanitary conditions.

E. INSTITUTIONAL REQUIREMENTS AND ENVIRONMENTAL MONITORING PLAN

436. An environmental management and monitoring plan were prepared to mitigate the potential environmental impacts of the Project. The agencies involved in executing and monitoring the environmental aspects of the Project include PDAM, responsible for managing the social and environmental impacts of water supply projects, and the provincial and local environmental offices, responsible for environmental monitoring under the IEE (refer to Table 40). The required frequency of environmental monitoring is attached as Table 41. The core team of consultants will be responsible for incorporating the environmental management and monitoring plan into engineering design and for environmental monitoring during construction. The field specialists will supervise the monitoring of mitigation measures during construction. In addition, each contractor will be required to nominate an environmental, health, and safety manager responsible for meeting the contractors' environmental and health responsibilities.

437. Indonesia has an established environmental management system known as the AMDAL process and all works to be carried out would be subject to these procedures. Depending upon which institution carries out the works, either the RG or the PDAM they would be considered the proponent and would be required to comply with AMDAL procedures. As a minimum a minor assessment known as UKL / UPL would be required with the vast majority of projects. These documents also require the use of Standard Operating Procedures (SOP).

438. At the District government level, implementation of the AMDAL process for works of a minor nature has been limited. Furthermore the impact of recent regional autonomy legislation in Indonesia has meant that much of the authority for environmental management and impact analysis has been devolved to the RGs.

439. Consequently the environmental management sub component will seek to (i) improve environmental awareness and management at the PDAM level as part of a bottom up participatory process and recognize environmental agencies as legitimate stakeholders; (ii) support the new administrative arrangements for the AMDAL process, to build the capacity to understand procedures, to allow adequate time and resources to carry out impact analysis and to prepare the necessary documentation; and (iii) support efforts by the RG to review and evaluate and supervise implementation of environmental requirements.

440. The Project will be implemented by the PDAMs and the PIUs in the locations. The PMU located at the Central Government level will provide guidance on environmental issues, and will be responsible for monitoring PIU and contractor compliance with environmental requirements.

Table 40: Environmental Monitoring Plan

Item	Period and Activity	Potential Negative Impacts	Mitigation Measures	Agencies Involved	
				Management	Monitoring
I	**Pre-Construction**				
a	Land acquisition for transmission line, Intake, WTP and reservoir	Social conflict with population in the area	Public consultation among affected community and distribution on compensation	PDAM (PIU Environmental Officer)	BAPEDALDA, RG Land Office, PMU
II	**Construction**				
a	Site preparations for intake, WTP and service reservoir	During the site clearing for these structures might affect morphology and vegetation	Keep disturbance to vegetation to a minimum and replace damaged areas. Where possible reinstate excavated areas after backfilling	Contractor (Environmental Officer)	PIU (Environmental Officer), BAPEDALDA, PMU
b	Mobilization of labour, equipment and materials	Mobilization for labour, equipment and material could cause damage to roads.	Maintain roads in clean condition and repair as necessary.	Contractor (Environmental Officer)	PIU (Environmental Officer), BAPEDALDA, PMU
		Social conflicts may arise if the project does not give preference to local available and suitably qualified labourers as well as equipment and material suppliers	Give consideration and preference to locally available resources	Contractor (Environmental Officer)	PIU (Environmental Officer), BAPEDALDA, RG Labour Office, PMU
c	Site preparations and set up of base camps	Contamination of water in streams and rivers	Provide suitable sanitation facilities in base camps and take preventative measures to ensure no excessive erosion of soils occurs by quickly reinstating disturbed areas	Contractor (Environmental Officer)	PIU (Environmental Officer), BAPEDALDA, PMU

Item	Period and Activity	Potential Negative Impacts	Mitigation Measures	Agencies Involved	
				Management	Monitoring
d	Intake construction at rivers	Potential for scouring of river banks producing excessive turbidity in water	Work on intakes to commence with construction of temporary coffer dams using sand bags effectively isolating the area of works activity	Contractor (Environmental Officer)	PIU (Environmental Officer), BAPEDALDA, PMU
		Potential for coffer dams to cause change in flow of rivers due to constriction in flow	Each location to be examined and if necessary construction on this portion of the work deferred to the dry season	Contractor (Environmental Officer)	PIU (Environmental Officer), BAPEDALDA, PMU
e	Pipeline construction for transmission and distribution networks (including excavation, pipe laying, backfill and reinstatement)	Threats exist to public health and safety and to private property if work is not properly managed; possibility for backfill to be washed into water courses during high rainfall	Working arrangements are to be properly managed in accordance with relevant laws and regulations; advance notice of proposed works to be given to affected persons; the length of trench open along pipelines to be limited to ensure prompt reinstatement	Contractor (Environmental Officer)	PIU (Environmental Officer), BAPEDALDA, RG Public Facilities Office, PMU
III	Operation				
a	WTP sludge management	The WTP operation will generate considerable amounts of sludge, which, if not properly managed will cause pollution of water courses	The water treatment plants will be provided with sludge drying beds to de-water sludge and the dried sludge cakes will be passed to landfill disposal sites	PDAM	BAPEDALDA

Table 41: Frequency of Environmental Monitoring

No.	Impact	Location	Method of Monitoring	Frequency of Monitoring
I	**Pre-Construction Phase**			
	Land acquisition	▪ Intake ▪ Transmission Line ▪ WTPs ▪ Reservoirs	Field and office inspection	Before construction contracts are bid
II	**Construction Phase**			
	Changes to morphology and the loss of vegetation	▪ Intake ▪ WTPs ▪ Reservoirs	Field inspection	During construction monthly and more frequently as necessary
	The damaged to roads used for the project	Roads which will be used for the project vehicles routes for mobilising the workers, equipment and material.	Field Inspection	During construction monthly and more frequently as necessary
	Social conflict	Surrounding project area	Field Inspection	During construction monthly and more frequently as necessary
	Contamination in surounding area of project faicilities location due to construction preparation and construction works.	Surrounding area of project facilities	Field Inspection	During construction monthly and more frequently as necessary
	Damage to public facilities	Surrounding project area	Field Inspection	During construction monthly and more frequently as necessary
	Noise and Vibration	Surrounding the construction area	Noise and vibration measurements	During construction monthly and more frequently as necessary
III.	**Operational Phase**			
	Pollution of water and soil surrounding WTP's waste disposal area	WTP's waste disposal area	Water quality analyses on river water samples (for parameters of turbidity, DO, pH, SS, BOD, temperature)	Once every six months during operation

441. The responsibility for construction standards is with the Public Works Department. Their standards together with ADB's environmental requirements will be incorporated into the project design. There are no significant environmental management issues relating to the post construction and operation of the project. All contracts for construction works will include requirements for implementation of the specific measures as per EMP provisions and good construction practices. Control and monitoring of construction works will be part of responsibilities of the PIU. When necessary this will be done on a daily basis.

442. The Project's environmental impacts will be closely monitored. Specifically, the monitoring and evaluation (M&E) activities by the PIUs will include (i) collecting, collating, and analyzing baseline data related to the environmental conditions in the Project towns; (ii) environmental gains as a consequence of project implementation, and (iii) evaluating environmental impacts within the selected systems. For environmental monitoring, they will collect and analyze information on quality of water supplied, and minimization of construction impact within the towns. The project performance, monitoring, and evaluation will be done in accordance with ADB's guidelines on its project performance management system.

F. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

443. The IEE process will include public participation and consultation to help PDAM achieve public acceptance of the Project. The technical assistance consultant has already involved a wide range of participants representing affected people, community leaders, non government organizations and city governments. The consultations were organized on two occasions during field trips and coordination meetings with stakeholders. The affected people and the local communities expressed support for the Project, perceiving benefits to the community and the region. The main concerns expressed related to the provision of, quality construction, proper engineering practices during construction, and transparency in construction work. Responses to these concerns are incorporated in the Project's design.

444. The IEE report documenting the mitigation measures and consultation process is available for public review. As the public consultation is an ongoing process, additional disclosure and consultation will occur during the construction and operation phases, through dissemination of a project leaflet in Indonesian. The leaflet will explain the affected peoples' entitlements and the procedures for obtaining compensation and recording complaints/grievances and setting up a formal grievance redress committee with representation from the affected people.

G. CONCLUSION

445. The Project will have some minor environmental impacts, some positive and some negative, including (i) changing of land morphology and the reduction of vegetation (during construction) (ii) road/paths damage (during construction) (iii) social conflict due to land acquisition, labor recruitment and using equipment and material from outside the project area (during construction) (iv) possible water body contamination during land development and the operation of base-camps and material storage (during construction) (v) river disturbance (during construction), (vi) public utility damaging (during construction) (vi) dicturbance to the public utility's customers (during construction), (vii) improved accessibility to drinking water and sanitation (viii) improvements in public health.

446. Implementation of appropriate mitigation measures during pre construction, construction and operation phases will minimize the negative impacts of the Project to acceptable levels. Both the Contractor and the PIU will be required to appoint Environmental Officers. Environmental monitoring of the Project will be undertaken regularly during construction and operation by local Environmental Impact and Management Agencies (BAPEDALDAs) to ensure that the measures are being implemented properly.

Table 42: Screening for AMDAL

Regional Government	Proposed Abstraction (lps)	Distribution Coverage Area, (ha)	Transmission Length (km)	AMDAL Required
Kab. Serang	220	210	20	Not Required
Kab. Bandung	600*	642*	58	Required
Kab. Bogor	300 (each 150) & 70	177	18*	Required
Kab. Tapanuli Tengah	120	200	20	Not Required
Kab. Maros	165	201	20	Not Required
Kab. Barru	55	173	16	Not Required
Kab. Jeneponto	100	3	5	Not Required
Kota Palopo	250	275	15*	Required

447. In conclusion, the Project will have overall beneficial impacts in increasing the population supplied with drinking water, and improving sanitation conditions through the project area, and will have insignificant negative impacts, which will be carefully monitored and adequately mitigated. For the subprojects which meet the requirements for a full environmental impact assessment (AMDAL) according to Ministry of Environmental Decree No. 17/2001, further environmental study will be done ahead of design and implementation of project works. AMDALs will be prepared for the water supply sub-projects in Kabupaten Bandung, Kabupaten Bogor and Kota Palopo.

VII. SOCIO-ECONOMIC ANALYSIS

A. INTRODUCTION

448. The socio economic analysis has a number of sections. It briefly outlines the socioeconomic environment in which the WSSP project is to be implemented and then proceeds to discuss the impact of the project on poverty, gender, labor, land acquisition, resettlement and Indigenous people.

B. OBJECTIVES AND METHODOLOGY

1. OBJECTIVES

449. The objectives of the poverty and social analysis in the WSSP were:

- to understand proposals for water supply and sanitation taking account of any differences in existing needs between various sites which could be explained by location, socioeconomic and cultural factors;
- to prepare an initial stakeholder analysis and implement a preliminary community based planning process which could be used during implementation of the project;
- understand the ability and willingness to connect and pay for water supply and sanitation services;
- understand any differences in needs and demands due to gender differences and the role of women;
- to assist in targeting and prioritizing specific types of interventions such as gender and poverty reduction programs at the community and household level which could form the basis for a community based sanitation program during loan implementation; and
- identify any potential social impacts on vulnerable groups or social safeguards issues.

2. METHODOLOGY

450. The methodology used for carrying out the poverty and social analysis used a combination of direct and indirect participatory techniques and included quantitative and qualitative analysis of both primary and secondary source of data.

INTERVIEW SURVEY

451. A household level socioeconomic survey was conducted within proposed project areas in all 14 Local Government areas. The survey was a random interview survey which targeted three clientele groups at the Kelurahan level of local government. The three target groups were:

- Existing Customers of the Water Company (PDAM) with House Connections
- Existing Customers of the Water Company (PDAM) who presently use Public Taps
- Non-Customers of the Water Company.

452. The final sample size of the survey was 300 in Serang and 200 in all other Local Government Areas making up a project sample size of 2,900. The survey collected information on current water supply and sanitation arrangements and water demand, existing cost of services, willingness to connect and pay for services, ability to pay for services, willingness to be involved in community based planning and preparation for sanitation services and also key household expenditure, income, demographic and population characteristics. All results were analyzed with the statistical package SPSS and a variety of statistical tests utilized including Chi- Square Analysis and Comparison of Means. A copy of the questionnaire used is included in Appendix D.

COMMUNITY BASED PLANNING PROCESS

453. As well as the household socioeconomic survey, a community based project planning process was initiated in all local government areas following the initial stakeholder analysis.

INITIAL STAKEHOLDER ANALYSIS

Definition of Stakeholder

454. Those people or entities who may affect, be affected by or perceive themselves to be affected by a decision or activity.

455. Brainstorming and informed participant sessions were conducted which elicited a list of potential stakeholders. These were prioritized (ranked) into three groups for each Town or District Representatives of the first two groups were approached to initiate a Stakeholder Committee and launch a preliminary four meeting process. The following table includes the typical list of stakeholders who were approached for inclusion the Stakeholder Committee.

Table 43: Organizations and Agencies Represented on the Stakeholder Committee

Local Stakeholders	
PDAM / Direksi	PKK Peran Serta Wanita
PU Kimpraswil / Kadis	Bagian Perekonomian
DPRD Ketua Komisi	BPS
BAPPEDA	Bapedalda
Dinas Kesehatan	Dinas Sosial
Kepala Daerah / Bupati	Kadinda
LSM/NGO/ Wanita Miskin, Lingkungan	BKKBN
Dinas Kerbersihan	Badan Koordinasi Kesejahteraan Keluarga
Dinas Pendidikan	Media
Tokoh Masyarakat	Rumah tangga
Agama / Adat	PKK Peran Serta Wanita

Source: WSSP Project Social Development Team

Role of Stakeholder Committee

456. The role of the Stakeholder Committee (which may be in the sample SK) are as follows:

- To receive technical advice from the PDAM, RG and the Consultant Team
- To discuss, represent and input the views of the various stakeholders into the study design process in relation to both water supply and sanitation
- To assist the consultant team in selection of samples to target specific groups during the conduct of socioeconomic surveys
- To provide feedback and information to their constituents on the progress of the design process
- To make recommendations to the DPRD and the Bupati's office concerning planning and design aspects of the proposed water supply and sanitation options
- To prepare minutes of each meeting to document outcomes
- To evaluate their satisfaction with the design process
- To represent and advocate for the project in publicizing and promoting the objectives of the project
- To represent the project in the local media

The Stakeholder Committee Development Process

457. The process involves the conduct of up to four main meetings and focus group discussions or more in- depth participant surveys as considered necessary.

Meeting 1 Introduction to the Project and Study Process

458. The purpose of meeting is to brief the Committee about the following issues

- The project
- Specific Objectives
- The Process
- Schedule
- Opportunities for the Committee to be involved in the process
- Are all the main stakeholders included?
- Feedback Questions

Meeting 2 Understanding the Community and the Environment

- SWOT analysis concerning the issues and problems in water supply and sanitation services
- What are the needs of specific interest groups
- Group Discussion of Location of Low income communities in the City
- Group Discussion of Key project Design Issues
- Preparation of Summary Report

Meeting 3 Proposals For Water Supply and Sanitation

- Proposals prepared by PDAMS and Regional Governments
- Explanation of the how the preliminary project has been designed
- Planning for small group discussions concerning specific aspects and issues arising
- Preparation of Socioeconomic and Community Impacts Analysis form Committee Perspective
- Focused group Discussion on Specific Topics such as Gender or Indigenous People

Meeting 4 Review and Feedback Intro to Implementation Timing

- Review and feedback of SIA with proposed Design Proposals and/or Mitigations

Focus Group Discussions on Gender Issues

459. In at least one of the towns/districts in each location flowing meeting 2 in the above process each coordinator was to facilitate a focused discussion on the topic of gender Issues. The results of these discussions and further discussions with ADB and Cipta Karya representatives led to the development of a Gender Action Plan for the project.

Formal Status

460. After discussion with Project Representatives and visits to Districts early in the project it was decided that the Committee should be initiated as an informal Advisory Committee so that the process could be completed by the time of implementation of the project. The Committee is to be made formal before implementation of the project and would become the key organization to coordinate the development of a Town/ District wide sanitation strategy in the first year of the project implementation period.

C. ANALYSIS AND COMPARISON WITH BPS SUSENAS DATA

1. GENERAL

461. In order to supplement and check the reliability of the household survey analysis the project also used the BPS SUSENAS data which is available down to the District Level on most key socioeconomic indicators. Key water supply source and household expenditure questions used in the Household survey were identical to the questions used in SUSENAS to allow cross checking for reliability purposes.

2. OVERVIEW OF THE PROJECT AREA

462. The 13 project Districts are located in three regions and six provinces of Indonesia. The three regions include South Sulawesi, North Sulawesi and Western and Central Java. As Table 44 demonstrates the faster growing urban areas are located in the latter region as is 80% of the population in the six province area. In the other regions except in the Bangka Islands there has been negative urban growth in both South Sulawesi and North Sumatra. In contrast in these areas rural growth rates have been slightly positive.

Table 44: Population and Growth Rate of Six Provinces Affected by Project.

Province	Urban Population 2003	Rural Population 2003	Total Population 2003	Share of 2003 Population	Annual Urban Growth Rate	Annual Rural Growth Rate	Total
South Sulawesi	2,425,682	5,788,182	8,213,864	8%	-0.19%	0.92%	0.58%
North Sumatra	5,118,104	6,738,803	11,856,910	12%	-0.69%	0.77%	0.13%
Bangka Belitung*	414,192	561,839	976,031	1%	0.91%	0.12%	0.45%
West Java	19,233,780	18,746,640	37,980,420	38%	-1.00%	-3.33%	-2.19%
Central Java	12,822,280	19,230,560	32,052,840	32%	3.29%	-0.64%	0.83%
Banten*	4,675,088	4,281,141	8,956,229	9%	1.70%	3.93%	2.74%
Total	44,689,126	55,347,165	100,036,294	100%	4.01%	1.78%	2.53%

Source: BPS SUSENAS Survey

D. POVERTY ALLEVIATION

1. DEFINITION OF POVERTY AND LOW INCOME

463. The definition of Poverty is a source of some contention in Indonesia. The Central Bureau of Statistics (BPS) uses a core of the categories of expenditure that are collected each year in the SUSENAS survey. Expenditure is divided into 14 Categories. From this list the core group establish a "poverty line" measured in terms of Mean Expenditure Per Month in Rupiah. This data is also used to estimate the number and percent of poor people in each District each year.

464. The other institution which publishes poverty data is the National Family Planning Board which uses criteria to establish the overall Level of welfare of the family. There are five indicators which are used.

- Performing religious obligations
- Eating twice a day and more
- Occupying a house
- Able to access health services
- Possessing more than one set of clothes

465. If the household cannot satisfy one of the five social indicators it is considered to be a poor household. The approach used in this project was to adopt the BPS expenditure based approach due to the need to train interviewers quickly in the field with a more easily quantifiable approach which could be checked for reliability on key questions.

2. POVERTY LEVELS IN INDONESIA

466. Indonesia had been making good progress In Poverty Alleviation until the shock of the Asian Economic crisis in 1997. This sent many households back into poverty and reversed the trend of the previous decade. However in comparative terms see Table 1 levels of Poverty In Indonesia remain relatively low compared to other DMC in the East Asian and South East regions. Since 2002 the level of poverty at 21.1% has declined further to 17.1% of the Population in 2003.

Table 45: Poverty Level in Indonesia Compared to Other Countries in Region

DMC	Population in Poverty (%) (National Poverty Line) a				Proportion of Population Below $1 (PPP) a Day (%)	
	Total	Urban	Rural			
East Asia						
China, People's Rep. of	...	< 2.0	3.5	(2000)	16.1	(2000)
Korea, Rep. of	3.6	...	...	(2000)	< 2.0	(1998)
Mongolia	35.6	39.4	32.6	(1998)	13.9	(1995)
Taipei, China	0.6	...	...	(1999)	...	...
Southeast Asia						
Cambodia	35.9	25.2	40.0	(1999)	...	...
Indonesia	18.2	14.5	21.1	(2002)	7.2	(2000)
Lao PDR	38.6	26.9	41.0	(1997)	26.3	(1997)
Malaysia	8.1	3.8	13.2	(1999)	< 2.0	(1997)
Myanmar	22.9	23.9	22.4	(1997)	...	...
Philippines	34.2	20.4	47.4	(2000)	14.6	(2000)
Thailand	13.1	10.2	15.5	(2000)	< 2.0	(2000)
Viet Nam	37.4	9.0	44.9	(1998)	17.7	(1998)

Source: ADB Poverty Inequality & Human Development May 2003

467. Typical of many countries in the region the amount of poverty varies significantly from Province to Province in Indonesia. Table 46 shows the Provinces that are included in the Project compared to DKI Jakarta and Indonesia generally. The Provincial data in the table tend to mask the differences in poverty found at the District level by the WSSP socioeconomic survey.

Table 46: Comparative Poverty Levels for Provinces in Project compared to DKI Jakarta and Indonesia, 2003

Province	Total Poor Population	Percentage
	Thousands	
Sumatera Utara	1,889	15,89%
DKI Jakarta	294	3,42%
Jawa Barat	4,899	12,90%
Jawa Tengah	6,980	21,78%
Banten	856	9,55%
Sulawesi Selatan	1 302	15,85%
Indonesia	37,339	17,42%

Source: BPS-Survei Sosial Ekonomi Nasional 2003

3. PROVINCIAL AND DISTRICT LEVEL POVERTY

468. In contrast, the project districts show starker differences. Of the three clusters of project Districts, the poorest are found in Sulawesi, the next poorest in North Sumatra and Bangka and the least poor in Java. Table 47 shows the official comparative levels of poverty in each of the Districts and the overall average for All Districts is 14.42 % which is lower than the overall Indonesian figure.

469. Table 47 also shows comparisons between the results of BPS SUSENAS estimates of mean monthly expenditure in 2003 compared to the results of the WSSP socioeconomic survey. The results of the WSSP survey utilizing "poverty line" benchmarks were found to be systematically higher than the SUSENAS results. This was expected due to the fact that one of the target groups – the Group already connected to the PDAM tend to be less poor and vulnerable than the other two. Also there has been significant inflation in expenditure levels since the 2003 SUSENAS figures were released.

Table 47: Comparative Population Poverty & Monthly Household Expenditures All Project Towns and Districts

Regional Government	Total Population 2004	Total Poor 2004 SUSENAS	%Poor of Total Population 2004 SUSENAS	Poverty Line Rp/Capita/ Month 2004	Survey Per Capita Expenditure Per Month Rp	Survey Total Expenditure per Month Rupiah	SUSENAS Mean Per Capita Expenditure Per Month 2003 Rp
Tapanuli Tengah	276,772	87,100	31.47	118,788	231,336	1,115,754	164,269
Tapanuli Utara	255,219	48,900	19.16	128,192	187,302	854,778	182,788
Kota Pangkal Pinang	139,496	8,300	5.95	223,095	298,851	1,134,199	320,094
Kabupaten Bogor	3,797,320	453,400	11.94	130,927	609,718	2,530,193	237,850
Kabupaten Bandung	4,084,459	483,600	11.84	133,578	337,637	1,538,148	211,012
Kota Banjar	163,601	16,900	10.33	96,653	252,267	991,269	182,260
Semarang Kotamadya	1,410,714	79,000	5.6	133,814	296,713	1,276,479	179,107
Pemalang	1,340,654	299,100	22.31	125,554	292,382	1,192,700	284,373
Serang	1,829,857	166,700	9.11	111,352	291,057	1,366,543	202,425
Kota Palopo	124,444	14,000	11.25	133,212	149,019	672,382	188,651
Maros	290,354	59,900	20.63	120,118	150,702	743,259	173,902
Barru	157,155	17,900	11.39	110,261	155,586	679,240	197,263
Jeneponto	327,041	74,500	22.78	103,839	119,246	547,319	145,448
Sidenreng Rappang	245,983	19,900	8.09	103,429	194,205	745,176	199,474
Totals and/or Average Value	12,687,045	1,829,200	14.42	126,629	255,811	1,107,897	204,923

Source: BPS Susenas Survey and WSSP Socioeconomic Survey

4. IMPACT ON POVERTY

TOWN OR DISTRICT LEVEL

470. The project is not classified as a poverty intervention loan by the ADB and consequently there is no requirement to only serve governments which have at least 20% of households classified as poor households. From 2004 SUSENAS data, the total population of poor households in the 14 Project towns and districts is 12,687,045 of which 1,829,200 were classified as poor. The average percentage of poor households in the project towns and districts was 14.42% and the average 2004 poverty line for all locations was Rp 126,629 per capita per month per household. As can be seen in Table 47, five out of the total of 14 Project towns or districts have more than 20% poor population and one is just under at %19.16.

PROJECT AND SUB PROJECT LEVEL

471. The project will alleviate poverty by implementing water supply and sanitation sub-projects and associated capacity building and institutional development in the 13 Towns and Districts.

472. Using Household Expenditure data collected in the WSSP socioeconomic survey and the Poverty line data from SUSENAS, the proportion of poor and vulnerable households was estimated. Vulnerable households were also estimated and defined as those living at or below the poverty line plus 25%.

473. Some of the results of the analysis are shown in Table 48. These results show the marked differences between the three target groups with 29% of the Connected PDAM customers classified as either poor or vulnerable, 51.8% of Public tap customers and 51% of non connected customers. The average proportion of poor people that the project can potentially serve was estimated from the survey results to be 32% and the proportion of vulnerable households estimated at 12.3%.

Table 48: Proportion of Respondents Poor or Vulnerable In Project Areas

Target Group		Below Poverty Line	Vulnerable Population	Middle to Higher Expenditure	Total
Connected to PDAM	Count	158	103	627	888
	% within Target Group	17.80%	11.60%	70.60%	100.00%
	% of Total	5.50%	3.60%	21.70%	30.70%
Public Tap Customers	Count	33	24	53	110
	% within Target Group	30.00%	21.80%	48.20%	100.00%
	% of Total	1.10%	0.80%	1.80%	3.80%
Respondents	Count	733	228	930	1891
Not Connected	% within Target Group	38.80%	12.10%	49.20%	100.00%
	% of Total	25.40%	7.90%	32.20%	65.50%
Total	Count	924	355	1610	2889
	% within Target Group	32.00%	12.30%	55.70%	100.00%
	% of Total	32.00%	12.30%	55.70%	100.00%

Source: WSSP Socio-Economic Survey

474. The results in the above table were then applied to the estimated number of proposed household connections for water supply supplied by the project team in order to estimate project impact on poverty alleviation of the water supply component. The present number of poor households that can be potentially served by the project was estimated at 54,726 households with a population of 267,658. The current number of vulnerable households was estimated at 20,684 with a population of 102,045. The results of the poverty impact assessment are shown in Table 49. This Table shows the estimated potential number of poor and vulnerable households that will be affected by the project broken down by Sub projects.

Table 49: Impact of WSSP Project on Poverty Alleviation

Kota / Kabupaten Sub Project	New House Connections	Potential Total Population Served	Estimate Potential Poor Population	Estimate Potential Vulnerable Population Served	Estimate Potential Poor Households	Estimate Potential Vulnerable Households Served
Serang	17,000	83,144	26,606	10,144	5,440	2,074
Cinuas	4,200	20,542	6,573	2,506	1,344	512
Serang Total	21,200	103,686	33,180	12,650	6,784	2,586
Bogor Timur	9,900	48,419	15,494	5,907	3,168	1,208
Bogor Tengah	9,000	44,018	14,086	5,370	2,880	1,098
Bogor Total	18,900	92,437	29,580	11,277	6,048	2,306
Maros	13,200	64,559	20,659	7,876	4,224	1,610
Banjar	1,450	7,092	2,269	865	464	177
Banjar Langensari	500	2,445	783	298	160	61
Banjar Total	1,950	9,537	3,052	1,164	624	238
Jeneponto	9,700	47,441	15,181	5,788	3,104	1,183
Barru	7,200	35,214	11,269	4,296	2,304	878
Sidrap	13,000	63,581	20,346	7,757	4,160	1,586
Pemalang	10,000	48,908	15,651	5,967	3,200	1,220
Palopo	11,550	56,489	18,077	6,892	3,696	1,409
Pangkal Pinang	10,000	48,908	15,651	5,967	3,200	1,220
Semarang	40,000	195,634	62,603	23,867	12,800	4,880
Tapanuli Tengah	6,270	30,666	9,813	3,741	2,006	765
TapUtara Taratang	3,550	17,363	5,556	2,118	1,136	433
Tap Utara Sipoholon	2,250	11,004	3,521	1,343	720	275
TapUtara Muara	2,250	11,004	3,521	1,343	720	275
Total Tap Utara	8,050	39,371	12,599	4,803	2,576	982
Total	171,020	836,433	267,658	102,045	54,726	20,864

475. The number of households eventually to be served will depend on the ability of each of the PDAM's to attract new customers and the ability and willingness of new customers to pay for services and the initial connection fee.

476. Based on the results of the survey it is clear that historically relatively better off households have been connected to PDAM's. It will be important for project procedures and monitoring to be developed as part of the capacity building and institutional development component that this trend is not continued and that current mechanisms for increasing equitable delivery of water supply to the poorer households are radically modified.

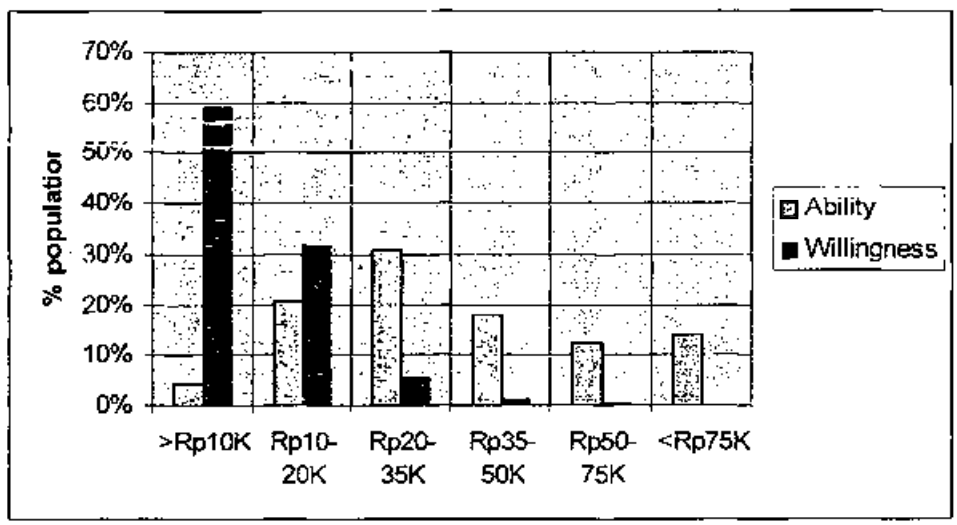
Poverty Alleviation in the WSSP Project

The overall number of poor households was estimated at 54,726 involving a population of 267,658 and the number of vulnerable households was estimated at 20,864 households making up a population of 102,045.

ABILITY AND WILLINGNESS TO PAY

477. In order to estimate the proportion of potentially new customers who would connect, an analysis was carried out to cross tabulate willingness to pay (how much respondents said they were prepared to pay compared to their ability to pay as measured by a 4 % benchmark of monthly household expenditure.

Figure 18: Ability to Pay Per Month Compared with Expressed Willingness to Pay



Source: WSSP Socio-Economic Survey

478. The results of the survey suggest that willingness to pay is significantly lower than their ability to pay. Potential customers will need to be convinced through social marketing to increase their willingness up to the level of their ability to pay. The results of the analysis also suggest that a high proportion of the poor and vulnerable households will participate in the project if the average cost of the tariff plus credit installments for connection fees is kept within the range of up to Rp35,000 per household per month.

Table 50: Ability to Pay Measured by 4% Benchmark of Total Monthly Expenditure

Categories of Affordable Monthly Expenditure Per Month using 4% Benchmark	Frequency	Percent	Valid Percent	Cumulative Percent
Less Than 10,000 Rupiah	124	4.3	4.3	4.3
10,001-20,000	591	20.4	20.4	24.7
20,001-35,000	883	30.5	30.5	55.2
35,001-50,000	595	20.6	20.6	75.8
50,001-75,000	368	12.7	12.7	88.5
More than 75,000 Rupiah	333	11.5	11.5	100
Total	2,894	100	100	

Source: WSSP Socio-Economic Survey

POVERTY ALLEVIATION MITIGATION MEASURES

479. It is already PDAM policy to apply a differential tariff for poor households. These households pay the lowest tariff. However, presently the mechanism for application approval and on-going monitoring appears to be extremely uncertain and poorly implemented as the socioeconomic survey results demonstrate. The process for selection and approval for application of differential tariffs will need intensive review and modification in order to make progress in poverty alleviation.

480. The clarification of what constitutes a poor and vulnerable household and genuinely "needy" is presently the subject of an analysis by GOI with the development of a national data base which will identify households eligible for targeted programs for health, education and other subsidy programs such as fuel. This data base needs to be utilized as the basis for the development of the equitable tariff to be developed as part of the LIDAP process and is one component of improving "good governance" in the sector.

481. It is proposed that the tariff would be progressively increased to the average to the level where households are paying 4% of their total monthly expenditure and then increased enough in the middle and upper income groups to cross- subsidize the poor and vulnerable households. This may need to be adjusted for Towns and Districts where the proportion of poor is higher than the average project figure to help with maximizing cost recovery.

482. The necessary changes to PDAM procedures and capacity building for its implementation to implement the differential tariff strategy is considered a priority and will be one of the urgent issues discussed in the preparation of the LIDAP.

483. For sanitation, there is a requirement under PP16 the new water and sanitation regulation to prepare an overall community based sanitation strategy for each town in the first year of implementation of the project. This approach is to be adopted for all project towns and Districts.

484. Obviously there is some dependency of proposed sanitation programs and planned water supply improvements. In most cases the implementation of a piped water supply increases the range of sanitation options open for specific areas.

485. The sanitation strategy will specifically target low income areas which are already supplied with piped water and are proposed for water supply improvements so that the MCK program can be designed to maximize poverty alleviation. The number of schools that have been included for connection to water supply and improved sanitation has been estimated at 20 for each location for the overall project. The schools program and hospital and health centres will be inventoried and prioritized during the development the community based sanitation strategy.

486. There is more discussion of the sanitation strategy in the following section on gender issues.

E. GENDER STRATEGY

1. GENDER ANALYSIS

487. The gender strategy had two objectives:

- identifying project design elements (policy, investment, or implementation) in both water supply and sanitation components of the loan program that (a) will enable women to participate in and benefit from the Project, and (b) have the potential to exclude women from participating in or benefiting from the Project.
- Recommending subproject interventions to address gender imbalances, and interventions to support other vulnerable groups.

488. For the development of the strategy, a brief background profile of project towns using the BPS SUSENAS sample survey data was prepared. It shows relevant trends in women's issues such as the proportion of female headed households, education trends and household labor division in conjunction with some of the results from the WSSP household survey. The strategy then goes on to discuss the water supply and sanitation components of the project separately and makes separate recommendations. Water supply is considered in relation to the individual household, the community and also from an institutional (PDAM) perspective. Sanitation is considered at the household and community level only as the structure of sanitation institutions varies considerably between towns.

2. BASELINE PROFILE

489. In order to consider gender, the WSSP household survey was designed to be inclusive of female respondents. Overall the survey had a sample size of 2900 for the fourteen cities and towns in three regions- Western Java, South Sulawesi and North Sumatra. There was a slight male bias in the overall survey with 1575 or 54. 5% male respondents and over 1300 or 45.5% female. As shown in Table 51, women were under represented in Java but considerably over represented in the South Sulawesi region which is significantly poorer than the other two regions. North Sumatra slightly favored male respondents.

Table 51: Distribution of Male and Female Survey Respondents

Region	Explanation	Sex Male	Sex Female	Total
South Sulawesi	Count	379	621	1000
	% within Region	37.90%	62.10%	100.00%
	% of Total	13.10%	21.50%	34.60%
Java	Count	860	430	1290
	% within Region	66.70%	33.30%	100.00%
	% of Total	29.80%	14.90%	44.70%
North Sumatra	Count	336	262	598
	% within Region	56.20%	43.80%	100.00%
	% of Total	11.60%	9.10%	20.70%
Overall	Count	1575	1313	2888
	% within Region	54.50%	45.50%	100.00%
	% of Total	54.50%	45.50%	100.00%

Source: WSSP Household Survey, 2005

490. In both the WSSP household survey and the secondary survey data, trends in traditional roles and participation of women in areas affected by the project were changing in education but were still quite traditional when it came to the household and labor division.

FEMALE HEADED HOUSEHOLDS

491. Table 52 shows the percentage of female headed households to be reasonably uniform across the regions with higher percentages in both predominately Muslim and Christian areas (i.e. Barru in Sulawesi and Tapanuli Utara in Sumatra). Consequently, it was considered that religion was not a factor affecting the number of female headed households.

Table 52: Percentage of Female Headed Households

District/Municipality	1999	2000	2001	2002	2003
Tapanuli Tengah	13.5	15.1	17.4	15.6	15.5
Tapanuli Utara	19.6	20.8	19.5	21.1	21.2
Pangkal Pinang	14.4	14.5	14.3	14.5	12.2
Bogor	12.3	9.7	9.9	6.1	9.8
Bandung	11.1	12.2	10.3	9.1	9.3
Ciamis	14.2	15.5	12.7	15.2	15
Pemalang	16.3	14.1	12.3	11.8	14
Semarang	16.2	18.2	16.9	15	16
Serang	10.7	11.2	11.8	12.8	13.2
Jeneponto	12.8	11.4	11.2	14.5	11.9
Maros	14	16.2	15.7	12.2	12.6
Barru	16.9	18.4	20	20	19.7
Sidenreng Rappang	19.6	19.3	17.6	15.6	17.2
Luwu Utara	***	***	7.8	8.4	10

Source: BPS,SUSENAS

492. The result from the WSSP household survey indicated that the proportion of female headed households was 15% which is close to the average from the secondary data.

EDUCATION

493. Level of education was found to vary significantly between the towns in the SUSENAS survey. Retention rates in secondary education in the project areas tend to significantly favor girls in the North Sumatra region (refer to Table 53) and slightly favor boys in Java and Sulawesi although there are exceptions to this trend in Semarang, Maros and Luwu Utara (Palopo). In general terms, retention rates were found to favour girls in the more urban areas which suggests that younger women are changing the profile of older women who have tended to be under educated compared to men of the same generation.

Table 53: Retention Rates in Senior High School Project Towns and Districts 2000-2003

District/Municipality	2000		2001		2002		2003	
	Male	Female	Male	Female	Male	Female	Male	Female
Tapanuli Tengah	51.3	52.8	59.2	68.9	59.8	55.6	52.3	64.1
Tapanuli Utara	85.6	88.6	85.5	94.5	80.8	82.3	79.7	93
Pangkal Pinang	70	70.8	61.5	69.7	73.1	79.7	73.4	75.3
Bogor	45.4	44.1	41.1	31.1	36.7	29.8	37.8	30.9
Bandung	46.6	45.8	41.9	47	51.5	38	43.8	41.9
Ciamis	49.3	40.4	38.3	26.1	19.6	37.6	35.6	31.8
Pemalang	39.5	34.8	41	34.3	39	29.7	32.7	32.1
Semarang	79.7	62.6	87.3	68.1	73.8	70.5	75.9	76.7
Serang	48.8	44.4	33.2	42.3	35	46.1	42.7	29.8
Jeneponto	27.6	24.5	33.1	34.5	27.9	27.9	32.5	22.2
Maros	40.6	38.1	45.4	42.2	47	43	40.4	40.9
Barru	47.3	38.7	55	57.1	49.7	43.5	49.5	41
Sidenreng Rappang	49.8	56	39.1	50.5	41.3	45.4	42.3	31.9
Luwu Utara	***	***	37.8	40	37	36.5	31.6	33.7

Source: BPS SUSENAS, Description : Population ages 16 - 18 currently enrolled in school / Population ages 16 - 18

494. The WSSP household survey tended to confirm these results. It was found that that there were significant statistical differences in the level of education of respondents particularly up to primary and junior secondary in both Sulawesi and Java favoring women. It should be emphasized that this was in the two regions which are almost completely Muslim. In the Christian region of North Sumatra, no such differences were found. It should also be noted that the small proportion of people with higher education (i.e. tertiary level) tended to be dominated by men in all regions. Overall, there is some evidence that suggests that younger women are staying in school longer than older women which will tend to help their families emerge from poverty.

HOUSEHOLD DIVISION OF LABOR

495. On the other hand, it is also clear from the results from the secondary SUSENAS data that when it comes to household behaviour more traditional roles are played. There were significant differences noted within the household with regard to unpaid family labor. Women were consistently more likely to be classified as unpaid family labor. Table 54 shows the Population Age 10 and over working during the week before the SUSENAS survey and classified as unpaid family workers. Females are clearly overrepresented in proportion to males. This is a more traditional finding than that found in education.

Table 54: Classification of Unpaid Family Labor in Project Towns and Districts 2001 -2003

District/Municipality	2001		2002		2003	
	Male	Female	Male	Female	Male	Female
Tapanuli Tengah	5.4	24.7	6.2	18.8	10.4	26.5
Tapanuli Utara	29	65.7	25.8	59.9	23.3	57.2
Pangkal Pinang	5.3	19.1	2.7	11.6	3.2	14.5
Bogor	7.5	36.7	2.4	21.8	3.7	20.2
Bandung	2.9	22.4	2.1	16.4	2.9	17.5
Ciamis	4.8	43.9	5.4	43.7	5	47.8
Pemalang	8.2	34.4	7.2	26.4	4.8	17.9
Semarang	1.6	6.5	1.9	5.4	2.3	7.1
Serang	4.7	28.5	4.4	33.9	3.7	26.7
Jeneponto	25.7	62.5	20.2	63.8	16.7	51.9
Maros	14.2	40.2	8.5	16.6	18.8	24.9
Barru	12.7	29.6	15.7	29	2.9	1.7
Sidenreng Rappang	13.4	23.1	11.4	21.2	11.5	29.7
Luwu Utara	19.8	61.4	23.6	55.8	17.8	44.7

Source: BPS, SUSENAS

HOUSEHOLD EXPENDITURE AND REGIONAL INCOME

496. The target groups in the WSSP household survey were as follows:

- Existing PDAM customers
- Existing PDAM customers who used public taps
- Households who were not presently connected

497. There were differences found between the groups in relation to total and per capita expenditure, income and gender. Income, expenditure and regional differences were found to be more significant than in relation to gender.

498. Household expenditure data broken down into the three target groups is shown in Table 55. Existing PDAM customers have much higher average monthly and per capita expenditure than the other two groups. Existing PDAM customers had total monthly expenditure of Rp 1,498,029 and Rp 345,985 compared to Rp 936,474 and Rp 216,501 for the non connected group. Public Tap customers were only slightly lower than the non connected groups.

Table 55: Monthly and Per Capita Expenditures by Target Group (Rupiah)

Target Group	Descriptor	Per Capita Expenditure Per Month	Total Expenditure per Month
Connected to PDAM	Mean	345,985	1,498,029
	N	888	889
Public Tap Customers	Mean	203,637	908,062
	N	110	110
Not Connected	Mean	216,501	936,474
	N	1,891	1,895
Total	Mean	255,811	1,107,897
	N	2,889	2,894
	Std. Deviation	311,055	1,207,681

Source: WSSP Household Survey

499. It was found that differences were not statistically significant due to gender in the overall sample, which is reported in Table 56. Male respondents reported an average monthly total expenditure and per capita expenditure of Rp1,176,426 and Rp 267,271 respectively whereas female respondents reported only slightly lower overall differences. (Rp 1,026,335 and Rp 241,342 respectively.)

Table 56: Total Monthly and Per Capita Household Expenditure by Sex of Respondent

Sex		Total Expenditure per Month	Per Capita Expenditure Per Month
Male	Mean	1,176,426	267,271
	N	1,575	1,572
	Median	853,950	185,857
Female	Mean	1,026,335	241,342
	N	1,312	1,311
	Median	741,700	160,000
Total	Mean	1,108,217	255,480
	N	2,887	2,883
	Median	806,000	174,500

Source: WSSP Household Survey

500. For income there were statistically significant differences. The monthly household income by sex of respondent for the household survey is reported in Table 57.

Table 57: Monthly Household Income By Sex of Respondent

Household Income Per Month	Explanation	Sex		Total
		Male	Female	
Less than Rp 100000	Count	11	10	21
	% within Group	52.40%	47.60%	100.00%
	% of Total	0.40%	0.30%	0.70%
101000-200000	Count	52	125	177
	% within Group	29.40%	70.60%	100.00%
	% of Total	1.80%	4.30%	6.10%
201000 - 500000	Count	247	258	505
	% within Group	48.90%	51.10%	100.00%
	% of Total	8.60%	9.00%	17.50%
501000-1000000	Count	475	380	855
	% within Group	55.60%	44.40%	100.00%
	% of Total	16.50%	13.20%	29.70%
More than Rp 1000000	Count	784	538	1322
	% within Group	59.30%	40.70%	100.00%
	% of Total	27.20%	18.70%	45.90%
	Count	1569	1311	2880
	% within Group	54.50%	45.50%	100.00%
	% of Total	54.50%	45.50%	100.00%

Source: WSSP Household Survey

501. However further analysis (see Table 58) showed these differences to be entirely due to location. The statistically significant differences were only due to the South Sulawesi region which is significantly poorer overall compared to the other two regions. In Java and North Sumatra, there were only slight differences which were not statistically significant. This finding confirms the well established relationship between income level, gender and poverty.

Table 58: Results of Chi-Square Statistical Analysis of Monthly Income Differences by Sex and Disaggregated by Region

Region	Statistical Test	Value	df	Asymp. Sig. (2-sided)
South Sulawesi	Pearson Chi-Square	19.149(a)	4	0.001
	Likelihood Ratio	19.713	4	0.001
	Linear-by-Linear Association	11.079	1	0.001
	N of Valid Cases	1000		
Java	Pearson Chi-Square	5.432(b)	4	0.246
	Likelihood Ratio	5.722	4	0.221
	Linear-by-Linear Association	2.324	1	0.127
	N of Valid Cases	1282		
North Sumatra	Pearson Chi-Square	2.712(c)	4	0.607
	Likelihood Ratio	3.453	4	0.485
	Linear-by-Linear Association	0.504	1	0.478
	N of Valid Cases	598		

Source: WSSP Household Survey

502. So in conclusion the baseline profile suggests that the key to understanding gender differences between the project towns appears to be its very close relationship with income and poverty issues. These selected results of the WSSP household survey and review of the BPS SUSENAS data demonstrate that incomes, poverty related issues and location appear to explain more of the differences than gender between the various project towns. Gender differences appear to stem from these issues. In order to address gender, incomes and level of poverty of the household need to be addressed as part of an overall gender strategy.

3. WATER SUPPLY COMPONENT

HOUSEHOLD AND COMMUNITY LEVEL

503. There is a considerable body of experience in applying gender issues to many rural water supply projects in which women have been found to be the primary collectors, transporters, users, and managers of domestic water and promoters of home and community-based sanitation activities. In discussion, the project team agreed with the Ministry of Public Works (MPW) Cipta Karya and ADB representatives in Jakarta that the vast majority of experience to date has focused on such rural water supply projects. Based on the results of the survey, it was questionable whether the observations in the literature from the ADB and other organizations concerning time (and opportunity cost) spent on carrying water and the social role of water collection may be as valid in a more urban setting.

504. Data from the WSSP household surveys are mixed on this issue with differences found between towns as to who is carrying water from public taps. Women and children (not necessarily female children) were found to be doing most of this work in three of four locations. Distances are much shorter in these urban settings. Women and children were still primarily responsible (it should pointed out that in many of the towns, the majority of public taps are no longer used). The maximum distance in these three towns was 76 metres. This suggests that opportunity cost in time savings is considerably lower than in a rural setting. However, in distinct contrast, Semarang in which the average distance was considerably higher (i.e. 142 metres) the majority of water carried was carried by adult males as shown in Table 59

Table 59: Percentages of Water Carried and Average Distance by Sex and Family Structure Public Tap Customer Target Group

Water Carrier	Serang	Pemalang	Semarang	Taput	Average
Adult Male%	30	31	82	41	46
Adut Female%	59	46	6	47	39
Child Male%	21	16	12	12	15
Child Female%	14	7	0	0	5
Distance Metres	76	37	142	15	67

Source: WSSP Household Survey

505. The project will reduce collection times for households who choose to connect. However it is also clear that distances in these urban settings are not nearly as far as could sometimes be expected with rural projects. The findings are not as clear as would be expected from a rural setting.

506. Another issue in the literature is the improved convenience and hygiene that will result from a household connection and thus positively affect women's lives. The survey results suggest that households with higher incomes were more concerned about convenience and better hygiene. Poorer households (the non connected groups or those from the South Sulawesi and Sumatra regions) were less concerned about these issues.

507. In Java, even though many higher income households had access to good potable water from backyard wells, many still opted for a connection because of its convenience and it was more hygienic. For example in areas of Serang in Java, where good groundwater is available, 89% of PDAM customers said that convenience was an important reason for choosing to connect and for hygiene, the figure was 81%. In contrast, poor groundwater quality (their previous source) was only an important reason for only 15% of customers. Also of those who don't presently have a connection, the majority (73.4%) clearly wanted one which is shown in Table 60.

Table 60: Reasons for Not Connecting to PDAM

Reason For Not Connecting	Frequency	Percent	Valid Percent	Cumulative Percent
Connection too expensive	17	5.6	11.9	11.9
Monthly payment too expensive	3	1.0	2.1	14.0
There are no connections available	105	34.9	73.4	87.4
Current source is adequate	11	3.7	7.7	95.1
Already on waiting list of PDAM	2	0.7	1.4	96.5
PDAM water quality is poor	5	1.7	3.5	100.0
Total	143	47.5	100	
Other Target Groups	158	52.5		
	301	100		

Source: WSSP Household Survey

508. This finding was also confirmed in the Sulawesi region for existing PDAM customers who have the higher incomes. In contrast, for the group which was not presently connected (which had significantly lower incomes) they did not want a connection even if offered. The most important reason was that they felt their current groundwater source was adequate (69% of responses). It would appear that households with lower incomes may be prepared to put up with less convenience and lower hygiene level due to being poorer. Such a finding has gender implications as household connections clearly benefit women and children.

509. In order to consider if female respondents felt more strongly about this issue, the results were disaggregated by sex. Interestingly, no statistically significant differences were found due to gender, which suggests that lower income definitely overrides the gender implications. Considerable evidence from UNDP rural water projects suggest that poverty is a major barrier to access to water supply and leads to significant opportunity costs on women's time and labour.

> *"Poor women generally have less access to water supplies and greater constraints on time and labour resources than other women or men. They are likely to be in poorer health and their children are at greater risk of water-related diseases. They therefore could benefit most from improvements that bring water supplies closer to their homes. However they are least likely to participate in the collective decision-making that will bring this about"(UNDP,2003)*

510. "The reality is that a community is not a collection of equal people living in a particular geographic region. It is usually made up of individuals and groups who command different levels of power, wealth, influence and ability to express their needs, concerns and rights. Communities contain competing interest groups. Where resources are scarce, there is competition for supplies. Those at the lowest end of the power spectrum, which often implies the poor, will go without. Power issues place women in a disadvantaged position." (UNDP, 2003).

511. The evidence from the WSSP project suggest that this is still true for the Sulawesi region and North Sumatra regions which include smaller agriculturally based towns as there is still a relatively low willingness to connect to the PDAM if there is a viable alternative groundwater source available. In contrast, in Java with much larger more urbanized project cities and towns, households are clearly opting for the convenience and improved hygiene of the PDAM connection. It also indicates a need for more marketing by the PDAM's in Sulawesi of those presently unconnected and poorer households to better explain the advantages of being connected.

512. The results of WSSP survey also suggest that the more urbanized area households want to connect to the PDAM for a combination of the increased convenience and also improved hygiene. Anecdotal evidence from the Ministry, local consultant experience and in group discussions also indicated that reliability was an issue. It was felt that in urban settings many more people want to just pay their money for a reliable service, and get on selling their labor for as much as they can get - and that attitude includes a significant proportion of women. It was also felt that community participation concerning willingness to connect was much less an issue than was considered necessary for urban sanitation improvements.

513. These findings suggest that once a household obtains a connection there is a general improvement in convenience and in the level of hygiene for women and their families. Being poor appears to be the major barrier to many presently unconnected households. At the household level there is a need to consider how to increase the poorer households' awareness of the advantages of a connection. One part of the gender strategy will be for the preparation of a marketing strategy by PDAM's aimed at poorer households which would explain the benefits of a connection. Once water supply connection is in the house we can then improve the lives of women and children by focusing on sanitation.

514. The above discussion clearly suggests that low access to Water Supply does probably impact on women more than men. On the institutional side, the PDAM is the entity which needs to be targeted. The real issue is for PDAMs to start to accept some social obligations which have been lacking in the past and how to make these organizations more pro-poor and more gender sensitive.

INSTITUTIONAL LEVEL

515. The proposed approach to making PDAMs services more gender sensitive would be to:

- A - Apply external pressure to PDAMs and local government by:
    - concentrating on getting more women and representatives of disadvantaged groups onto the proposed Water Supply and Sanitation Stakeholder Committee(s)
    - in the institutional planning process (known as LIDAP), include in the proposed HRD/ training of "sector leaders" a minimum quota of women and also gender (and pro-poor) issues in the curricula;
    - devise and include some performance indicators on "gender equitable service" in the proposed performance contracts which have been recommended that PDAMs and their local government owners negotiate
    - in creating and training the "local sector regulator", ensure that wider community representation is included. The LIDAP proposals are framed in terms of an "umpire" for the performance contract proposed between the PDAM and local government owners. "Gender sensitivity training" should be included
    - Try to establish WS and Sanitation consultative (user) groups with significant female representation (such as in the Jakarta Water Supply Regulatory Body which has already been done across Jakarta) - although it has been observed that a markedly low level of female representation has become apparent);
- B - Internally to the PDAMs
    - continue development of the "promotion on merit" efforts to ensure more women become directors (There are quite a lot of directors already although considerably below 50%!)
    - work with these women directors to find if they have ways of promoting the cause (these women often no longer see issues in how services impact differently on the sexes)
    - create a sub-section with the "Customer Services Division" of each PDAM to concentrate on improving pro-poor and gender policies
    - include gender in sector training materials (as has been attempted by the PDAMs' own association - PERPAMSI – but with limited success).

516. Statistics on PDAM staffing levels, including male/female split were collected as part of the WSSP as well as on directors and governors. Consequently it will be possible to monitor progress on these interventions and would form a solid basis for development of an action plan.

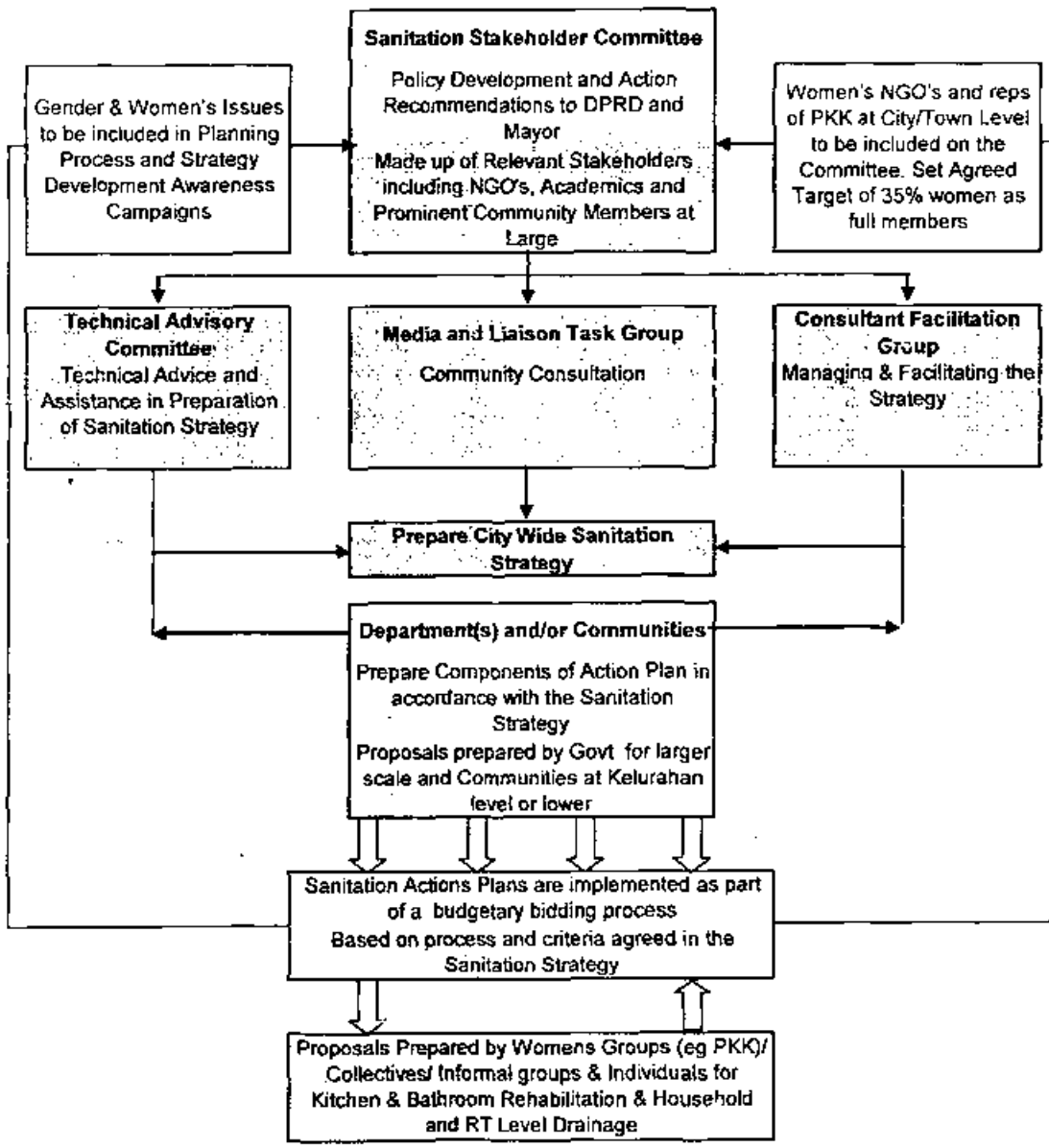
4. SANITATION COMPONENT

517. There are women's organizations at the Kelurahan level (e.g. the PKK) which are generally participants in the LKMD and in some areas they do play a very active role in decision-

making. Generally however, there is normally low representation of women in decision-making about funding for projects using outside government resources. There is a concern that women's views will not be systematically represented in decision-making bodies. This project provides opportunities to close this gap. It will be important in the development of a sanitation strategy flowing from the new water supply in each location to ensure that funding for women's participation in projects will be encouraged by a requirement that for each proposal to be funded that there should an agreed ratio given to specific projects for women's groups.

518. The sanitation component of the project will have positive impacts on family health and hygiene and consequently be time saving for women as the major care givers particularly the female headed households who have less chance of an alternative care giver. Technical Assistance will be included in the loan which will target neighborhood level women's organization to develop the sanitation program.

Figure 19: Gender Action Plan within overall Kota/Kabupaten Sanitation Strategy



519. The Gender Strategy for sanitation will be implemented as part of an overall Kota/Kabupaten CBS Sanitation Strategy (see Figure 19). The key organization which would coordinate the strategy would be the Sanitation Stakeholder Committee which would include representatives from Government, Elected Officials, Academics and Community members from

Civil Society. The overall strategy will include objectives, criteria for selecting target locations and groups. It will also include standards for physical works based on physical criteria such as soil type, rainfall and drainage characteristics. There would an inventory of typical problems and current experience with how people live with their sanitation and how they perceive it.

520. Proposals prepared by community based and lower levels of government would be subject to review by the Technical Advisory Committee before approval by the Stakeholder Committee using agreed evaluation criteria from the Strategy and input and comments from the broader community.

521. For promoting participation by women a sub component of the strategy would agree on ratios of proposals from gender based groups to be approved in combination with or in addition to more straightforward public and community works.

522. At this stage, the target sub-projects for gender interventions would be:

- Training and Community preparation and organization for CBS at RW/RT level
- Renovations/ Construction of kitchens and bathrooms in order to promote improved health and hygiene and efficiency in low income household and groups of households involved in food preparation and distribution.
- Organization and/or renovation of tertiary and secondary drainage in low income neighborhoods at RT/RW level
- Planning, Organization and Strategic Location of MCK and Communal Septic tanks and other BORDA style interventions

523. The results of the socio-economic survey in all Kotas / Kabupatens indicated a satisfactory degree of willingness for households (approximately 30% of households) to be involved in CBS training for sanitation. An allowance for funding of a gender sub-component will be included in the project budget. At this stage the gender strategy would be piloted in up to three project towns and /or Kabupatens. *Implementation would not occur until at least year 2 of the* project so that the overall sanitation strategy is in place to provide the agreed evaluation criteria and amount of funding to flow to women's participation in the project.

5. NEXT STEPS

524. In the first year of implementation a gender specialist would be included in the implementation team. The role of the gender specialist would be to prepare a detailed action plan based on the strategy to improve the participation of women in decision-making and to mainstream gender within the total project.

525. In order to improve women's involvement in decision making the focus of water supply will be at the household and institutional level. For sanitation, the strategy will focus on the community and household particularly in those areas which have new household water connections.

526. In order to mainstream gender within the total project, the following steps discussed in previous sections will be necessary:

- Setting a target to employ/ensure women to participate in the Project Management Unit (PMU) and Project Implementation Units (PIUs) of the project.
- The target should include inclusion of a gender specialist to further develop a detailed Gender Action Plan (GAP) and monitor implementation during implementation of the project.
- The development of marketing campaigns in poorer areas to explain the benefits of a household connection.
- Setting targets for women in the Stakeholder Committees to ensure women's needs and priorities are taken into account in developing proposals for sanitation.
- Training on gender issues for all PDAM's, PMU, PIUs, PDAMs, RW and RT level staff to increase understanding and sensitivity to gender issues as detailed in above sections.

- Training on gender issues for school teachers, health workers, religious leaders involved in the community based sanitation program
- Mainstream gender issues within the new curriculum on WSS for school children (e.g. ensure that methods illustrate roles and responsibilities for both males and female children–and not portray traditional gender roles)
- The same method should be applied for all materials used in campaigns etc.
- Target women in training opportunities for maintenance of WSS facilities where appropriate
- Target women for employment opportunities in renovations and construction of kitchens and bathrooms in the sanitation component
- Target as percentage of funds for sanitation action plans for proposals specifically prepared by women's groups.

F. LAND ACQUISITION AND RESETTLEMENT IMPACTS

1. INTRODUCTION

527. ADB resettlement policy states that :

'Resettlement will be "significant" where 200 or more people experience major impacts. Major impacts are defined as involving affected people being physically displaced from housing and/or having 10% or more of their productive, income generating assets lost."

"Involuntary resettlement" addresses social and economic impacts that are permanent or temporary and are (i) caused by acquisition of land and other fixed assets, (ii) by change in the use of land, or (iii) restrictions imposed on land as a result of an ADB operation. "

528. An "affected person" is one who experiences such impacts.

INDONESIAN POLICY ON LAND ACQUISITION

529. GOI has its own policy on land acquisition which was recently revised as a new Presidential Regulation No 36, 2005. This policy supersedes its previous policy of Presidential Regulation No 55 of 1993. The new policy has accepted that replacement value of land to be interpreted as market value as well as taking into consideration the NJOP or tax value of the land. The main point of departure from ADB Resettlement Policy is the new provision where there may be an extended negotiation concerning land required for a public purpose (eg. for water supply and sanitation projects like WSSP). The provision allows a "public" project to proceed to implementation even if private landowners in the dispute have not reached agreement about land value. The provision cannot be enacted until various statutory time limits have been exceeded for coming to agreement. These provisions have been enacted in order to overcome project delays that have occurred in public projects due to extended land acquisition negotiations and subsequent legal proceedings.

2. LAND ACQUISITION AND RESETTLEMENT

PROCESS

530. During May 2005, a Land Acquisition and Resettlement Checklist was translated, distributed and explained to all PDAM's and Local Governments. The local social development specialists on the team then visited the sites using a rapid appraisal method that needed to be acquired using a rapid appraisal method and discussed the project with local people.

531. In July 2005, an additional request was sent via Fax to all participating PDAM's in order to ensure that all information submitted was accurate and to confirm that consultation had been carried out with all owners of sites to be acquired.

PRESENT STATUS

532. For one site, Kabupaten Bogor, no land acquisition or resettlement is required. As at the time of preparation of the Final Report the total land acquisition for the WSSP Project required for other sites still in the project was 3.5 hectares. The total land temporarily affected for construction of pipeline corridors (RoW) was 1.3 Ha. This RoW land will not be permanently acquired and is only required for the construction period which is anticipated to take 4-6 months.

Table 61: Areas of Land to be Acquired

Item	Units	Serang	Maros	Jeneponto	Barru	Palopo	Bandung	TapTeng	Total
Intake	l/sec	220	220	150	75	250	600	100	1,615
New WTP	l/sec	200	200	75	50	200	500	100	1,325
New Reservoir Storage	cu m	4,000	3,000	500	500	1,700	9,000	1,000	19,700
Land Estimate Intake	sq m	580	380	100	200	300	0	180	1,740
Land Estimate WTP	sq m	3,000	7,000	3,700	3,600	2,100	5,000	3,570	27,970
Land Estimate Reservoir	sq m	1,500	1,000	200	220	600	0	330	3,850
Total Land excl. RoW	**sq m**	**5,080**	**8,380**	**4,000**	**4,020**	**3,000**	**6,000**	**4,080**	**34,560**
RoW	sq m	3,900	0	0	1,500	1,500	6,000	0	12,900

Note: Land to be used for the Project in Bogor is already owned by the PDAM and is non-productive.

533. The total number of owners affected for the seven sites is eight only. There is no existing population living on any of the sites. There are no potential livelihoods issues on any of the sites.

Table 62: Status of Ownership and Occupation of Land to be Acquired

Location	Land Ownership Status	Existing Population Living on Land	Livelihoods Potential
Serang	Private 1 owner	0	Non Productive Land
Bogor	Previously Acquired	0	Non Productive Land
Maros	Private 1 owner	0	Bamboo Supplements Income
Jeneponto	Private 1 owner	0	Non Productive Land
Barru	Private 1 owner	0	Non Productive Land
Palopo	Private 2 Owners	0	Non Productive Land
Bandung	Private 1 Owner	0	Non Productive Land
Tapanuli Tengah	Private 1 owner	0	Non Productive Land
Total	8 Private Owners	0	

534. All locations are non-productive empty land or land already acquired for previous projects. The impacts of the project on land acquisition and resettlement were summarised for the remaining sites and are set out in Table 61 and Table 62. Each of the proposed sites is now described in more detail below.

MAROS

LAND ACQUISITION AND RESETTLEMENT

535. The Project in Maros has a very small amount of land to be acquired and there will be no involuntary resettlement required. The total land required is 0.838 Ha (8380 M2). The land is required for a new intake, a water treatment plant and adjoining reservoir. The land that will be temporarily affected for the construction of the pipeline corridor to the reservoir runs along public road.

536. The land to be acquired is located in Kelurahan Borong in Kecamatan Tanralili and is presently owned by one owner (Mr H Faisal Abidin) (Certificate SHM No 705/1997) who does not live on the land. It is of very poor capability (described as Kebun Bambu) and is unproductive except for the occasional use of the bamboo on the land which is used for domestic purposes and is sometimes a small source of income if it is sold. There is no other person presently living on

the land so there are no livelihoods affected by the project. The owner has been informed that the PDAM wishes to purchase the land and the negotiation will be carried out in accordance with the requirements of the ADB policy on involuntary resettlement and Indonesian Law.

SERANG

LAND ACQUISITION AND RESETTLEMENT

537. The Project in Serang has a very small amount of land to be acquired and there will be no involuntary resettlement required. The total land required is 0.508 Ha (5080 M2). The land is required for a new intake, a water treatment plant and adjoining reservoir. The land that will be temporarily affected for the construction of the pipeline corridor to the reservoir totalling 3090m2 runs along public road

538. The land to be acquired is located in Kelurahan Gelam in Kecamatan Cipocok Jaya and is presently owned by one owner (Mr D Leo) (Certificate SPPT No 36041500070190076) who does not live on the land. It is of very poor capability (described as Kebun Umum) and is unproductive except for the occasional use of some fruit trees on the land which are used only for domestic purposes. There is no other person presently living on the land so there are no livelihoods affected by the project. The owner has been informed that the PDAM wishes to purchase the land and the negotiation will be carried out in accordance with the requirements of the ADB policy on involuntary resettlement and Indonesian Law.

BANDUNG

LAND ACQUISITION AND RESETTLEMENT

539. The Project in Bandung has land to be acquired but there will be no involuntary resettlement required. The total land required is 0.5 Ha (5000 M2). The land is required for a water treatment plant and adjoining reservoir. The land that will be temporarily affected for the construction of the pipeline corridor to the reservoir is located is some 0.6 Ha (6000 M2) and is located near the treatment plant in Desa Sukamaju Kecamatan Cimaung.

540. The land to be acquired is located in Kelurahan Cimaung in Desa Sukamaju and is presently owned by a single owner (Mrs Onang H) (Certificate SHM No 090) who does not live on the land. It is un-productive land which is now uneconomic to farm and therefore lays idle. There is no other person presently living on the land. The owners will be offered land of equivalent capability in the immediate vicinity as an alternative to cash compensation if there is suitable land available. The owner has been informed that the PDAM wishes to purchase the land and the negotiation will be carried out in accordance with the requirements of the ADB policy on involuntary resettlement and Indonesian Law

JENEPONTO

LAND ACQUISITION AND RESETTLEMENT

541. The Project in Jeneponto has a very small amount of land to be acquired and there will be no involuntary resettlement required. The total land required is 0.4 Ha or 4000m2. The land is required for a new intake, a water treatment plant and adjoining reservoir. The land that will be temporarily affected for the construction of the pipeline corridor to the reservoir runs along public road.

542. The land to be acquired is located in Desa Empoang in Kecamatan Binamu to the northwest of the town of Jeneponto and is presently owned by one owner who does not live on the land. It is of very poor capability (described as Kebun) and is unproductive except there is occasional use for cattle grazing and wood collection for domestic purposes. There is no other person presently living on the land so there are no livelihoods affected by the project. The owner has been informed that the PDAM wishes to purchase the land and the negotiation will be carried out in accordance with the requirements of the ADB policy on involuntary resettlement and Indonesian Law.

PALOPO

LAND ACQUISITION AND RESETTLEMENT

543. The Project in Palopo has a very small amount of land to be acquired and there will be no involuntary resettlement required. The total land required is 0.3 Ha or 3000m2. The land is required for a new intake, a water treatment plant and adjoining reservoir. The land that will be temporarily affected for the construction of the pipeline corridor to the reservoir runs along public road.

544. The land to be acquired is located in Kelurahan Battang in Kecamatan Telluwanua to the northwest of the town of Palopo and is presently owned by two owners (Mr H Raiman ,2000m2 and Mr Suaeb Said ,1000m2) who do not live on the land. It is of very poor capability (described as Kebun) and is unproductive except there is occasional use for cattle grazing and wood collection for domestic purposes. There is no other person presently living on the land so there are no livelihoods affected by the project. The owner has been informed that the PDAM wishes to purchase the land and the negotiation will be carried out in accordance with the requirements of the ADB policy on involuntary resettlement and Indonesian Law.

BARRU

LAND ACQUISITION AND RESETTLEMENT

545. The Project in Barru has a very small amount of land to be acquired and there will be no involuntary resettlement required. The total land required is 0.402 Ha or 4020m2. The land is required for a new intake, a water treatment plant and adjoining reservoir. The land that will be temporarily affected for the construction of the pipeline corridor to the reservoir runs along public road.

546. The land to be acquired is located in Kelurahan Palamo in Kecamatan Mallusetasi to the north of the town of Barru and is presently owned by one owner (Mr H Ismail) who does not live on the land. It is of very poor capability (described as Kebun) and is unproductive except there is occasional use for cattle grazing and wood collection for domestic purposes. There is no other person presently living on the land so there are no livelihoods affected by the project. The owner has been informed that the PDAM wishes to purchase the land and the negotiation will be carried out in accordance with the requirements of the ADB policy on involuntary resettlement and Indonesian Law.

TAPANULI TENGAH

LAND ACQUISITION AND RESETTLEMENT

547. The Project in Tapanuli Tengah has a very small amount of land to be acquired and there will be no involuntary resettlement required. The total land required is 0.4 Ha or 4080m2. The land is required for a new intake, a water treatment plant and adjoining reservoir. The land that will be temporarily affected for the construction of the pipeline corridor to the reservoir runs along public road.

548. The land to be acquired is located in Desa Huta Nabolon in Kecamatan Tukka to the northwest of the town of and is presently owned by one owner who does not live on the land. It is of very poor capability (described as Kebun) and is unproductive except there is occasional use for cattle grazing and wood collection for domestic purposes. There is no other person presently living on the land so there are no livelihoods affected by the project. The owner has been informed that the PDAM wishes to purchase the land and the negotiation will be carried out in accordance with the requirements of the ADB policy on involuntary resettlement and Indonesian Law.

549. For the sanitation component there will be no delineation of and acquisition of land identification of and any resettlement impacts until at least the second year of implementation of the loan. The proposed sanitation investments have been very small and their land requirements are in some inner urban locations where it is possible that land acquisition and a small amount of resettlement would be necessary. To address this possibility, ADB policy provides for the preparation of a resettlement framework.

"For ADB equity investments, loans, and/or guarantees, including through financial intermediaries with investments, subprojects, or components that have not been selected or prepared before appraisal and that may involve involuntary resettlement, a resettlement framework must be submitted. A resettlement framework sets out the broad magnitude of the scope, together with the policy, procedures, and capacity-building requirements for preparing future subprojects, components, or investments."

550. All Districts and/or communities are to be required to submit certified letters establishing the present status and ownership of any land required for project implementation.

551. A Resettlement Framework has been prepared for the unlikely situation where such unanticipated resettlement impacts occurred during implementation of the project. The resettlement is attached as part of Appendix D.

G. INDIGENOUS PEOPLE

552. The following is a working definition of Indigenous People:

Indigenous people "should be regarded as those with a social or cultural identity distinct from the dominant or mainstream society, which makes them vulnerable to being disadvantaged in the processes of development". The Policy on indigenous people includes further description as follows:

"Two significant characteristics would be (i) descent from population groups present in a given area, most often before modern states or territories were created and before modern borders were defined, and (ii) maintenance of cultural and social identities, and social, economic, cultural, and political institutions separate from mainstream or dominant societies and cultures. In some cases, over recent centuries, tribal groups or cultural minorities have migrated into areas to which they are not indigenous, but have established a presence and continue to maintain a definite and separate social and cultural identity and related social institutions. In such cases, the second identifying characteristic would carry greater weight……

553. Additional characteristics often ascribed to indigenous peoples include:

xii. self identification and identification by others as being part of a distinct indigenous cultural group, and the display of desire to preserve that cultural identity,

xiii. a linguistic identity different from that of the dominant society,

xiv. social, cultural, economic, and political traditions and institutions distinct from the dominant culture,

xv. economic systems oriented more toward traditional systems of production than mainstream systems, and

xvi. unique ties and attachments to traditional habitats and ancestral territories and natural resources in these habitats and territories.

Indigenous peoples also are described with reference to their ways of life. In many cases, indigenous peoples live in separated communities or cultural or ethnic groupings. Such communities and groupings often are located in areas geographically distant from urban centers and often function at the periphery of the political, social, cultural, and economic systems of the dominant or mainstream society. At the same time, however, it is not unusual to find indigenous peoples communities on the fringes of urban areas, comprising indigenous peoples who have migrated but remain distinct from the mainstream - The Bank's Policy on Indigenous Peoples, April 1998.

554. The above definitions were used by the study team in order to discuss the presence or absence of any groups fitting any of the above characteristics. The only characteristic that was unique to all three regions was linguistic identity. Even within Java there are differences in languages between West Java (Sunda) and Central Java (Javanese). There are also religious differences between North Sumatra which is predominately Christian whilst the other two regions are Muslim. However, none of the population groups that make up these areas could be considered as not following a predominately mainstream market based urban economy. Based on the results of the fieldwork in each location there were no indigenous people's groups found in any of the proposed locations for the proposed project which were predominantly urban or on the

urban rural fringes Consequently no impacts on indigenous people resulting from the project are anticipated and it was agreed with the Bank that an Indigenous Peoples Framework was not considered necessary.

H. IMPACT ON LABOR

555. In order to estimate the overall impact of the project on the labour of water sellers an analysis was conducted of water seller behaviour to consider how many households can be reasonably serviced by one seller on a continuing basis. Buying water is common across all the Towns and Districts and in some areas there is high dependence on water sellers to supplement normal water sources and in some poorer areas where shallow wells are limited or have become polluted or saline, there is virtually total dependence. Competition can be intense but pricing still tends to be directly proportional to the distance from the source supplier. A combination of the results of the SUSENAS survey percentages of people buying water and those from the WSSP survey results were adopted as the SUSENAS definition is ambiguous and may include bottled water sales and thus tend to maximize or overstate the resulting labour effects.

556. A typical per capita consumption of between 20 to 30 liters per day was used to estimate that on average each household could consume up to a total of 150 liters per day. A water seller could be reasonably expected to supply up to 1600 liters in each day which is equivalent to 4 by 400 liters gerobaks (push carts of water) per day. The analysis concluded that one water seller may be servicing from 50 to 100 households. The results show that in general terms, the impact on labour is minor in terms of total full time jobs lost. As may be observed in the table the only location which exceeds 35 jobs is the Semarang which has an unusually high dependence on buying drinking water using the SUSENAS definition. The results of the analysis are shown in Table 63.

557. It is considered that with this level of impact that such workers will simply move their focus of operations to neighboring areas which continue not to be connected to the PDAM. These figures may also overstate the impact as not all households in newly serviced areas will choose to connect to the PDAM. Also, connected households will not necessarily stop using water sellers but may supplement their PDAM supply if there are service difficulties.

558. Another mitigating factor is that in the areas to which there is new PDAM water supply there will also be sanitation projects which will produce on-going unskilled labour jobs for the construction and rehabilitation of neighborhood and local drainage, bathroom, kitchens and septic tanks and public facilities. These employment opportunities will start after the preparation of the Town or District Sanitation Strategy and Preparation of Community based action plans and proposals at the local level.

Table 63: Impact of the WSSP Project on Unskilled Labor

Location	SUSENAS 2003 % Buying Drinking Water*	New Connections Households	Households Using Water Sellers	Total Jobs Potentially Affected
Central Tapanuli	27.1	6,270	1,699	17
North Tapanuli	15.8	8,050	1,272	13
Pangkal Pinang Municipality	17.9	10,000	1,790	18
Bogor	10.3	18,900	1,947	19
Bandung	13.9	25,064	3,484	35
Ciamis	8.8	1,450	128	1
Pemalang	16.8	10,000	1,680	17
Semarang Municipality	73.8	40,000	29,520	295
Serang	7.3	21,200	1,548	15
Jeneponto	18.1	9,700	1,756	18
Maros	11.1	13,200	1,465	15
Barru	30.7	7,200	2,210	22
Sidenreng Rappang	8.1	13,000	1,053	11
Luwu Utara	5.7	11,550	658	7
Total / Average	19.0	195,584	37,077	371

Source: SUSENAS & WSSP Project Team

559. Another mitigating factor is that in the areas to which there is new PDAM water supply there will also be sanitation projects which will produce on-going unskilled labour jobs for the construction and rehabilitation of neighbourhood and local drainage, bathroom, kitchens and septic tanks and public facilities. These employment opportunities will start after the preparation of the Town or District Sanitation Strategy and preparation of community based action plans and proposals at the local level.

VIII.FINANCE AND ECONOMICS

A. INTRODUCTION

560. Project and loan feasibility requires consideration of a range of factors, certain of which are project and others more agency based, eg:

- Project Feasibility:
  - technical ability to implement, eg can the project be built to provide the expected output;
  - demand for the project output at the tariffs required – for water supply, this requires consideration of demand for connections and for water from those connection;
  - institutional ability to fund the project, given specific national funding modalities;
  - institutional ability to implement the works, given specific implementation modalities and allowing for the implementing agency's particular experience;
  - financial ability to control and monitor implementation, given as above;
  - political feasibility of making cash advance or equity injections to finance needs which cannot realistically be covered by tariffs;
  - affordability effects of required tariffs;
  - political feasibility of implementing required tariffs;
- Project Viability:
  - project financial DCF/IRR analysis, which compares financial returns with the cost of capital;
  - project economic DCF/IRR analysis, which compares the costs of project supply with the economic costs of alternative supplies;
  - consideration of project risks and uncertainties.

561. All of these, apart from "technical ability" and "institutional ability to implement the works", fall under the general heading of finance and economics. Often, however, only the items given under project viability are so considered.

562. This part of the Final Report starts with overall project costs and financing in ADB format. It then covers the following items: (a) regional government historic and forecast performance; (b) regional government borrowing capacity; (c) PDAM historic and forecast performance; (d) PDAM tariffs; (e) demand for PDAM water; (f) water supply sub-project costs, financing and financial analysis; (g) sanitation sub-project costs, financing and financial analysis; (h) water supply sub-project economic analysis; (i) sanitation sub-project economic analysis; (j) sensitivity analysis; (k) affordability analysis; (l) financial management capabilities.

B. LOAN PROJECT COSTS AND FINANCING

1. ASSUMPTIONS

563. Loan project costs and financing have been prepared in accordance with the Guidelines for the Financial Governance and Management of Investment Projects Financed by the Asian Development Bank, January 2002. It is known that these guidelines are being updated and further assistance was obtained from a June 2004 Methodology Note and from the ADB directly.

564. Project costs have been derived from base engineering costs in mid 2005 prices by the addition of physical contingencies (5% for procurement and Technical Assistance and 10% for civil works). Foreign exchange has been taken as 10% of procurement and at specific rates for Technical Assistance derived from the cost estimates given in Section IV. Value added tax at 10% has been added to all items except land and resettlement and administration. Project costs

in nominal prices have been obtained by the assumptions of (a) local inflation at 7.1% in 2005 and 5.5% thereafter (as provided by the ADB); (b) foreign inflation at 3.0% in 2005, 2.8% in 2006, 1.9% in 2007, 1.0% in 2008 and 6% thereafter (manufacturers' unit value rates obtained directly from the World Bank. The rupiah US$ rate has been forecast using comparative local and US GDP inflation rates (as now recommended by the World Bank who give 1.9% in 2005, 2.1%, 2.3% 2,7%, 2.7% and 2.4% in 2010 and thereafter).

565. The ADB loan to GOI will be on-lent in rupiah to local government and, probably through them, to the PDAM. The terms expected for the on-lent loan are the Libor rate at the time of disbursement plus 5.01[8]%, to cover forex risk (3.89%), default risk (0.78%), bank fee (0.25%) and administration (0.10%). The forex rate for on-lending will be set at time of loan disbursement[9]. Since this could be over five years, the best estimate for Libor is provided by the 5-year fixed swap rate, which as of August 19, 2005 was 4.54%. In accordance with standard ADB practice, this rate will also be assumed for the ADB loan to GOI. This implies an on-lending rate of 9.55%[10]. In addition there will be commitment charge of 0.75%. The standard ADB front end fee is 1.0%. If the loan is signed before mid 2006, this fee will be waived but the ADB have instructed the consultants to include it at this stage. The loan will have a capitalization/grace period of 5 years, followed by a 20 year repayment period. Following Law 33/04, the charges and the loan terms will be passed on to the sub-borrowers.

566. In addition to the main ADB loan from its ordinary capital reserves, it is expected that an ADF loan will be made available. This is expected to be limited to US$ 10 million but will have 1.0% interest during an 8 year grace period and 1.5% interest during the following 24 year repayment period. There will be no other charges or fees.

567. The ADB loan and ADF loan are expected to cover 70% of project costs and this has been assumed. The local government is expected to fund land acquisition. In order to even out tariff increase requirements, it has been necessary to ask the local government to finance or pre-finance certain PDAM investment in early project years. If it is pre-finance it could be repaid from user connection fees later in the project, as shown in Table 96 below.

568. The ADB is now preparing a sector loan covering Regional Government Finance and Governance Reform and it is planned that this will provide a Regional Government Budgeting and Data Collection and Analysis System (SIKD) for 100 RGs under MOF. The intention is that these will include the WSSP RGs. The cost of each system is Rp 118 million (US$ 118,000). These systems will be provided to the RGs as grant and the ADB suggests that this be considered as counterpart funding for WSSP (for this reason it is included central grant funding in the financing tables. A similar Regional Financial Management Information System (FMIS) will also be installed under the sector loan in 40 RGs. These will cost Rp 182 million each but the program is under the control of MOHA who are not willing to redirect them to WSSP RGs.

569. In general, GOI has expresses an unwillingness to consider grant funding of APBN funds to RG, apart from that covered by existing budget balancing and funds allocation procedures. Bappenas, however, say that they would be willing to consider on-granting from foreign loan receipts for non-revenue earning projects or for Technical Assistance but that existing mechanisms to do this do not cover urban infrastructure. The Directorate of External Funds Management in DG Treasury is in the process of preparing an implementing PP and an operationalizing KMK which might address this problem but their exact contents are uncertain. Bapeki, the MOF Agency for Fiscal Analysis, say that until such mechanisms are in place it is not possible to include on-lending and on-granting from the same foreign loan. The Planning Directorate of the Ministry of Public Works and the ADB, however, consider that mechanisms to use central grant funding of ADF loan funding for sanitation and institutional or capacity building projects will be found and have instructed the PPTA consultants to inform regional governments that this should be assumed in SPAR preparation.

570. Sanitation projects as now defined include a sludge treatment plant (IPLT) at Serang and pilot sanitation projects at each RG. A package includes 3 community sanitation centers (CSC), 3 simplified community sewerage systems (SCS) and toilet facilities at 20 schools. The larger RGs,

[8] This number was changed recently from 5.02%. This rate, and the other on-lending assumptions given might change.
[9] Since ADB loan interest is set over the life of the loan at Libor spot rates, the mark-up also includes a Libor rate risk.
[10] Central government representatives have been telling RGs that the rate will be lower than this, around 8%.

Bandung, Bogor and Semarang, are assumed to have two packages each. Discussions on on-granting these facilities are continuing and the ADB have instructed the consultants to assume on-granting for the pilot projects but not for the Serang IPLT.

571. For the Serang IPLT, the RG is expected to supply land and other equity to finance 30% of fixed investment in total. The remainder will be financed by an ADF loan, on-lent to the RG. A mark-up of 5.02% on the ADF rate has been assumed in the IDC calculation. For the pilot CSC and SCS sanitation projects, the RGs have been assumed to provide land as necessary and users 10% of the project costs. All other sanitation costs are assumed to be financed by on-granting of an ADF loan.

572. Technical Assistance includes: (a) development consultancy (DBO and AMDAL); (b) project management; (c) regional government support for SIKD and LIDAP; (d) PDAM support for FOPIP. There remains the possibility of bilateral funding to finance, for example, PDAM capacity building (FOPIP). This has not yet been agreed and the ADB have instructed the consultants not to assume it. Therefore all forecast Technical Assistance costs are assumed to be funded by the ADF loan, to the extent that it is sufficient, and then by additions to the main ADB loan. All Technical Assistance is assumed to be on-granted to RGs.

2. PROJECT COSTS

573. Proposed costs of each sub-project are shown in Table 105 below. Overall project costs are given in various ADB formats in the following tables. A breakdown of sanitation project costs is given in Table 110.

Table 64: Project Cost Summary (US$ Million)

Description	Foreign Exchange	Local Currency	Total Cost	%
A. Base Costs (including taxes)				
1. Water Supply	2.8	63.9	66.7	52%
2. Sanitation/Health	0.1	5.3	5.4	4%
3. Technical Assistance	3.0	13.6	16.7	13%
Subtotal (A)	5.8	82.9	88.7	69%
B. Contingencies				
Physical	0.3	5.3	5.6	4%
Price	0.3	13.9	14.3	11%
Subtotal (B)	0.6	19.3	19.9	15%
C. Financing Costs				
IDC, Charges & Fees	11.7	8.4	20.0	16%
Subtotal (C)	11.7	8.4	20.0	16%
Total	**18.2**	**110.5**	**128.7**	**100%**

Note:
1. The costs in the above and following tables refer to a project scope covering eight locations – Kab Serang, Kab Tapanuli Tengah, Kab Barru, Kab Jeneponto, Kab Maros, Kot Palopo, Kab Bandung and Kab Bogor.
2. Local currency IDC etc is the 5.01% mark-up charged by GOI to sub-borrowers

Table 65: Nominal Project Costs by Sector (including taxes, contingencies and IDC)

Sector	Rp Billion			US$ Million			Total %
	FE	Local	Total	FE	Local	Total	
Water Supply	134.9	933.4	1,068.2	12.3	87.0	99.3	77.2%
Sanitation /Health	2.0	73.1	75.1	0.2	6.8	7.0	5.4%
Technical Assistance	61.4	180.0	241.4	5.7	16.7	22.4	17.4%
Total	198.3	1,186.5	1,384.8	18.2	110.5	128.7	100.0%

Table 66: Project Costs by Type and Currency

Description	Rp Billion			US$ Million		
	Foreign	Local	Total	Foreign	Local	Total
Base Costs						
Procurement, WS	29.6	266.8	296.4	2.8	25.0	27.7
Procurement, Sanitation	0.6	5.6	6.2	0.1	0.5	0.6
Civil Works, WS	0.0	284.7	284.7	0.0	26.6	26.6
Civil Works, Sanitation	0.0	28.7	28.7	0.0	2.7	2.7
Land and Resettlement	0.0	22.1	22.1	0.0	2.1	2.1
Design	0.0	24.5	24.5	0.0	2.3	2.3
Supervision	0.0	15.7	15.7	0.0	1.5	1.5
Administration	0.0	16.4	16.4	0.0	1.5	1.5
Dev. Cons. (DBO/AMDAL)	1.0	1.5	2.5	0.1	0.1	0.2
Project Management	16.5	32.1	48.6	1.5	3.0	4.5
Health & Hygiene	0.0	8.8	8.8	0.0	0.8	0.8
RG Support (SIKD)	3.2	5.2	8.4	0.3	0.5	0.8
RG Support (LIDAP)	5.8	45.6	51.4	0.5	4.2	4.8
PDAM Support (FOPIP)	5.8	45.6	51.4	0.5	4.2	4.8
Taxes & Duties	0.0	82.72	82.7	0.0	7.7	7.7
Total Base Costs	**62.5**	**885.9**	**948.4**	**5.8**	**82.9**	**88.7**
Physical Contingency	**3.1**	**57.2**	**60.3**	**0.3**	**5.3**	**5.6**
Price Contingency	3.8	150.3	154.1	0.3	13.9	14.3
Fixed Investent Cost	69.4	1,093.4	1,162.8	6.5	102.1	108.6
ADB/Subloan IDC	126.0	90.8	216.7	11.4	8.2	19.6
ADF/Subloan IDC	3.0	2.3	5.2	0.3	0.2	0.5
Total Funding Required	**198.3**	**1,186.5**	**1,384.8**	**18.2**	**110.5**	**128.7**

Table 67: Project Costs by Type and Year (Rp Million)

Investment	Total	2006	2007	2008	2009	2010
(Base Rp M)						
Procurement, WS	257.6	0.2	169.4	65.2	22.8	0.0
Procurement, WS Conn.	38.8	0.0	4.6	9.9	17.2	7.2
Procurement, Sanitation	6.2	0.0	2.1	2.6	1.6	0.0
Civil Works, WS	267.0	0.0	154.0	80.8	32.2	0.0
Civil Works, WS Conn.	17.7	0.0	1.5	7.2	6.6	2.4
Civil Works, Sanitation	28.7	2.4	9.0	11.3	6.0	0.0
Land and Resettlement	22.1	2.9	6.5	7.5	5.2	0.0
Design	24.5	6.4	7.2	6.8	4.0	0.0
Supervision	15.7	4.3	4.6	4.4	2.5	0.0
Administration	16.4	0.3	9.0	4.9	2.2	0.0
Dev. Cons. (DBO/AMDAL)	2.5	2.5	0.0	0.0	0.0	0.0
Project Management	48.6	4.4	17.5	15.5	11.2	0.0
Health & Hygiene	8.8	3.2	2.0	1.2	1.2	1.2
RG Support (SIKD)	8.4	4.2	4.2	0.0	0.0	0.0
RG Support (LIDAP)	51.4	10.2	11.6	10.8	9.6	9.2
PDAM Support (FOPIP)	51.4	10.2	11.6	10.8	9.6	9.2
Taxes & Duties	82.72	4.8	39.9	22.7	12.4	2.9
Total Base Costs	**948.4**	**55.9**	**454.8**	**261.6**	**144.2**	**32.0**
Physical Contingency	60.3	2.2	30.3	17.2	8.9	1.7
Price Contingency	154.1	3.7	57.0	48.3	35.3	9.8
Fixed Investment Cost	1,162.8	61.8	542.0	327.1	188.4	43.5
ADB Subloan IDC	216.7	7.2	18.7	46.0	65.4	79.5
ADF IDC	5.2	0.1	0.5	1.1	1.6	1.9
Total Funding Required	**1,384.8**	**69.1**	**561.2**	**374.2**	**255.4**	**124.9**

Table 68: Project Costs by Sector and Place (Nominal Prices Including Taxes)

Description	Rp Billion			US$ Million			Total %	Total %
	FE	Local	Total	FE	Local	Total		Excl IDC
Water Supply								
Serang	4.5	116.3	120.8	0.4	10.9	11.4	8.8%	10.5%
Bandung	9.4	230.9	240.3	0.9	21.6	22.5	17.5%	20.7%
Barru	1.4	32.5	33.9	0.1	3.1	3.2	2.5%	2.9%
Bogor	7.8	222.0	229.8	0.7	20.7	21.4	16.7%	19.7%
Maros	2.8	65.1	68.0	0.3	6.1	6.3	4.9%	5.8%
Jeneponto	1.7	40.3	42.0	0.2	3.8	3.9	3.1%	3.6%
Palopo	3.7	92.8	96.6	0.3	8.6	9.0	7.0%	8.3%
Tapteng	1.6	42.6	44.2	0.2	4.0	4.1	3.2%	3.8%
Subtotal - WS	**32.9**	**842.6**	**875.5**	**3.1**	**78.8**	**81.9**	**63.6%**	**75.4%**
Sanitation								
Serang IPLT	0.2	18.2	18.3	0.0	1.7	1.7	1.3%	1.6%
CSC Sanitation, Pilot	0.1	18.4	18.5	0.0	1.7	1.7	1.3%	1.6%
SSS Sanitation, Pilot	0.4	17.6	18.0	0.0	1.6	1.7	1.3%	1.5%
School Sanitation, Pilot	0.0	5.0	5.0	0.0	0.5	0.5	0.4%	0.4%
Health & Hygiene	0.0	11.7	11.7	0.0	1.1	1.1	0.9%	
Subtotal - Sanitation	**0.7**	**70.8**	**71.5**	**0.1**	**6.6**	**6.7**	**5.2%**	**6.1%**
Technical Assistance								
Dev. Cons. (DBO/AMDAL)	1.2	2.1	3.3	0.1	0.2	0.3	0.2%	0.3%
Project Management	20.2	44.4	64.6	1.9	4.1	6.0	4.7%	5.5%
RG Support (SIKD)	3.9	7.2	11.2	0.4	0.7	1.1	0.8%	1.0%
RG Support (LIDAP)	5.2	63.2	68.4	0.5	5.9	6.3	4.9%	5.8%
PDAM Support (FOPIP)	5.2	63.2	68.4	0.5	5.9	6.3	4.9%	5.8%
Subtotal – TA	**35.7**	**180.0**	**215.8**	**3.3**	**16.7**	**20.1**	**15.6%**	**18.5%**
Subtotal	**69.4**	**1,093.4**	**1,162.8**	**6.5**	**102.1**	**108.6**	**84.4%**	**100.0%**
IDC Financing Costs	35.73	180.04	215.77					
Water Supply	101.9	90.8	192.7	9.2	8.2	17.4	13.5%	
Sanitation/Health	1.3	2.3	3.6	0.1	0.2	0.3	0.3%	
Technical Assistance	25.7	0.0	25.7	2.3	0.0	2.3	1.8%	
Subtotal, IDC	**128.9**	**93.0**	**222.0**	**11.7**	**8.4**	**20.0**	**15.6%**	
Total	**198.3**	**1,186.5**	**1,384.8**	**18.2**	**110.5**	**128.7**	**100.0%**	

3. PROJECT FINANCING

574. Project financing is given in the following tables. These follow ADB format and include IDC as an item to be financed. This is important, and beneficial to GOI, since the additional sub-loan IDC is correctly considered as counterpart funding. The equivalent GOI format considers only the financing of physical investment and has been followed in the SPARs.

Table 69: Project Financing Summary (Nominal Prices)

Source of Funds	Rp Billion			US$ Million			
	Foreign	Local	Total	Foreign	Local	Total	Percent
A. ADB							
1. ADB Loan	862	0	862	80.2	0.0	80.2	62.3%
2. ADF Loan	108	0	108	10.0	0.0	10.0	7.8%
ADB Total	**970**	**0**	**970**	**90.2**	**0.0**	**90.2**	**70.1%**
B. Counterpart Funds							
1. Central Government	9	93	102	0.9	8.4	9.2	7.2%
2. Local Government	0	52	52	0.0	5.0	5.0	3.9%
3. Consumers	0	140	140	0.0	12.7	12.7	9.9%
4. Operating Agency	0	120	120	0.0	11.5	11.5	8.9%
Counterpart Total	**9**	**405**	**414**	**0.9**	**37.6**	**38.4**	**29.9%**
Total	**979**	**405**	**1,384**	**91.1**	**37.6**	**128.6**	**100.0%**

Table 70: Project Financing by Sector and Source (Nominal Prices)

Description	Total	%	ADB Loan		Counterpart				Total	
			OCR	ADF	Central budget On Granted ADB Loan	budget GOI	RG	Cons-umers	ADB loan	GOI
Rp Billion										
Water Supply	1,068.2	77.1%	674.5	0.0	0.0	90.8	46.4	258.2	674.5	395.4
Sanitation/Health	75.1	5.4%	0.0	12.9	50.2	2.3	5.9	1.8	63.1	9.9
Technical Assistance	241.4	17.4%	0.0	0.0	232.4	9.0	0.0	0.0	232.4	9.0
Total	1,384.8	100.0%	674.5	12.9	282.6	102.0	52.3	260.0	970.0	414.3
Percent	100.0%		48.7%	0.9%	20.4%	7.4%	3.8%	18.8%	70.0%	29.9%
US$ Million										
Water Supply	99.3	77.2%	62.8	0.0	0.0	8.2	4.4	24.1	62.8	36.7
Sanitation/Health	7.0	5.4%	0.0	1.2	4.7	0.2	0.6	0.2	5.9	0.9
Technical Assistance	22.4	17.4%	0.0	0.0	21.5	0.9	0.0	0.0	21.5	0.9
Total	128.7	100.0%	62.8	1.2	26.2	9.2	5.0	24.2	90.2	38.4
Percent	100.0%		48.8%	0.9%	20.3%	7.2%	3.9%	18.8%	70.1%	29.9%

Table 71: Project Financing Details (Nominal Prices)

Description	Foreign	Local	Total	Foreign	Local	Total	%
ADB Loan On-lent to RG - WS	573.0	0.0	573.0	53.6	0.0	53.6	41.7%
ADF Loan On-lent to RG - San.	12.5	0.0	12.5	1.2	0.0	1.2	0.9%
ADF Loan On-grant to RG – San	49.2	0.0	49.2	4.6	0.0	4.6	3.6%
ADB Loan On-grant to RG – CB	163.4	0.0	163.4	15.2	0.0	15.2	11.8%
ADF Loan On-grant to RG – CB	43.4	0.0	43.4	4.0	0.0	4.0	3.1%
ADB IDC – WS	101.5	0.0	101.5	9.2	0.0	9.2	7.1%
ADB IDC – CB	24.5	0.0	24.5	2.2	0.0	2.2	1.7%
ADF IDC – San, On-lent	0.4	0.0	0.4	0.0	0.0	0.0	0.0%
ADF IDC – San, On-grant	0.9	0.0	0.9	0.1	0.0	0.1	0.1%
ADF IDC – CB	1.2	0.0	1.2	0.1	0.0	0.1	0.1%
Additional Sub Loan IDC – WS	0.0	90.8	90.8	0.0	8.2	8.2	6.3%
Additional Sub Loan IDC – San	0.0	2.3	2.3	0.0	0.2	0.2	0.2%
ADB Grant	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Bilateral Grant – FOPIP	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Pusat Grant – SIKD	9.0	0.0	9.0	0.9	0.0	0.9	0.7%
Provincial Grant	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
RG Equity, Land – WS	0.0	21.6	21.6	0.0	2.0	2.0	1.6%
RG Equity, Land - San	0.0	0.5	0.5	0.0	0.0	0.0	0.0%
RG Equity, Other – WS	0.0	24.8	24.8	0.0	2.4	2.4	1.9%
RG Equity, Other – San	0.0	5.4	5.4	0.0	0.5	0.5	0.4%
Consumers – WS	0.0	137.9	137.9	0.0	12.5	12.5	9.8%
Consumers – San	0.0	1.8	1.8	0.0	0.2	0.2	0.1%
Operating Agency	0.0	120.3	120.3	0.0	11.5	11.5	8.9%
Total	979.0	405.3	1,384.4	91.1	37.6	128.6	100.0%

Table 72: Project Funding Details by Source and Regional Government (Nominal Rp Million)

Description	Total	%	Bandung	Barru	Bogor	Maros	Jeneponto	Palopo	Serang	Tapteng
Water Supply										
Total Funding Required	1,067,786		294,675	42,265	278,435	81,870	51,390	116,115	149,130	53,907
ADB Loan Onlent to RG	573,029	53.7%	157,412	22,215	150,097	44,585	27,510	63,232	79,052	28,925
ADB IDC	101,487	9.5%	28,643	4,387	25,725	7,385	4,960	10,393	14,888	5,107
Additional Sub Loan IDC	90,790	8.5%	25,732	3,986	22,917	6,523	4,456	9,164	13,437	4,576
RG Equity, Land	21,318	2.0%	5,790	1,420	4,860	2,162	1,967	975	3,664	480
RG Equity, Other	24,804	2.3%	0	0	0	3,088	5,494	4,698	0	11,524
Consumers	136,079	12.7%	35,644	5,033	52,277	7,468	9,698	10,721	13,344	1,893
Operating Agency	120,280	11.3%	41,454	5,225	22,559	10,658	-2,695	16,932	24,746	1,401
Total WS Funding	**1,067,786**	**100.0%**	**294,675**	**42,265**	**278,435**	**81,870**	**51,390**	**116,115**	**149,130**	**53,907**
Sanitation/Health			**2**	**1**	**2**	**1**	**1**	**1**	**1**	**1**
Total Funding Required	71,688		9,227	5,369	9,227	5,369	5,369	5,369	26,388	5,369
ADF Loan Onlent to RG	12,490	17.4%	0	0	0	0	0	0	12,490	0
ADF Loan Ongrant to RG	45,833	63.9%	8,287	4,876	8,287	4,876	4,876	4,876	4,876	4,876
ADF IDC	1,668	2.3%	222	134	222	134	134	134	553	134
Additional Sub Loan IDC	2,258	3.2%	0	0	0	0	0	0	2,258	0
RG Equity, Land	273	0.4%	55	27	55	27	27	27	27	27
RG Equity, Other	5,853	8.2%	0	0	0	0	0	0	5,853	0
Consumers	3,314	4.6%	663	331	663	331	331	331	331	331
Total Sanitation Funding	**71,688**	**100.0%**	**9,227**	**5,369**	**9,227**	**5,369**	**5,369**	**5,369**	**26,388**	**5,369**

Table 73: Project Funding Details by Source and Regional Government (Nominal Rp Million) - Continued

Description			Bandung	Barru	Bogor	Maros	Jeneponto	Palopo	Serang	Tapteng
Institutional Support and Capacity Building										
Total Funding Required	216,455		34,049	22,762	36,249	23,259	22,762	23,259	31,352	22,762
ADB Loan Ongrant to RG	146,361	67.7%	23,134	15,315	24,608	15,699	15,315	15,699	21,276	15,315
ADF Loan Ongrant to RG	38,836	18.0%	6,139	4,064	6,530	4,166	4,064	4,166	5,645	4,064
ADB IDC	21,218	10.1%	3,480	2,153	3,800	2,163	2,153	2,163	3,151	2,153
ADF IDC	1,042	0.5%	171	106	187	106	106	106	155	106
Bilateral Grant - FOPIP	0	0.0%	0	0	0	0	0	0	0	0
Pusat Grant - SIKD	8,999	3.7%	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125
RG Equity	0	0.0%	0	0	0	0	0	0	0	0
Total IS/CB Funding	**216,455**	**100.0%**	**34,049**	**22,762**	**36,249**	**23,259**	**22,762**	**23,259**	**31,352**	**22,762**
Total										
Total Funding Required	1,355,930		337,951	70,397	323,911	110,498	79,521	144,744	206,869	82,038
ADB Loan Onlent to RG	573,029	42.3%	157,412	22,215	150,087	44,585	27,510	63,232	79,052	28,925
ADF Loan Onlent to RG	12,490	0.9%	0	0	0	0	0	0	12,490	0
ADB Loan Ongrant to RG	146,361	10.8%	23,134	15,315	24,608	15,699	15,315	15,699	21,276	15,315
ADF Loan Ongrant to RG	84,669	6.2%	14,426	8,940	14,817	9,042	8,940	9,042	10,522	8,940
ADB IDC	122,705	9.0%	32,123	6,540	29,525	9,548	7,113	12,556	18,039	7,260
ADF IDC	2,710	0.2%	393	240	409	240	240	240	707	240
Additional Sub Loan IDC	93,048	6.9%	25,732	3,986	22,917	6,523	4,456	9,164	15,695	4,576
Bilateral Grant - FOPIP	0	0.0%	0	0	0	0	0	0	0	0
Pusat Grant - SIKD	8,999	0.7%	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125
RG Equity – Land	21,591	1.6%	5,844	1,447	4,914	2,189	1,995	1,002	3,692	507
RG Equity – Other	30,656	2.3%	0	0	0	3,088	5,494	4,698	5,853	11,524
Consumers	139,393	10.3%	36,307	5,365	52,939	7,800	10,030	11,052	13,675	2,225
Operating Agency	120,280	8.9%	41,454	5,225	22,559	10,658	-2,695	16,932	24,746	1,401
Total Funding	**1,355,930**	**100.0%**	**337,951**	**70,397**	**323,911**	**110,498**	**79,521**	**144,744**	**206,869**	**82,038**

C. REGIONAL GOVERNMENT FINANCE

1. RECENT FINANCIAL PERFORMANCE

575. Data on financial cash flows 2001 up to and including 2004 were collected for each regional government. Flows in nominal prices were presented in the SPARs. The discussion here concentrates on constant price flows since they are a better basis for forecasting.

576. The size and recent history of each RG evaluated is shown in the following table. Kabupaten Bandung is the largest RG, followed by Kota Bogor. Kabupaten Banjar the smallest. The fastest growing is Barru.

Table 74: Regional Government Expenditures Constant 2005 Rp Million

Location	2001	2002	2003	2004	Share	Growth	Share
Inflation Annual	13.5%	7.7%	6.3%	6.4%	%	% pa	MOF Arrears
Kab. Serang	436,894	442,022	570,383	564,121	10.1%	10.8%	0.0%
Kota Banjar				81,842	1.5%		0.0%
Kab. Bandung	1,138,336	1,033,847	1,102,843	1,203,778	21.6%	2.4%	0.2%
Kab. Barru	130,418	136,838	159,179	199,359	3.6%	20.7%	0.1%
Kab. Bogor	777,781	998,589	908,758	1,037,987	18.6%	8.0%	0.0%
Kab. Maros	170,459	183,888	230,715	221,626	4.0%	10.7%	1.2%
Kab. Jeneponto	176,812	177,196	212,983	183,117	3.3%	2.9%	0.0%
Kota Palopo			79,957	131,554	2.4%	64.5%	0.0%
Kab Pemalang	332,418	342,352	460,892	444,656	8.0%	12.4%	0.0%
Kota Semarang	549,098	560,834	715,219	693,214	12.4%	11.2%	3.9%
Kab. Sidrap		161,878	207,138	235,840	4.2%	20.7%	0.0%
Kab. Taput	283,915	292,839	333,916	204,347	3.7%	-8.2%	0.0%
Kab. Tapteng	154,912	171,209	218,982	217,491	3.9%	13.5%	0.1%
Average	415,104	409,227	433,414	416,841	7.7%	14.1%	0.9%
TOTAL	4,151,044	4,501,493	5,200,966	5,418,933	100.0%		

Note: The growth rate shown is the calculated least squares exponential rate.

577. As shown in the Table 75, seven of the RGs operated a deficit in 2004, compared to only two in 2001 and 2002. Internationally, local governments are not expected to be in deficit, although revenue earning projects may be funded by loans or bonds. The same principle applies in Indonesia and recent accounting and legislative changes, which put short term borrowing below the line, also specify that the local parliament should approve such financing.

Table 75: Regional Government Surplus/Deficits in Constant 2005 Rp Million and Ranking

Location	2001	2002	2003	2004	Ranking
Inflation Annual	13.5%	7.7%	6.3%	6.4%	
Kab. Serang	31,170	48,887	329	-684	Low
Kota Banjar				27,457	Medium
Kab. Bandung	119,431	-1,783	72,694	-7,420	Low
Kab. Barru	4,555	18,317	20,851	-18,221	Medium
Kab. Bogor	163,984	15,643	48,103	17,172	Low
Kab. Maros	-9,546	1,239	-30,565	-6,114	Low
Kab. Jeneponto	-34,301	15,848	-23,705	6,042	Low
Kota Palopo			1,633	-271	Medium
Kab Pemalang	34,076	28,116	1,888	-32,619	Low
Kota Semarang	47,676	75,340	50,820	79,270	High
Kab. Sidrap		18,977	21,774	-25,116	Medium
Kab. Taput	27,517	15,555	-15,720	10,091	Low
Kab. Tapteng	32,002	9,372	-23,186	12,293	Low
Average	41,656	19,475	10,355	4,010	
No. Deficit	2	2	5	7	

578. On average, the deficits were the result of a lower growth in revenues than expenditures, as shown in the following table. This does hide important differences between RGs but only one, Jeneponto, recorded a significantly higher growth in revenues than expenditures.

Table 76: Real Growth in Regional Government Accounts - 2001 to 2004

Location	Local Revenue	Shared Revenue	All Revenue	All Expenditure	o/w Employment	RG Own	Investment Others
Kab. Serang	2.7%	21.9%	7.3%	10.6%	7.4%	8.4%	115.6%
Kota Banjar							
Kab. Bandung	3.3%	23.7%	0.2%	2.4%	2.6%	28.2%	-71.0%
Kab. Barru	2.6%	14.8%	8.0%	20.7%	11.9%	29.7%	-3.4%
Kab. Bogor	8.7%	19.3%	3.2%	8.0%	11.0%	8.6%	23.3%
Kab. Maros	13.5%	18.1%	10.0%	10.7%	9.6%	-4.1%	175.9%
Kab. Jeneponto	-1.9%	16.0%	8.7%	2.9%	0.1%	7.1%	0.0%
Kota Palopo	31.2%	89.1%	60.9%	64.5%	49.4%	104.1%	334.0%
Kab Pemalang	2.4%	22.1%	5.9%	12.4%	7.0%	7.1%	97.0%
Kota Semarang	5.4%	27.2%	10.2%	11.2%	8.5%	33.5%	0.0%
Kab. Sidrap	11.9%	20.2%	7.9%	20.7%	15.3%	20.7%	44.0%
Kab. Taput	-8.7%	16.4%	-10.3%	-8.2%	-3.9%	-41.4%	50.3%
Kab. Tapteng	20.2%	14.6%	3.7%	13.5%	5.7%	13.5%	13.5%
Average	7.6%	25.3%	9.6%	14.1%	10.4%	10.4%	76.8%

579. **Local Government Revenues** are grouped into four main classifications: (a) local revenues (PADS); (b) shared revenues/taxes etc (Bagi Hasil); (c) funds (Dana); (d) loans (Pinjaman). The share of each of these varies considerably, as shown below.

Table 77: Share of Regional Government Revenues by Type, 2004

Description	PADS	Shared	Funds	Loans	Other
Kab. Serang	12.8%	16.5%	66.5%	0.0%	4.2%
Kota Banjar	4.3%	33.6%	45.8%	0.0%	16.3%
Kab. Bandung	9.6%	19.0%	66.5%	0.0%	4.9%
Kab. Barru	4.6%	10.5%	80.9%	0.0%	4.0%
Kab. Bogor	16.8%	20.9%	60.2%	0.0%	2.1%
Kab. Maros	7.7%	6.3%	86.0%	0.0%	0.0%
Kab. Jeneponto	2.9%	9.6%	87.4%	0.0%	0.1%
Kota Palopo	7.6%	13.7%	75.6%	0.0%	3.0%
Kab Pemalang	7.0%	9.9%	82.5%	0.0%	0.7%
Kota Semarang	21.5%	30.9%	44.0%	0.0%	3.6%
Kab. Sidrap	6.8%	13.5%	75.2%	0.0%	4.4%
Kab. Taput	3.8%	16.8%	73.9%	0.0%	5.5%
Kab. Tapteng	3.5%	13.1%	76.2%	0.0%	7.1%
Average	8.4%	16.5%	70.8%	0.0%	4.3%

580. PADs is the only source over which the local government has any direct control, but is both the smallest and the slowest growing. It includes local taxes and charges (retribusi) and profit from local government owned enterprises. Of these only the last grew at above average rates. The next smallest, but in this case the fastest growing, is shared revenues. These include national vehicle, land and income taxes and their high rate of growth is an indication that the potential of the region is not yet being realized in local government's own revenues.

581. The main fund is the general fund (DAU), which covers civil servant salaries (the basic allocation) plus an amount set in UU 33/04 according to regional *fiscal gap*. Fiscal gap equals fiscal need less fiscal capacity. Fiscal capacity is PAD + BH + DAU + Other – BA). This was used in 538/KMK.07/2003 to create a fiscal map which ranked RGs by fiscal capacity divided by the number of poor in the region. The ranking was used to divide regions into three groups, which was supposed to determine the share of on-lent loans which could be funded by grants. RGs with high fiscal capacity can receive 30% of the value of a non-revenue earning project as grant; medium 60% and low 90%. The ranking of each of the evaluated RGs is given in Table 75. There is doubt, however, that the classification has been used for any local government transfers, since no funding mechanisms have been put in place.

582. **Regional Government Expenditures** are divided into two main groups: (a) central administration and politics (Aparatur/DPRD); and (b) other (Publik). Salaries make up 54% of the combined total on average but the share varies from 41% to 66%. Both goods & services and maintenance are smaller shares of the total but have been growing much faster. Investment growth, both for the RG and for other government levels within the RG, has been significant.

Table 78: Share of Regional Government Expenditures by Type, 2004

Description	Central	Other	Salaries	Goods & Services	Maint-enance	Investment RG Own	Others
Kab. Serang	25.2%	74.8%	54.1%	12.6%	4.4%	24.3%	5.1%
Kota Banjar	28.8%	71.2%	65.0%	12.5%	3.1%	9.6%	7.5%
Kab. Bandung	19.9%	80.1%	60.6%	8.8%	6.3%	18.8%	6.2%
Kab. Barru	20.7%	79.3%	44.3%	6.2%	0.9%	36.5%	3.1%
Kab. Bogor	56.4%	43.6%	46.5%	9.1%	5.9%	22.5%	13.5%
Kab. Maros	71.2%	28.8%	53.7%	10.9%	2.5%	20.0%	4.8%
Kab. Jeneponto	37.5%	62.5%	59.3%	6.7%	2.0%	25.7%	3.4%
Kota Palopo	42.8%	57.2%	57.4%	11.6%	2.5%	18.4%	3.8%
Kab Pemalang	15.5%	84.5%	57.1%	15.6%	3.6%	25.8%	1.3%
Kota Semarang	27.0%	73.0%	58.9%	3.6%	12.3%	10.5%	0.0%
Kab. Sidrap	61.0%	39.0%	53.9%	6.6%	6.1%	20.6%	8.0%
Kab. Taput	26.9%	73.1%	66.1%	11.0%	8.4%	30.0%	1.9%
Kab. Tapteng	18.7%	81.3%	42.4%	14.1%	2.3%	36.6%	4.6%
Average	34.7%	65.3%	55.3%	10.0%	4.6%	23.2%	5.0%

D. OUTSTANDING DEBT

583. None of the regional governments have outstanding debt large enough to require rescheduling. Data as at end 2003 is the latest available is shown in Table 19, where it is compared to borrowing capacity and expected WSSP requirements.

E. REGIONAL GOVERNMENT BORROWING CAPACITY

1. NEED TO ESTIMATE PEMDA (RG) BORROWING CAPACITY

584. The first reason to estimate the borrowing capacity of a local government is to show the ability of that government to use loans to finance investments in non-revenue generating projects, eg sanitation. The second reason is to estimate the ability of the RG to take out loans to be used by one if its revenue earning agencies, eg a PDAM. The latter is not entirely logical since the ability of a PDAM to borrow would normally be calculated from its own future revenues. This was stated by a MOF representative at a WSSP workshop. Other MOF personnel, however, are adamant that a PDAM's ability to borrow should be calculated from the borrowing capacity of its regional government. Note that a RG may not simply guarantee a loan to its PDAM since such guarantees are forbidden by law (Article 55/1 of UU 33/04). In addition, recourse to the local government for non-payment of revenue generating loans would be through the Intercept (Potong), a deduction from the DAU, or General Allocation Fund. This is only a part of the items used to calculate borrowing capacity. The Intercept is allowed by law; it has been threatened but never yet applied.

2. LEGISLATED BORROWING RESTRICTIONS

585. UU 33/04 (and KMK 35) contains two restrictions on regional government borrowing. These might seem unusual to those used to dealing with commercial undertakings but are reasonably suited to local government. The restrictions are: (a) borrowing limited to 75% of revenues (Article 54a): (b) minimum debt service coverage ratio (DSCR) of 2.5 (Article 54b; the DSCR of 2.5 is given in KMK 35 Article 5d but not UU 33 and consideration has been given to raising it). These both require explanation.

586. Borrowing for a revenue earning operation such as a PDAM is normally limited to some share of net assets, not revenues. RG asset values are often not available, however, since they are not required under Kepmen 29/02 until 2006. In their absence, the use of revenues as a limit is rational. The restriction to 75% of revenues is more restricting than the 70% of net assets often used for a revenue earning operation.

587. Similarly, the 2.5 requirement for the DSCR might seem to be unduly high. This is not so because the legislated RG calculation excludes allowance for some 50% of the RG's

costs. A normal DSCR deducts all costs from revenues to estimate the remainder available for debt service. The DSCR legislated for regional governments in UU 33 deducts only staff (and DPRD) salary costs and so does not provide any indication of the amount which will actually be available for debt service. At first sight this might seem to be an anomaly. It is not, and the reason demonstrates the major difference between a regional government and a revenue earning operation such as a PDAM. Essentially, this is that government does not have the option of bankruptcy and must always have revenues which more or less cover costs.

3. APBD BUDGET FORECASTS

588. Forecasting the RGs borrowing capacity requires forecasts for RG revenues and salaries. These have has been made by extrapolating past constant price growth of those items and using other costs as a balancing item. Past inflation rates are derived from BPS constant and current price GDP estimates, apart from 2004 which was the BPS retail rate. In certain RGs, recent growth in shared revenues has been too high to use as a basis for forecasting and a maximum of 30% pa has been assumed. In certain particular cases historic DAU growth has also been more than can be expected in the future and a maximum of 5% pa has been assumed. Similarly, the special DAK fund has in general been assumed to remain at its 2004 level in real terms. In the absence of other information, investment has been assumed to be the average of historical investment. The resulting growth rates are shown in Table 79.

Table 79: Forecasts Real Growth in RG Budget (APBD) in Real Terms, 2004 to 2010

Location	Revenues	Expenditure
Kab. Serang	7.5%	7.5%
Kota Banjar	6.6%	6.6%
Kab. Bandung	7.1%	7.0%
Kab. Barru	6.5%	6.5%
Kab. Bogor	9.4%	11.6%
Kab. Maros	7.2%	6.6%
Kab. Jeneponto	6.9%	6.3%
Kota Palopo	12.2%	12.2%
Kab Pemalang	5.1%	4.6%
Kota Semarang	14.7%	14.4%
Kab. Sidrap	9.0%	8.3%
Kab. Taput	10.8%	10.3%
Kab. Tapleng	5.3%	7.2%
Average	8.3%	8.4%

4. BORROWING CAPACITY

589. The borrowing capacity calculations, to give estimates based on both of the legislated limits, are detailed in the following tables for the average of the 14 RGs evaluated. The DSCR rule obviously depends on the terms of the loan. Debt service payments for any loan limited by the 75% rule will likewise depend on the terms of the loan. The terms assumed for two types of loan are shown in the tables. The loan period and the calculation given are for the years after any grace period.

Table 80: Borrowing Capacity with 75% Rule (Rp Million)

Description	2005	2006	2007	2008	2009	2010
Constant 2005 Prices						
Previous Year Revenue	366,190	413,790	473,927	539,262	619,403	718,841
Less DAK	-6,280	-6,682	-7,156	-7,550	-7,965	-8,403
Less Emergency Fund	0	0	0	0	0	0
Less Loans	0	0	0	0	0	0
Less Deconcentration Fund	232	0	0	0	0	0
Less Reforestation Fund	0	0	0	0	0	0
Total	360,142	407,108	466,771	531,713	611,438	710,438
Allowed (75% of Total above)	270,106	305,331	350,078	398,784	458,578	532,828
Nominal Prices						
Allowed (75%)	270,106	327,010	395,555	475,371	576,714	706,946
Less Actual Debt						
Allowed New Debt	270,106	327,010	395,555	475,371	576,714	706,946
Calculated Debt Payment						
- SLA Loan (9%, 20 years)	29,589	35,823	43,332	52,075	63,177	77,443
- Other Loan (12%, 11 years)	45,490	55,073	66,618	80,060	97,127	119,061

Table 81: Borrowing Capacity with DSCR Rule (Rp Million)

Description	2005	2006	2007	2008	2009	2010
Revenue Included						
PAD	49,915	53,980	58,519	63,602	69,309	75,738
DAU	261,084	266,254	271,671	277,348	283,298	289,533
DBH, PBB	25,283	28,860	33,067	38,040	43,950	51,009
DBH, BPHTB	10,837	13,182	16,162	19,953	24,783	30,944
DBH, PPh	7,831	8,727	9,918	11,482	13,527	16,198
DBH	4,723	5,244	5,906	6,744	7,815	9,196
DBHDR	0	0	0	0	0	0
Total Included	359,674	376,247	395,243	417,170	442,683	472,617
Obligatory Expenditure						
Apparatus Personnel (incl DPRD)	94,673	102,625	111,634	121,820	133,320	146,286
Other Personnel	129,678	137,642	146,370	155,944	166,456	178,008
Debt Service						
Available	223,967	232,037	241,718	253,432	267,738	285,361
Allowed with 2.5 DSCR						
- Constant 2005 Prices	89,587	92,815	96,687	101,373	107,095	114,145
- Nominal Prices	89,587	99,405	109,248	120,842	134,684	151,445
Loan Allowed (Nominal Prices)						
- SLA Loan (9%, 20 years)	817,796	907,421	997,271	1,103,108	1,229,470	1,382,471
- Other Loan (12%, 11 years)	531,939	590,236	648,679	717,521	799,714	899,234

590. The borrowing capacity results for 2005 and 2011 for the average RG are summarized in Table 82. As can be seen, the 2.5 DSCR rule is less restricting than the 75% rule, which might explain why consideration is being given to increasing the requirement. In fact, the 2.5 DSCR would have to be 4.5 in order to give the same borrowing capacity as the 75% requirement. There is less difference in the loan allowed with the two rules in 2011, however. This is the result of the exclusion of one of the fastest growing revenue sources, other shared revenues or DHH from the DSCR calculation.

Table 82: Summary of Average RG Borrowing Capacity (Nominal Rp Billion)

Description	2005 Loan	2005 Debt Payment	2011 Loan	2011 Debt Payment
75% Rule	270		876	
- SLA Loan (9%, 20 years)		30		96
- Other Loan (12%, 11 years)		45		148
2.5 DSCR Rule				
- SLA Loan (9%, 20 years)	818	248	1220	580
- Other Loan (12%, 11 years)	532	248	794	446

591. Forecasts for borrowing capacity for each of the studied RGs are shown in Table 83, where they are compared to WSSP planned loans. For water supply these are shown with and without interest during construction (IDC). The loan including IDC is the amount which would be owed in 2011. It is rarely more than 10% of the RG's borrowing capacity in that year.

Table 83: Forecasts Borrowing Capacity and WSSP Loans by RG (Nominal Rp Billion)

Location	Existing Debt		Borrowing Capacity				WSSP Planned Loans		On Grant		
	Arrears	Total	75%	75%	DSCR	DSCR	PDAM	PDAM	San-itation	San-itation	Cap. B'ldg
	End 2003	End 2003	2005	2011	2005	2011	Ex IDC	Inc IDC	Ex IDC	Ex IDC	Ex IDC
Kab. Serang	0	0	393	1191	711	979	84	122	12	5	20
Kota Banjar	NA	NA	65	192	130	264	31	44	0	5	18
Kab. Bandung	14	32	854	2452	1855	2516	159	225	0	8	23
Kab. Barru	–	2	118	346	395	801	23	33	0	5	18
Kab. Bogor	1	22	740	2440	3575	2143	186	272	0	8	25
Kab. Maros	2	8	143	436	787	1721	65	94	0	5	18
Kab. Jeneponto			127	374	439	1122	28	39	0	5	18
Kota Palopo	–	–	88	338	295	844	63	91	0	5	18
Kab. Pemalang	0	1	285	791	691	1197	63	86	0	5	18
Kota Semarang	92	256	541	2352	1131	2102	155	217	0	8	25
Kab. Sidrap			148	488	714	1395	54	77	0	5	18
Kab. Taput	–	–	144	526	343	1319	38	55	0	5	18
Kab. Tapteng	0	0	135	342	380	681	29	42	0	5	18
Average			291	944	881	1314	75	107	1	6	19
Total			3781	12269	11449	17086	979	1396	12	74	252

5. MUNICIPAL CREDITWORTHINESS IMPROVEMENT PROGRAMS

592. Municipal creditworthiness will depend upon both institutional and financial factors. This section deals only with financial.

593. MCIP requires working on the ground with RGs, enhancing their revenues and lowering their costs. There are two major limitations, however. First the revenues over which the RG has direct control, PADS, are only a small part of total revenues, 8.4% of the total as shown in Table 77 above. Shared revenues such as land and building tax (PBB) will be enhanced by local growth but their collection is a national responsibility. Similarly, although all expenditures are theoretically controllable by the RG, and will be in order to balance the budget, the question of where control is to be applied must be affected by the fact that central government pays all employee salaries through the DAU fund.

594. This does not mean that MCIPs cannot have use. Revenues could always be increased and costs could be lowered, while still providing a reasonable local government

service and increasing operational efficiency. Local governments know this and consultants funded by MDBs can and have assisted (the ADB funded a TA in two RGs in the Medan area in 1998 which provided detailed advice on each local revenue source). This must, however, be done at least close to the ground and is difficult to do as part of a project definition PPTA.

F. PDAM RECENT FINANCIAL PERFORMANCE

595. The individual SPARs contain a detailed summary of the financial state of each PDAM 2002 through 2004. Historical data are provided with financial forecasts in Appendix E. These details are of interest mainly to the accountant, however, and, in a period of light investment when asset data are not particularly reliable, PDAM financial performance can best be evaluated by comparison of the average tariff and operating costs per m3 sold in constant prices. These are shown for all the PDAMs evaluated in the table below. Operating costs include all administration costs. Tariffs do not include any royalties[11]. They also do not include connection fees since the PDAM accounting system can put connection fees to operations but connection costs to investment.

Table 84: PDAM Tariffs and Operating Costs - 2002 to 2004 in 2005 Rp/M3

Location	Average Tariff				Operating Costs				Tariff/
	2002	2003	2004	% Avg.	2002	2003	2004	% Avg.	O&M '04
Kab. Serang	1,126	1,315	1,244	78.1%	1,127	1,453	1,163	86.5%	106.9%
Kota Banjar	2,437	2,263	1,929	121.1%	0	2,263	1,676	134.8%	115.1%
Kab. Bandung	1,720	1,953	2,337	146.7%	1,666	1,531	1,765	91.2%	132.4%
Kab. Bantu	1,911	2,464	1,488	93.4%	2,162	2,700	1,557	160.8%	95.6%
Kab. Bogor	1,586	1,790	1,724	108.2%	1,318	1,559	1,511	92.9%	114.1%
Kab. Maros	1,581	1,559	1,847	115.9%	1,872	1,845	1,986	109.9%	93.0%
Kab. Jeneponto	1,865	2,357	2,898	181.9%	1,977	2,589	3,121	154.2%	92.9%
Kota Palopo	1,510	1,505	1,644	103.2%	1,243	1,333	1,240	79.4%	132.5%
Kab Pemalang	730	972	1,320	82.8%	595	618	862	36.8%	153.1%
Kota Semarang	1,411	2,320	2,454	154.0%	1,378	1,964	2,052	117.0%	119.6%
Kab. Sidrap	893	948	831	52.2%	895	1,409	1,112	83.9%	74.8%
Kab. Taput	713	605	556	34.9%	530	943	648	56.2%	86.0%
Kab. Tapteng	342	381	341	21.4%	312	308	246	18.4%	138.5%
Average	1371	1572	1586	100.0%	1256	1578	1457	100.0%	108.8%

596. The data shows that tariffs just cover O&M on average but that the ratio varies considerably by year and PDAM. Some PDAMs have increased tariffs, particularly Bandung, Maros, Jeneponto, Pemalang and Semarang. Even after the increases, however, Maros and Jeneponto still have tariffs below O&M.

597. Costs are low at Pemalang, Sidrap, Taput and Tapteng since their systems are gravitational.

598. There always was a problem with the central government grant funding investments and neglecting to inform the PDAM of details, such as the cost, of the investment. The situation would appear to have deteriorated further, so that there is now very little obvious recording of investments. Much of the data[12] shown in Table 85 was not available in the accounts but had to be derived from the balance sheet. It does imply inconsistencies, inconsistencies which could probably be lessened but not necessarily eliminated by additional time on-site.

[11] Only one project PDAM, Serang, receives royalties, which come from three private suppliers. One is a major nationalized steel company which has always provided its own water. The other two are commercial enterprises who provide water mainly to industry. The PDAM uses its exclusive rights in law to provide water in the Kabupaten to negotiate the royalties, which have provided an extra 25% to tariff revenues.

[12] The data was collected by two of the best and most experienced Indonesian financial consultants, in the four days they were allowed per PDAM. During which time they were also collecting the data on RG accounts shown above.

Table 85: PDAM Investment and Funding Data - 2002 through 2004 (Rp Million)

Location	Cash	Invest-ments	Grants	Loans Rec'd	Loan Payments	Income Tax	Internal Cash	F'cast Cash	Actual Cash
	End 02	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04	02 – 04	End 04	End 04
Kab. Serang	1,465	-12,165	19,367	0	0	-1,768	9,964	16,862	2,025
Kota Banjar	0	0	0	0	0	0	434	434	136
Kab. Bandung	1,815	-21,134	401	12,104	-7,124	-397	28,884	13,747	1,734
Kab. Barru	16	-12,017	334	144	-518	0	285	-11,756	66
Kab. Bogor	8,666	-95,912	1,690	-3,368	-13,529	-3,644	67,286	-38,811	3,902
Kab. Maros	30	-10,760	0	1,207	-1,209	0	662	-10,069	63
Kab. Jeneponto	134	-3,040	2,037	1,232	-661	0	385	87	400
Kota Palopo	1,558	-3,393	769	-151	-3,286	0	4,743	242	1,810
Kab Pemalang	613	-3,869	0	201	-292	0	4,538	789	1,410
Kota Semarang	9,866	-21,279	0	55,485	-51,671	0	40,362	32,763	44,182
Kab. Sidrap	134	-16,455	140	26	-203	0	-236	-16,122	400
Kab. Taput	196	0	0	-13	0	0	-111	72	99
Kab. Tapteng	25	-2,569	140	0	0	0	586	-1,818	1
Average	1,886	-15584	1,852	5,113	6,038	-447	12,173	11,031	4,325

599. As can be seen several PDAMs have continued to receive Central Government grant funded investment. Available data implies that this ceased in 2004, apart from in Serang, where four grant funded projects were finalized in 2004. This might be simply because more consulting resources were available at Serang, however, to obtain the data hidden in the accounts.

600. The data shown include much from audited accounts, as shown in Table 86. The ADB might wish to take this into account when they are considering financial management capability. This is not to say, of course, that there are not individual PDAM financial managers who could solve the problems noted. Financial management requires systems more than inspired individuals, however.

Table 86: PDAM Audited Accounts Availability (and end 2004 Cash Balance in Rp Million)

Location	2002	2003	2004
Kab. Serang	Audited	Audited	
Kota Banjar	--	--	
Kab. Bandung	Audited	Audited	Audited
Kab. Barru	Audited		
Kab. Bogor	Audited	Audited	Audited
Kab. Maros	Audited		
Kab. Jeneponto	Audited		
Kota Palopo	Audited		
Kab Pemalang	Audited	Audited	Audited
Kota Pinang	Audited	Audited	
Kota Semarang	Audited	Audited	Audited
Kab. Sidrap	Audited		
Kab. Taput	Audited		
Kab. Tapteng	Audited		

601. Compared to the situation in the late 1990s and early 2000s, however, the data in the accounts on debt owed by the PDAMs is much better. As shown in Table 87 only PDAM Kabupaten Bandung has data on outstanding debt which differs significantly from the data held by MOF.

Table 87: PDAM Arrears and Outstanding Debt (Rp Million)

Location	Arrears MOF End 2003	Debt MOF End 2003	Debt PDAM End 2003	Debt PDAM End 2004	Arrears Agreed Latest	Date Reconciled
Kab. Serang	0	0	0	0	0	
Kota Banjar	0	0	0	0	0	
Kab. Bandung	21,272	32,132	19,113	27,069		
Kab. Barru	294	1,546	1,342	1,342	398	10/12/04
Kab. Bogor	2,371	22,350	20,352	19,260	0	
Kab. Maros	3,169	7,968	9,915	8,447	4,076	6/5/05
Kab. Jeneponto	214	1,904	1,748	2,053	831	5/7/04
Kota Palopo	0	5,822	5,822	5,761	6024	22/5/05
Kab.Pemalang	14	765	804	716	0	
Kota Semarang	130,513	256,961	258,348	270,311		
Kab. Sidrap	272	1,037	873	850	478	25/9/04
Kab. Taput	62	314	155	126	0	
Kab. Tapteng	0	0	0	0	0	
Average	12,166	25,446	24,498	25,841		

602. Following discussions with the PDAMs, particularly those negotiating with MOF regarding rescheduling of arrears, the following future debt payments have been estimated and assumed.

Table 88: PDAM Outstanding Debt Payments (Rp Million)

Location	2005	2006	2007	2008	2009	2010	2011	Final
REPAYMENTS								
Kab. Bandung	2051	2410	2410	2410	2410	2410	1436	2018
Kab. Barru	0	47	48	221	221	221	207	2017
Kab. Bogor	1832	1832	1832	1832	1832	1832	1199	2018
Kab. Maros	84	332	1178	1172	1158	1714	1592	2018
Kab. Jeneponto	147	147	147	147	147	147	147	2018
Kota Palopo	325	776	901	901	2289	2289	2289	2015
Kota Semarang	6872	4263	4263	6492	25150	24863	24577	2014
Kab. Sidrap	821	448	448	375	373	0	0	2009
Kab. Taput	18	18	18	18	18	18	18	2011
INTEREST								
Kab. Bandung	2414	2356	2094	1837	1570	1309	1069	
Kab. Barru	156	156	156	153	137	121	106	
Kab. Bogor	1826	1642	1458	1274	1090	906	722	
Kab. Maros	495	802	782	704	631	560	495	
Kab. Jeneponto	198	184	170	157	142	128	115	
Kota Palopo	1133	583	524	460	388	313	232	
Kota Semarang	14242	18174	17763	17341	16062	13203	10383	
Kab. Sidrap	99	70	49	21	0	0	0	
Kab. Taput	15	13	11	9	7	4	2	

603. Finally, Table 89 shows four major indicators using data from the audited 2003 accounts and the PDAM's own end 2004 financial data.

Table 89: PDAM Financial Indicators, audited 2003 and PDAM 2004

Location	Debt/(Debt + Equity)		Assets/Debt		Assets/Water Sales		DSCR	
	2003	2004	2003	2004	2003	2004	2003	2004
Kab. Serang	0%	0%	0%	0%	2.1	2.2	na	na
Kota Banjar	0%	0%	0%	0%	2.5	1.4	na	na
Kab. Bandung	47%	51%	53%	52%	2.1	2.3	2.0	6.4
Kab. Barru	13%	11%	14%	12%	7.3	9.9	0.0	0.5
Kab. Bogor	12%	14%	16%	15%	2.4	2.4	5.9	5.5
Kab. Maros	64%	57%	71%	62%	4.7	4.3	1.5	na
Kab. Jeneponto	59%	55%	66%	58%	1.6	1.9	1.2	0.3
Kota Palopo	86%	79%	77%	68%	1.4	1.5	1.2	1.8
Kab Pemalang	6%	7%	9%	8%	1.9	2.0	24.3	24.1
Kota Semarang	102%	96%	131%	127%	2.8	3.1	0.7	1.3
Kab. Sidrap	5%	5%	5%	5%	11.7	14.6	2.9	1.2
Kab. Taput	5%	5%	9%	9%	1.4	1.4	na	na
Kab. Tapteng	0%	0%	0%	0%	16.4	14.4	na	na
Average	31%	29%	35%	32%	4.5	4.7	4.2	31%

G. PDAM FINANCIAL FORECASTS

604. PDAM sub-projects can be implemented successfully only if the finances of the whole PDAM are sound. For this reason the ADB requires an evaluation of all PDAM finances. The immediate history and present situation are discussed above. This section starts with an analysis of the PDAM coverage, in order to put its finances into context. It then deals with the various alternatives for tariff setting and the expected sub-loan terms.

1. SYSTEM AND COVERAGE ANALYSIS

605. Average proportion of the RG population which receives piped water is shown in Table 90. This coverage indicator is an estimate based on an assumed number of persons per connection and per public tap. The numbers assumed are 5 per ordinary connection, 7 per poor connection were there is normally more sharing and 100 per public tap.

606. Kabupaten PDAMs have to provide a service in a very wide normally rural area where the low density population has always had to provide its own water. They normally operate several systems but the selection of these systems is often more on political or supply considerations than demand. In general, these systems are in the Kabupaten capital and, where possible, the district capitals (IKK). The number of systems operated by each of the PDAMs is shown in the table.

607. Although physical features might add or subtract from this norm, coverage of Kabupaten populations is in general low[13]. Kota PDAMs on the other hand essentially serve a single urban area. Under these circumstances, it is more difficult to understand why they do not provide a piped water service over the whole area. They might find that coverage within that area is limited by demand for connections, but sales must be lowered by the fact that consumers cannot connect even if they wish to.

608. The table also shows the proportion of the RG population which is in the PDAM service area (SA) and the coverage within that service area. It must be noted that PDAMs vary in their ability to estimate their service area population. There are several reasons for this, some political, others personal, but it will only be when PDAMs consider all three indicators and plan accordingly, that they be able to provide a proper service to their electorate. One reason for this that they indicate very different things. Essentially, if done correctly, the SA population as a share of RG population shows how many people *could* receive piped water; the SA coverage shows how many who could actually want and/or are willing to pay for that water.

[13] Only Gianyar in Bali is known to have a Kabupaten system which provides service to its entire area.

Table 90: PDAM Coverage Data, 2004

Location	Regional Government	Service Area (SA)	Service Area	Number Kecamatan	Number of WS Systems	
	Coverage	Population As % RG	Coverage	Districts	Operational	Defunct
Kab. Serang	7.4%	23.8%	31.0%	32	17	8
Kota Banjar	17.7%	52.7%	33.7%	4	3	0
Kab. Bandung	6.6%	52.1%	12.7%	45	8	0
Kab. Barru	11.1%	48.1%	23.1%	7	6	1
Kab. Bogor	14.1%	58.3%	24.1%	35	12	0
Kab. Maros	12.7%	64.5%	19.7%	14	1	0
Kab. Jeneponto	10.1%	36.8%	27.4%	9	1	0
Kota Palopo	54.5%	100.0%	54.5%	4	3	0
Kab Pemalang	7.3%	25.2%	29.0%	2	1	0
Kota Semarang	44.9%	63.8%	70.4%	3	2	1
Kab. Sidrap	7.8%	58.2%	13.3%	11	4	0
Kab. Taput	9.2%	37.0%	24.8%	15	7	0
Kab. Tapteng	3.4%	28.5%	12.1%	11	8	0
Average	15.9%	49.9%	28.9%			

2. INCOMES AND CONSUMPTION

609. Table 91 shows household income data given by the project survey and uses this to forecast future consumption from existing domestic consumption in liters per capita per day (lpcd). The average connected household now has incomes 150% higher than non-connected. This is supported by Susenas data which do not disaggregate between urban and rural households. As shown in the table, it must imply that per capita demand will decrease as new lower income households connect. This analysis uses an income elasticity of 0.60, found for both Surabaya and Jakarta and consistent with international data. It does not show the effect of future tariff increases.

Table 91: Household Expenditure and Income Based Water Consumption

Location	Household Expenditure (Rp000/Mnth)			Household Consumption (lpcd)		
	House Connection	Not Connected	NC/HC	Existing 2004	New Conn Forecast	All SA Forecast
Kab. Serang	1837	1047	57%	121	87	97
Kota Banjar	1429	813	57%	70	50	56
Kab. Bandung	1175	704	60%	96	70	74
Kab. Barru	935	615	66%	98	76	81
Kab. Bogor	2986	2262	76%	153	129	135
Kab. Maros	894	682	76%	106	90	93
Kab. Jeneponto	737	500	68%	62	50	53
Kota Palopo	774	571	74%	163	136	151
Kab Pemalang	1117	1045	94%	113	109	110
Kota Semarang	2241	727	32%	132	67	113
Kab. Sidrap	1636	623	38%	107	60	66
Kab. Taput	1154	798	69%	132	106	112
Kab. Tapteng	1303	1089	84%	181	163	165
Average	1401	883	65%	116	90	99

3. PRICE ELASTICITIES, CAPACITY CHANGES AND ALTERNATIVES

610. One continuing problem is that there are two alternative explanations for low values for SA coverage and consumption, and there is always considerable disagreement between engineers and economists about the relative importance of each. Essentially, the economist says that there is low demand and the engineers that there is low supply.

611. As an input to the debate, Table 92 shows price elasticities calculated for each PDAM and based on their tariffs and sales between 2001 and 2004. Different start and finish years are used as necessary to better reflect the effects of specific tariff increases. These elasticities include the effects of inflation in lowering the impact of the tariff increase and of income growth[14] which would itself be expected to increase consumption. Since they are based on the average tariff for the group, they do not include the effects of movement between consumption blocks. Overall, however, while there are the usual anomalies, overall averages are pretty well exactly what the economist would expect.

612. The table also shows capacity and sales increases since 2001. If it was capacity which was holding back consumption, it would be expected that there would be direct correlation between the two increases. This is not so.

Table 92: PDAM Price Elasticities and Capacity Change Effects

Location	Household tariff		Price Elasticity			Capacity	Sales
	Real Increase	2004				Increase	Increase
	2001-2004	Rp/M3	Households	Other	Total	2001 – 2004	
Kab. Serang	22%	1,161	-0.53	-0.24	-0.24	20%	-4%
Kota Banjar		1,756					
Kab. Bandung	25%	2,345	-0.15	-0.02	-0.15	-7%	29%
Kab. Barru	-18%	1,352	-0.27	-0.06	-0.29	0%	99%
Kab. Bogor	11%	1,642	-0.27			32%	13%
Kab. Maros	40%	1,558	-0.24	-0.33	-0.25	125%	62%
Kab. Jeneponto	45%	2,514	-0.16		-0.16	0%	6%
Kota Palopo	11%	1,414	0.01	-0.28	-0.28	0%	24%
Kab Pemalang	74%	1,130	-0.11	-0.47	-0.15	50%	29%
Kota Semarang	98%	2,029	-0.15	-0.32	-0.18	-11%	0%
Kab. Sidrap	9%	780				0%	121%
Kab. Taput	13%	511	-0.55		-0.74	0%	8%
Kab. Tapteng	9%	318				0%	5%
Average	24%	1416	-0.24	-0.24	-0.27	15%	30%

613. The PDAM coverage figures should also be compared to total water supplies in the kabupaten. Table 93 shows Susenas data for the proportions of the RG population that say that they have their own water supply (46%) and those who say that their water supply is clean (36%). It also shows the proportion who say that they have piped or pumped water (29%). Where these indicators are high the PDAM has competition and has a justification for relatively low coverage. Some 21% of the population still buy their drinking water. Competition with PDAM is obvious in rural areas. Even in towns, however, if people have access to their own shallow well it can often seem a better alternative than to connect to expensive PDAM water, often of no better quality. If poor they can decide to allocate their time to hand drawing the water; if rich they can add an electric pump. This is another reason why it is essential that the connection demand forecasts are backed by real demand surveys.

614. The situation with respect to sanitation is not as good as water, however. Only 49% of the RG population says that they have their own toilet and only 38% say that their toilet sink-well has at least a "goose neck", the Indonesian phrase for a small lined aperture to a pit. The situation does vary by location, of course, as indicated in the following table.

[14] 2% per capita income growth is assumed and an income elasticity of 0.60.

Table 93: Susenas Data on Water and Sanitation Supply

Location	% Own Water	% Clean Water	% Piped Water	% Buying Drinking Water	% Own Toilet	% Sewerage Septic Tank
Kab. Serang	54%	27%	22%	7%	40%	22%
Kota Banjar						
Kab. Bandung	59%	33%	32%	14%	63%	52%
Kab. Bantu	38%	42%	30%	31%	45%	40%
Kab. Bogor	58%	26%	28%	10%	51%	40%
Kab. Maros	28%	27%	11%	11%	40%	35%
Kab. Jeneponto	12%	20%	17%	18%	20%	15%
Kota Palopo						
Kab. Pemalang	63%	39%	26%	17%	43%	28%
Kota Semarang	60%	71%	62%	74%	80%	71%
Kab. Sidrap	60%	46%	54%	8%	69%	71%
Kab. Taput	43%	28%	19%	16%	55%	22%
Kab. Tapteng	36%	37%	22%	27%	31%	22%
Average	46%	36%	29%	21%	49%	38%

Source: Susenas 2003 – Banjar and Palopo not reported due to recently constituted RGs.

4. PDAM TARIFFS

ADB GUIDELINES

615. The ADB has issued two ERD technical notes on tariffs, No 9 "Setting User Charges for Public Services", and No 10 "Beyond Cost Recovery". Both notes recommend that the major roles of tariffs can be classified as: good governance, financial sustainability, distributive justice, economic efficiency and fair pricing. Note No. 10 argues further that a simple and common tariff can accommodate all five goals. In general, national water tariff guidelines as set by MOHA include at least implicit consideration of each of the goals and do not disagree with any of them. Different PDAMs apply the national tariff guidelines differently, however.

PRACTICE

616. Average tariffs by group at each analyzed PDAM in 2004 are shown in Table 94. Note that these are in nominal prices and so the average tariffs differ from those shown in Table 84.

Table 94: PDAM Tariffs by Group in 2004 (Nominal Rp/M3 Sold)

Location	Average	Other H'holds	Public Taps	Govt. & Comm-erce Services	Industry	All Non-Dom	"Poor" H'holds	SRVC
Kab. Serang	1169	1161	492	1203	1302	1465	1277	1093	447
Kota Banjar	1813	1756	1078	1881	2857	0	2022	1159	817
Kab. Bandung	2196	2345	1051	2158	4460	8117	1804	1045	476
Kab. Bantu	1399	1352	747	2134	3213	5132	2523		1,042
Kab. Bogor	1620	1642	410	1556	2556	3751	1703	1008	579
Kab. Maros	1736	1558	1650	1900	1503	8056	2606	1369	946
Kab. Jeneponto	2725	2514	2010	2774	2382	9933	3738		1,267
Kota Palopo	1545	1414	626	1914	2775	2920	2722		424
Kab Pemalang	1240	1130	417	2450	3156	0	2750	615	156
Kota Semarang	2306	2029	1250	3393	6223	13022	5001	853	1,217
Kab. Sidrap	782	780	0	861	740	0	789		868
Kab. Taput	522	511	256	408	778	1148	615	270	476
Kab. Tapteng	321	318	25	1282	0	0	1282		476
Average	1490	1424	770	1839	2662	5354	2218	926	668

Note: See below for definition of SRVC.

617. As can be seen, although there is a single national guidance for tariff setting, the application differs radically between PDAMs. This is most obvious with respect to two items, ie the extent to which they: (a) use a "poor" tariff block to subsidize minimum consumption; and (b) charge private non-domestic use excessive amounts in order to keep domestic tariffs down. The excessive charges to commerce and industry, in particular, create a high cost economy whose costs are passed on to the poor in a regressive manner.

THE POOR

618. Below cost tariffs to the poor are sometimes said to give a negative feedback to PDAMs and to affect their willingness to connect. For this reason it has been taken out of the draft revised MOHA legislation now being "socialized". However, the Rp 920/m3 which the poorest household group pays on average would more than cover short-run variable costs (power, chemicals, maintenance, retribution and bad debts @ 2005 Rp 711/m3). Taput would appear to be the only PDAM with a tariff to the poor below SRVC and therefore is the only PDAM observed where the tariff should give a disincentive to the PDAM to provide water to low income (RTSS) houses. This sort of analysis is rarely available at the PDAMs, however, and it does seem likely that the above mentioned negative feedback does exist.

619. The situation is made to appear more extreme than it actually is by the use of low tariffs to the poor but charging for the whole 10 m3 of the first 10 m3 block, even if consumption is less. So, in spite of the 45% lower tariff paid by RTSS at Serang, for example, the average tariff they pay is only 6% below the household average. This is highly regressive. Although it is general in Indonesia it does not follow the existing MOHA Water Tariff Guidelines (Kepmen 2/1998) which states that "All tariff calculations are based on the volume of water sold" (Semua perhitungan tariff berdasarkan atas volume air yang terjual).

THEORY AND GUIDELINES – FINANCIAL

620. ADB guidelines do not as yet[15] include definitions of financial sustainability or full costs. At the most basic, and often the most important level, full costs are cash flow costs, the sums the entity needs to remain in business. This is only short term financial sustainability, however, and tariff setters looking more towards the long-term define full costs differently. Definitions range from: (a) partial full costs (PFC), including depreciation and debt interest; to (b) full costs (FC), including depreciation and a return on assets. All such financial accounts based full cost definitions could use historic assets or revalued assets. The latter is the theoretically correct assumption and agrees with economists' definitions. It does give significantly higher required tariffs, however.

621. Existing and proposed MOHA guidelines ask for partial full costs. The original proposal made by ADB PPTA consultants was that depreciation should be based on revalued assets but current tax legislation, which treats asset revaluation as taxable income, makes this difficult and it was dropped. The new presidential decree (PP 16/2005) asks for a reasonable profit, and so can be seen as full cost, but does not as yet define either the base or the profit level base. In fact, the MOHA guidelines and the PP can be reconciled by the assumption that historic assets were provided by central government grants and the government does not wish that a "profit" be made on those investments (although it does of course require that the assets be fully maintained, the purpose of including the depreciation charge).

THEORY AND GUIDELINES – ECONOMIC

622. ADB guidelines ask that tariffs should promote the most efficient use of national resources but does not have a clearly defined position on how to do this. In this it reflects uncertainty in the economic profession. It might also be because there are several different forces at work, which imply different solutions, and that which is most important will depend on local circumstances.

623. At its most simplistic, the basic concept of economic efficiency in tariff setting is that tariffs should be designed to maximize the use of existing capacity. This might lead to two

[15] A draft listing the alternatives given here is under consideration at ERD.

problems in water supply, however, one purely practical, the other to do with the costing of scarce resources. Both relate to the fixed and variable charges required to ensure cost recovery. When there is excess capacity, variable charges should be low so as to expand use. Since all costs should be recovered, fixed charges then have to be high. Obviously vice versa applies as the utility moves from excess to scarce capacity. Shifting the tariff in this way would then break another "golden" tariff rule, that they should be predictable. Another problem is that if there is a need to restrict demand to match short run capacity, the required variable charge is not the long run marginal cost (LRMC), as might be expected, but should be set at a level to match supply and demand. One solution to this practical problem is the assumption that the utility will follow a relatively optimal expansion program, expanding capacity to meet demand in a predictable way. This would be a solution to the predictability problem but would not answer the question of whether the variable charge should be low, to induce additional demand, or high, to restrict it.

624. The solution to this is the economic value of raw water, which is related to whether or not the long run supply of raw water in a place or country should be seen as being naturally limited. If it is not, the economic value of the water is the value in the next alternative use, which may be close to zero, and variable charges should then be low so as to expand use to meet existing capacity. If raw water is limited, variable charges should be high to conserve a scarce resource. There certainly are places where this is the case but whether that applies to the whole of Indonesia is less certain. There are both national and inter-national forces which feel that water is indeed a scarce resource whose use should be controlled. The fact that water supply can be seen as limited does not deny the fact that it is a continuously renewed resource. This being so, it is reasonable to use long run marginal cost (LRMC) as the variable tariff. The LRMC can best be estimated from the average incremental cost (AIC) of the least-cost expansion plan. If this is not available, it can be approximated to by the full cost if existing water, as shown with asset revaluation in Table 95.

625. None of this should preclude the possibility that there may indeed be PDAMs with inbuilt excess capacity. This is difficult to evaluate with purely financial data, however. Tapteng and Taput, for example, have ample raw water and as a result low O&M and low AIFC. They also have low tariffs which induce relatively high lpcd consumption. Economic theory implies that if they need to increase total tariffs for financial reasons, as they do, they would be better increasing the fixed than the variable charge.

Financial Effects of Full Cost Recovery Options

626. The difference given by the various cost recovery requirements can be large, particularly if asset revaluation is included as an alternative. This is shown in Table 95. In 2004, actual average tariffs were 35% below those required by the MOHA PFC guideline.

627. The table also shows the assumed tariff used to prepare the PDAM forecasts, which is the maximum of cash flow and partial full costs with no asset revaluation. As can be seen, in 11 of the 13 cases studied, PFC tariffs would he higher than cash flow tariffs in 2011 and so have been assumed. Since the cash flow tariff is dependent on funding sources for project investment, it may be necessary to change these if funding decisions change.

Table 95: PDAM Tariff Forecast Options (2005 Rp/m3)

Location					Asset Revaluation		
	Actual	PFC MOHA	Required Assumed	No PFC (MOHA)	No FC	Yes PFC	Yes FC
	2004	2005	2011	2011	2011	2011	2011
Kab. Serang	1244	1435	3247	3247	3320	3423	3770
Kota Banjar	1929	1287	3831	2781	3025	2852	3488
Kab. Bandung	2337	2370	3308	3308	3283	3570	3866
Kab. Barru	1488	3639	4846	4846	4548	5684	5834
Kab. Bogor	1724	2166	3307	3307	3272	3834	4063
Kab. Maros	1847	3510	5959	5959	5606	6204	6358
Kab. Jeneponto	2898	3642	3756	3756	3583	3867	3923
Kota Palopo	1644	1900	3801	3801	3617	3877	4032
Kab Pemalang	1320	888	3815	3301	3338	3343	3722
Kota Semarang	2454	3487	4762	4446	4239	5173	5553
Kab. Sidrap	831	2978	5169	5060	5048	5338	5933
Kab. Taput	556	757	2594	2594	2577	2566	2771
Kab. Tapteng	341	837	4148	4148	4171	4223	4753
Average	1586	2223	4042	3889	3818	4150	4466

PDAM Tariff and Equity Injection Results

628. There are two main reasons why PDAM tariffs will need to be increased. These are: (a) to provide the required 30% counterpart funding; (b) to be able to repay the loan, and IDC, in 2011. With the construction program extended to fill the five year project period, it might have been possible to develop a fully funded, structured and politically acceptable set of tariff increases to the level required in 2011. This was proposed to RGs and PDAMs and it is possible that, with more time to explain, some would have been willing to accept, ie extend project development beyond the shortest possible period of time. As planned, however, most have programs which require counterpart funding too soon to funded, in practice, by tariffs and so equity injections or cash advances by the RG will be needed. In many cases, this could be paid back from connection fees in later project years as shown in Table 96. On average, the advances would need some 1.4% of RG revenues and the equity 0.6%. Kota Banjar would have the highest shares, 3.7% each.

Table 96: RG Cash or Equity Injections (Nominal Rp Million)

Location							Total	Total	Agreed
	2006	2007	2008	2009	2010	2011	Advance	Equity	RG
Kab. Serang	0	0	0	0	0	0	0	0	Yes
Kota Banjar	2325	4029	2057	0	0	0	8411	8411	Yes
Kab. Bandung	3388	3055	3388	-3055	0	0	6443	0	Yes
Kab. Barru	4342	0	0	-4342	0	0	4342	0	Yes
Kab. Bogor	0	0	0	0	0	0	0	0	Yes
Kab. Maros	6400	4700	0	-6400	-4700	0	11100	0	Yes
Kab. Jeneponto	2609	374	-2609	0	-374	0	2983	0	Yes
Kota Palopo	5256	3958	0	0	0	0	9215	9215	Yes
Kab Pemalang	0	3219	3653	-3219	-3653	0	6873	0	Yes
Kota Semarang	0	0	0	0	0	0	0	0	Yes
Kab. Sidrap	4507	11047	0	-4507	-11047	0	15554	0	Yes
Kab. Taput	5996	3221	3594	0	0	0	12811	12811	Yes
Kab. Tapteng	2358	6381	0	-2358	0	0	8740	6381	Yes
Average	2860	3076	254	-1837	-1521	0	6652	2832	

629. Allowing for the above injections, a set of tariff increases was developed and agreed, where possible, with the RG. These are shown in Table 97. Project funding will not be required until 2006 at the earliest and so PDAMs which have reasonable end 2004 cash

balances (as shown in Table 85) will have little cash based reason to raise tariffs in 2005. Even there, however, an increase in 2005 would be useful to minimize the need for an even larger increase in 2006. This can most easily be done by referring to the PFC tariff given by the MOHA guidelines, as shown in the table above. After 2007, is a period when the MOHA legislated PFC tariff is higher than cash flow needs but utilizing it will allow the build-up of reserves to offset tariff increase problems when loan repayments start in 2011. Without these reserves, the average tariffs in 2011 would have to be significantly higher. The reserves will be fully used later, after which a tariff higher than PFC will be required to repay the loan and make continuing replacement expenditure. While the mark-up varies by PDAM and year, on average it is some 10%. This is the same as the difference between FC tariffs with asset revaluation and PFC tariffs without, as shown in Table 96 above, an agreement of theory and practice which is hopefully not fortuitous.

Table 97: PDAM Tariffs Assumed (2005 Rp/m3)

Location	2004	2005	2006	2007	2008	2009	2010	2011	Agreed RG
Kab. Serang	1244	1435	1889	2212	2297	2434	2523	3247	Yes
Kota Banjar	1929	1929	2300	2300	2900	2900	3363	3831	Yes
Kab. Bandung	2337	2337	2600	2600	2600	2700	2700	3308	Yes
Kab. Barru	1488	1550	1860	2700	3859	3974	3991	4846	Yes
Kab. Bogor	1724	1724	2073	2518	2834	2972	2933	3302	Yes
Kab. Maros	1847	2220	2600	3200	3926	4550	4574	5959	Yes
Kab. Jeneponto	2898	2898	2898	2898	3040	2933	2864	3756	Yes
Kota Palopo	1644	1644	2500	2500	2783	2934	2857	3801	Yes
Kab Pemalang	1320	1400	1750	1750	2500	2500	2500	3815	Yes
Kota Semarang	2454	2750	3625	3780	3997	4118	4083	4762	Yes
Kab. Sidrap	831	1600	2500	2500	3516	3794	3838	5169	Yes
Kab. Taput	556	556	800	1100	1100	1800	1800	2594	Yes
Kab. Tapteng	341	400	1500	2009	2594	2802	2666	4148	Yes
Average	1586	1726	2223	2467	2919	3109	3130	4041	
	100%	109%	140%	156%	184%	196%	197%	255%	

5. PDAM Consumption Forecasts

630. PDAM consumption has been forecast using price and income elasticities. The former have been based on those derived from recent tariff increases as given in Table 97 above, rounded and adjusted as seemed necessary. Opponents of price elasticities often argue that the effects of tariff increases are short lived. If anything, however, the observed effects of the increase took some time to be realized but then continued and slightly increased. Sales per connection in 2004 were higher than those in 2001 in only two of the studied PDAMs; in eleven they were lower. This relates of course to the discussion above about the relative importance of price and supply. But Table 18 does at least indicate that it is price which is the most important in the PDAMs studied.

631. Price is only one determinant of demand and incomes also have an effect. This is likely to work in two ways. First a general growth in incomes will increase consumers' ability to purchase the water which they would like. Annual growth in incomes of 2% has been assumed. This may be higher than past growth in most Kabupaten but seems reasonable for the served urban areas. Income elasticity data is not available for particular project locations but a figure of 0.60 found for both Jakarta and Surabaya fits reasonably with international data and has been used. This means that per capita demand will grow naturally at 1.2% per annum. Second, however, is the fact that new customers are likely to have lower incomes than existing customers, and this is borne out by project survey data (see Table 91 above), which show a 67% difference. This agrees with Susenas data that demonstrate that the average income of households with piped water is now 50% higher than those without. This has been assumed.

632. Household demand has already fallen on average, as shown in Table 98. The change has, of course, varied by location and has been broken. Analysis implies that the fall will continue for another ten years. Unit demand will then start to increase again but will not

regain its early 2000's level. This conclusion might be over pessimistic and certainly assumes that sales problems this decade have been demand rather than supply based. What backs it up, however, is three important factors, all derived from history, vis: (a) it is the rich who are now connected; (b) the poor consume less per person that the rich at the same tariffs; (c) tariffs will have to increase significantly to repay loans.

Table 98: Household Consumption Forecasts Allowing for Tariff and Income Effects (*Liters/capita/day*)

Location	2001	2004	2005	2010	2015	2020	2025
Kab. Serang	151	121	122	103	92	91	89
Kab. Bandung	93	96	93	101	103	106	108
Kab. Barru	68	98	105	101	100	101	103
Kab. Bogor	155	153	146	125	121	121	120
Kab. Maros	94	106	102	85	79	85	88
Kab. Jeneponto	60	62	62	95	99	103	107
Kota Palopo	148	163	161	142	134	138	140
Kab. Tapteng	163	181	153	99	94	103	109
Average Current Scope	**117**	**123**	**118**	**106**	**103**	**106**	**108**
Kota Banjar	70	72	88	96	101	106	
Kab Pemalang	118	113	110	106	107	112	117
Kota Semarang	148	132	131	123	123	128	132
Kab. Sidrap	108	107	108	103	106	112	118
Kab. Taput	128	132	133	117	112	115	117
Average	**120**	**118**	**115**	**107**	**105**	**109**	**112**

6. PDAM FINANCIAL FORECASTS

633. PDAM financial forecasts are shown in detail in Appendix E. Critical indicators are shown in the following tables. The high cash balances shown before 2015 are the result of assuming partial full cost tariffs, as required by MOHA legislation and the consultants' TOR.

Table 99: Forecasts for PDAM Operating Indicators

Location	Operating Ratio			Cash to Min. Cash			Contribution to Investment		
	2005	2010	2015	2005	2010	2015	2005	2010	2015
Kab. Serang	107%	99%	82%	7.0	8.7	1.4	586%	68%	102%
Kota Banjar	66%	49%	56%	6.6	1.0	1.6	429%	-14%	110%
Kab. Bandung	86%	87%	74%	0.7	10.8	1.2	179%	109%	103%
Kab. Barru	220%	100%	83%	0.2	28.7	1.2	-2945%	210%	82%
Kab. Bogor	89%	89%	88%	3.9	29.0	18.0	361%	234%	102%
Kab. Maros	137%	94%	68%	1.1	12.6	2.8	872%	115%	105%
Kab. Jeneponto	113%	97%	80%	0.6	25.1	1.1	-1624%	123%	75%
Kota Palopo	95%	95%	72%	4.2	20.6	0.3	na	99%	97%
Kab Pemalang	64%	83%	63%	18.2	8.0	17	3740%	71%	103%
Kota Semarang	91%	83%	83%	3.5	3.2	1.2	-4087%	32%	97%
Kab. Sidrap	177%	98%	73%	3.6	8.1	1.0	-7036%	123%	101%
Kab. Taput	133%	92%	61%	3.2	22.2	1.0	883%	91%	100%
Kab. Tapteng	124%	86%	54%	11.1	43.8	1.4	2086%	129%	102%
Average	115%	89%	72%	4.4	17.0	2.6	-576%	107%	98%

634. The average asset base indicates the importance of the proposed investment compared to the existing situation. This can be biased by the age of the existing assets, however. The ratio of assets to water sales shows a normalization, with each PDAM moving towards the average, as would be hoped. Debt over debt plus equity remains below 70% at all PDAMs.

Table 100: Forecasts for PDAM Asset Indicators

Location	Avg. Asset Base (Rp B)			Assets/Water Sales			Debt/(Debt + Equity)		
	2005	2010	2015	2005	2010	2015	2005	2010	2015
Kab. Serang	19.2	136.0	150.9	2.13	3.70	2.16	0%	64%	49%
Kota Banjar	4.8	54.6	63.4	2.49	5.52	4.87	0%	61%	43%
Kab. Bandung	49.1	259.3	270.7	2.14	4.12	2.33	48%	73%	55%
Kab. Barru	10.7	32.1	26.7	7.27	3.05	1.41	13%	71%	63%
Kab. Bogor	117.4	316.7	290.7	2.30	2.27	1.39	12%	47%	33%
Kab. Maros	12.7	93.4	90.8	4.74	4.42	2.00	64%	84%	57%
Kab. Jeneponto	3.2	38.8	36.8	1.61	3.85	2.07	60%	74%	65%
Kota Palopo	7.6	90.2	89.5	1.37	4.69	2.26	87%	77%	59%
Kab. Pemalang	8.3	97.0	107.3	1.86	6.80	3.59	6%	75%	54%
Kota Semarang	204.6	352.9	356.5	2.77	2.29	1.67	102%	86%	49%
Kab. Sidrap	17.0	86.9	87.8	11.69	4.99	2.25	0%	74%	54%
Kab. Taput	1.2	58.0	60.8	1.42	7.04	3.56	5%	75%	61%
Kab. Tapteng	3.3	45.8	49.8	16.58	9.62	4.36	0%	73%	57%
Total	459.1	1,661.6	1,681.8						
Average	35.3	127.8	129.4	4.49	4.80	2.61	31%	72%	54%

635. End year debt increases considerably at all PDAMs apart from Semarang. Accumulated interest will be some 8% of debt by 2010.

Table 101: Forecasts for PDAM Debt (Nominal Rp Billion)

Location	End Year Debt			Accum. Interest		Debt Payments		
	2005	2010	2015	2010	Share	2005	2010	2015
Kab. Serang	0.0	122.2	91.6	10.2	8.3%	0.0	0.0	15.3
Kota Banjar	0.0	44.8	33.6	3.7	8.3%	0.0	0.0	5.6
Kab. Bandung	24.8	238.9	174.0	18.9	7.9%	5.0	4.1	30.6
Kab. Barru	1.3	33.6	24.3	2.8	8.2%	0.2	0.3	4.4
Kab. Bogor	17.3	278.8	205.4	22.7	8.1%	4.0	3.0	35.5
Kab. Maros	8.4	97.2	66.3	7.9	8.1%	0.6	2.3	13.4
Kab. Jeneponto	1.9	40.5	29.6	3.3	8.1%	0.3	0.3	5.1
Kota Palopo	5.4	89.7	60.9	7.6	8.5%	1.5	2.6	11.5
Kab. Pemalang	0.7	87.4	65.5	7.2	8.3%	0.1	0.1	10.9
Kota Semarang	258.3	386.3	209.8	18.2	4.7%	35.2	49.8	36.8
Kab. Sidrap	0.0	75.5	56.2	6.4	8.5%	0.9	0.0	9.7
Kab. Taput	0.1	55.0	41.3	4.6	8.4%	0.0	0.0	6.9
Kab. Tapteng	0.0	42.2	31.6	3.5	8.3%	0.0	0.0	5.3
Total	318.3	1,592.0	1,090.5	117.1	7.4%	47.7	62.6	191.1
Average	24.5	122.5	83.9	9.0	8.0%	3.7	4.8	14.7

636. The following table, showing the debt service coverage ratio, needs some explanation since several definitions of the indicator are available. The ADB Financial Governance Guidelines include only one definition, classified as Net Revenues in the table. Net revenues are derived from the income statement and do not allow for: (a) required other investment, which might lead to lower cash availability (Cash Flow), or (b) cash balances, which modify the effect of other investment requirements by adding back in the previous year's cash balance. As can be seen, the ADB requirement is less constricting than the others and is in all cases more than 1.3. Note that it was the cash balance indicator which was used to calculate required tariffs.

Table 102: Forecasts for PDAM Debt Service Coverage

Location	2011 Cash Flow	2011 Cash Balance	2011 ADB Net Revenues	2016 Cash Flow	2016 Cash Balance	2016 ADB Net Revenues
Kab. Serang	0.68	1.36	1.86	1.02	1.14	2.88
Kota Banjar	1.10	1.02	1.41	1.03	1.13	1.27
Kab. Bandung	0.78	1.68	1.54	0.99	1.07	2.07
Kab. Barru	0.60	2.81	1.85	0.98	1.06	3.34
Kab. Bogor	1.10	7.16	2.33	1.08	8.35	3.11
Kab. Maros	0.57	1.14	1.47	1.02	1.41	2.77
Kab. Jeneponto	0.63	2.58	1.49	0.98	1.05	2.46
Kota Palopo	0.58	1.76	1.31	0.94	0.81	2.32
Kab Pemalang	0.87	1.02	1.58	1.01	1.14	1.92
Kota Semarang	0.70	1.01	1.15	1.10	1.09	2.22
Kab. Sidrap	0.66	1.00	1.57	0.96	1.00	2.51
Kab. Taput	0.61	1.41	1.13	0.95	1.00	1.72
Kab. Tapteng	0.68	1.75	1.33	0.93	1.08	1.93
Average	0.73	1.98	1.54	1.00	1.64	2.35

H. FINANCIAL MANAGEMENT ASSESSMENT

1. PURPOSE

637. Effective financial management is a critical success factor for project sustainability. Irrespective of how well a particular project or program is designed and implemented, if the executing or implementing agency does not have the capacity to effectively manage its financial resources, the benefits of the project are unlikely to be sustainable.

638. The financial management assessment (FMA) includes a review of the executing/implementing agency's (EA/IA) systems for financial and management accounting, reporting, auditing and internal controls. In addition, the FMA involves a review of the EA/IA disbursement and cash flow management arrangements. The FMA is not an audit. It is a review designed to determine whether or not the EA/IA financial management arrangements are considered capable of and adequate for recording all transactions and balances, supporting the preparation of regular and reliable financial statements, safeguarding the entity's assets, and are subject to audit (of substance and form acceptable to ADB). Issues or weaknesses identified during the FMA should be taken into consideration either through project design (i.e. including a component to strengthen financial management systems) or the development of project implementation arrangements (i.e. including a project administration/management office within the entity with necessary financial management skills and/or procedures).

639. The FMA should be completed as part of project preparation. The FMA should be completed as early as possible, preferably during project preparation, to allow for early detection and resolution of issues. If a PPTA is used to prepare the project, the initial results of the FMA should be included in the mid term report of the PPTA.

640. The broad approach to a FMA is as follows:

- Review country diagnostic assessments completed by ADB or development partners.[16]
- Determine if a FMA has been completed by another donor. If so review and update if necessary.
- If a FMA has not been completed for the EA/IA, the EA/IA, supported by PPTA consultants, should complete the financial management assessment questionnaire (FMAQ).

[16] Including: Country Financial Accountability Assessment (CFAA), Country Procurement Assessment Report (CPAR), Country Governance Assessment (CGA) and Diagnostic Study on Accounting and Audit (DSAA)

- Based on the results of the questionnaire, determine what, if any, additional review/follow up is warranted
- Identify issues or risks associated with the entity's financial management systems and determine the most appropriate risk mitigation measures to be adopted as part of project design and/or project implementation arrangements
- The results of the FMA should be noted in the RRP.

2. BACKGROUND

641. The project will be executed by the DGHS of MPW, who will set up the PMU. DGHS/MOW has a long track record in the formulation of water supply and sanitation programs funded by the ADB and other donors. It can be assumed that a FMA for the agency has been completed.

642. Water supply works will be implemented by the PDAM who will also be the operating agency. This is a change from the previous system in which central government line agencies implemented the works and then handed them over the PDAMs. The change is the result of decentralization to regency level government. It is not known if any urban water supply projects have been successfully implemented under the new system.

643. The sludge treatment plant at Serang will be implemented by the RG Dinas PU, who have been involved in the detailed engineering design. The pilot sanitation works will be implemented by a Stakeholder Committee, in coordination with the RG BAPPEDA. Consultants will be involved to ensure that local community wishes are adhered to.

644. The World Bank is embarking on a similar project but with only one or maybe two RGs/PDAMs. They do not appear to have performed a formal FMA of the IAs and their PAD, the equivalent of an RRP, contains many qualificatory remarks regarding implementation capability.

3. ACTIONS TAKEN

645. The consultants have taken the following action with respect to the assessment of the financial management capacity of implementing agencies:

- An Indonesian language questionnaire was prepared based on the ADB's FMAQ;
- The local institutional experts provided the questionnaire (English and Indonesian language version available) to the Financial Director of each PDAM visited on the opening day of their 4-day visit. In total, the questionnaire was distributed in 16 PDAMs;
- The Director Finance was targeted as being the person most likely to be capable of understanding the intent of the questionnaire. In each location the Director was asked to complete as much as possible and be ready to discuss and return it on the 3rd day of the visit.
- During the week visit the financial experts from the consultants also had the opportunity to observe current accounting and financial management practices and draw some conclusions on the ability of PDAMs and the local government to honor commitments to manage properly the project finances and subsequent infrastructure operations.

4. RESULTS - PDAM

646. A typical response from the PDAM Director was to return the questionnaire on the third day largely (if not entirely) incomplete, saying that until the project implementation arrangements (location of the PIU in the PDAM or at local government level, likely personnel, scope of project etc) are better defined, they find it difficult to complete properly. One reason for this may be that the FMAQ starts with "Implementing Agency", rather than making it obvious that what is wanted is details of the existing agency in its non-implementation mode. There is also some truth in the problem with the assessment claimed by the Directors;

certainly, arrangements for channeling funds will influence the competencies required at different points in the project implementation set-up.

647. It was also observed that several Financial Directors did not understood much of the questionnaire, which requires a substantial grasp of financial management and accounting theory and actual procedures, as well as MDB project financial management experience. In fact, no PDAM's return was sufficiently complete to suggest the presence of the needed capacity.

648. It was also observed the local governments and their PDAMs on Java are generally more competent than those in North Sumatra and, especially, Sulawesi. For example, in Sulawesi, many of the PDAMs have not been properly audited for some years and do not keep accounts in accordance with the Home Affairs Guidelines of 1999. In fact some of their systems are extremely rudimentary and clearly not to the required standard. Java locations are far more familiar with MDB project procedures and have access to better personnel. Even PDAM Semarang, however, which has been involved in two IUIDPs, said that filling in the form was impossible until implementation arrangements were firmed up.

649. A subjective evaluation of PDAM accounting data is included below, which refers to how the PDAM relates to some "average" PDAM. The table also gives the state of computerization.

Table 103: Evaluation PDAM Accounting Records

Location	Data			Computerization		
	Available	Up to Date	Accurate	Billing	Accounts	Integrated
Kab. Serang	Average	Average	Average	Yes	No	No
Kota Banjar	Above	Average	Average	No	No	No
Kab. Bandung	Above	Above	Above	Yes	Yes	Yes
Kab. Barru	Below	Below	Below	Yes	No	No
Kab. Bogor	Above	Above	Above	Yes	Yes	Yes
Kab. Maros	Average	Below	Average	Yes	No	No
Kab. Jeneponto	Below	Below	Below	Yes	No	No
Kota Palopo	Above	Average	Good	Yes	Yes	No
Kab Pemalang	Average	Average	Average	Yes	No	No
Kota Semarang	Above	Above	Above	Yes	Yes	Yes
Kab. Sidrap	Below	Below	Below	No	No	No
Kab. Taput	Below	Below	Below	Yes	No	No
Kab. Tapteng	Below	Below	Below	No	No	No

Source: WSSP Consultants

5. RESULTS - RG

650. As with the PDAMs, it will not be until implementation arrangements are better defined that it will be reasonable to attempt an FMA of the RG. At the time of the field visits, it was also not known whether there would be a sanitation program and of what it would consist. A similar overall evaluation of the RG accounting system and data was made and the results are shown below.

Table 104: Evaluation Regional Government Accounting Records

Location	Data Available	Data Up to Date	Data Accurate	Computerization
Kab. Serang	Above	Above	Above	Partial
Kota Banjar	Above	Above	Above	Partial
Kab. Bandung	Above	Above	Above	Yes
Kab. Barru	Below	Below	Above	Partial
Kab. Bogor	Average	Average	Above	Yes
Kab. Maros	Average	Average	Above	Partial
Kab. Jeneponto	Below	Average	Above	Partial
Kota Palopo	Above	Above	Above	Partial
Kab Pemalang	Average	Above	Above	Partial
Kota Semarang	Above	Above	Above	Yes
Kab. Sidrap	Average	Average	Above	Partial
Kab. Taput	Average	Average	Above	Partial
Kab. Tapteng	Average	Average	Above	No

Source: WSSP Consultants

6. CONCLUSIONS

651. Overall, the low capacity to manage financial aspects of the project does present a material risk to successful project implementation. Nevertheless, it is quite possible that the required knowledge, attitudes and skills / experience already exists with some persons somewhere in the local governments and PDAMs, and what is being seen is simply the uncertainty of the financial director, who has not been involved in a key position in a past ADB or WB project. Until the proposed implementation structure is specified, assessing capacity is more difficult than it could be.

652. What should be done to mitigate the risk? Some immediate suggestions include:

- After the project implementation structure is agreed, a Project Implementation Manual should be prepared, using bridging assistance, which specifies in detail, among various matters: (i) the authority and accountability of key personnel (ii) the competencies required of the positions (iii) the recruitment, selection, approval, induction, performance assessment and removal processes for these key positions (iv) the specific accounting procedures to be practiced (v) the reports, their content and delivery requirements and (v) audit requirements.
- Specify that the PIU be staffed by persons meeting specified competencies – drawn from the local government, or even hired, and not just from the PDAM.
- The PMU / ADB should have the power to reject proposed candidates for the Head of the PIU, and key financial personnel proposed by the Local Government for the PIU;
- The Project Implementation Manual might be prepared participatively by or at the start of the project using key persons from the RGs to improve its ownership;
- Training should be given, before funds are released, in project financial management to proposed PIU personnel, pre-selected to ensure they have the capacity to make use of the training;
- On-the-job training and assistance should be provided by the implementation support consultant to ensure the accounting system is operated according to procedures in the first year of the project;
- Use of an independent "Quality Assurance" consultant to detect non-compliance through random audits separately from the more routine annual audits done by BPKP or public accountants;
- Insist that, as part of the Good Corporate Governance institutional development activity, a Anti Corruption Action Plan be developed and reviewed annually by the PDAM Supervisory Board, including ensuring the accounting system is appropriate

and operated correctly (an outline of ACAP is in the GCG Index developed as part of the Project Log-frame);

- In those PDAMs which are not accounting in accordance with the current Guidelines or who have not had a satisfactory audit by BPKP or Public Accountant, a mandatory FOPIP activity should be undertaken to introduce a proper accounting system.

653. In summary, a pro-active position should be taken in the project design. Past project approaches were in general based on implementation by central agencies. They assumed the local government to have competent personnel and did not include "project management" capacity building. This should not be repeated, especially now under decentralization. As a number of PDAM officials and civil society representatives have noted during the assessments, the current stage in decentralization and development of local political elites requires building not only project management capacity, but also provision of strong, independent (external) supervision mechanisms.

I. WATER SUPPLY SUB-PROJECT FINANCIAL ANALYSIS

1. WATER SUPPLY SUB-PROJECTS

654. Each PDAM was asked to propose sub-projects for inclusion. The Stakeholder Committee was involved at a later date but in general the projects evaluated are those first proposed by the PDAM. As shown below, these are mainly extension of the existing system in the Kabupaten / Kota capital town. Only PDAMs Serang and Taput proposed projects outside of this area. This must be considered at least a pity since it is known that there are many small town systems already installed but not working efficiently (see Table 90). It will also downgrade the ability of the project to affect the lives of the poor in smaller rural towns.

655. Cost, capacity and new connection data on the projects which might still be included are shown below. PDAMs which might still be excluded are shown in the table. Projects which have been excluded by the PDAM, eg Langansari in Kabupaten Banjar, are not, since they are no longer in Finpro. The data for the projects shown are not always the same as those first proposed by the PDAM but have been adjusted to allow for the consultants' engineering and demand based critique and any last minute proposals by the PDAM. These changes can be seen from the proposed and "final" capacity and connection data given in the table. The new project at Palopo will provide 250 lps but 122 lps will be retired in 2008.

Table 105: Water Supply Sub-Projects

Location	Investment (Nominal)			AIFC	Capacity (lps)		Connections (000)	
	RpB	% Total	RpM/HC	05 Rp/M3	Prop.	Final	Prop.	Final
Serang	105	7.4%	6.2	2,803	300	200	20.7	17.1
Cinuas/Serang	18	1.2%	2.8	2,782	40	40	5.4	6.2
Banjar	46	3.2%	7.7	1,893	50	80	4.3	6.0
Soreang/Bandung	231	16.3%	7.2	2,408	500	500	41.0	32.4
Baru	33	2.3%	5.9	3,204	100	50	7.2	5.6
Bogor Timur	100	7.0%	8.0	2,974	150	150	11.0	12.4
Bogor Tengah	138	9.7%	12.5	3,666	150	150	11.0	11.0
Bogor Barat	32	2.3%	5.1	2,197	80	80	11.0	6.4
Maros	40	2.8%	4.5	2,181	100	75	9.7	8.8
Jeneponto	95	6.7%	6.8	2,659	300	250	19.1	13.9
Palopo	91	6.4%	13.0	3,082	300	128	11.5	7.0
Pemalang	91	6.4%	13.1	2,669	120	100	9.5	7.0
Semarang	225	15.8%	5.5	2,972	0	0	41.1	41.1
Sidrap	79	5.5%	6.5	2,640	250	200	14.5	12.0
Tarutung/Taput	31	2.2%	8.8	2,545	60	60	3.6	3.6
Sipoholon/Taput	15	1.0%	7.2	2,189	30	30	2.1	2.1
Muara/Taput	10	0.7%	4.0	1,545	30	30	2.1	2.5

Location	Investment (Nominal)			AIFC	Capacity (lps)		Connections (000)	
	RpB	% Total	RpM/HC	05 Rp/M3	Prop.	Final	Prop.	Final
Tapteng	43	3.0%	7.1	1,716	120	100	7.4	6.0
Simple Average	79	5.6%	7.3	2,562	149	124	12.9	11.2
Weighted Avg			7.9	2,747	204	177	21.2	18.5
Total	1,423				2,680	2,223	232	201

2. DEMAND FOR IDENTIFIED PROJECTS

656. The following table gives the coverage (percentage of population served) assumed in the PDAM and sub-project service areas. The coverage given for the sub-project areas in 2004 is zero since the data relates only to those who are not connected at present. As these households connect they will add to the PDAMs coverage and the implied increases are shown for each PDAM.

657. Demand for connections in the sub-project areas, as given by the WSSP Real Demand Survey, is shown below. On average, 55% to 60% of such households said that they would like a connection, although the percentage varied considerably by location. It was highest in Serang and Jeneponto and lowest in Pinang. The main reason given for households not wanting a connection is because their existing supply is sufficient.

Table 106: Assumed Coverage and Surveyed Demand for Connections

Location	Assumed Coverage			Demand	Not Want
				Want	Because
	2004	2007	2010	HC	Enough
PDAM Kab. Serang	**30%**	**38%**	**54%**	**84%**	
Serang	**0%**	**25%**	**53%**	**77%**	
Ciruas/Serang	0%	16%	43%	89%	
PDAM Kota Banjar	**32%**	**41%**	**60%**	**81%**	
Banjar	0%	11%	31%	72%	88%
PDAM Kab. Bandung	**12%**	**16%**	**20%**	**70%**	
Soreang	0%	12%	30%	66%	86%
PDAM Kab. Barru	**23%**	**35%**	**48%**	**60%**	
Barru	0%	17%	35%	48%	86%
PDAM Kab. Bogor	**24%**	**35%**	**43%**	**50%**	
Bogor Timur	0%	30%	46%	35%	73%
Bogor Tengah	**0%**	**8%**	**16%**	**35%**	**94%**
Bogor Barat	0%	3%	4%		
PDAM Kab. Maros	**27%**	**49%**	**74%**	**88%**	
Maros	0%	28%	61%	83%	33%
PDAM Kab. Jeneponto	**19%**	**50%**	**59%**	**71%**	
Jeneponto	0%	29%	37%	64%	60%
PDAM Kota Palopo	**51%**	**60%**	**76%**	**78%**	
Palopo	0%	11%	28%	56%	52%
PDAM Kab Pemalang	**28%**	**30%**	**39%**	**69%**	
Pemalang	0%	3%	20%	56%	25%
PDAM Kota Semarang	**68%**	**77%**	**88%**	**83%**	
Semarang	0%	21%	47%	46%	1%
PDAM Kab. Sidrap	**13%**	**27%**	**49%**	**46%**	
Sidrap	0%	15%	38%	38%	75%

Location	Assumed Coverage			Demand	Not Want
				Want	Because
	2004	2007	2010	HC	Enough
PDAM Kab. Taput	**23%**	**34%**	**52%**	**83%**	
Tarutung/Taput	0%	11%	26%	69%	68%
Sipoholon/Taput	0%	19%	50%	100%	
Muara/Taput	0%	19%	61%	67%	
PDAM Kab. Tapteng	**12%**	**27%**	**50%**	**68%**	
Tapteng	0%	15%	37%	63%	73%
PDAM Average	**28%**	**40%**	**55%**	**72%**	**63%**
Sub-project Average	0%	16%	37%	63%	51%

658. Willingness to pay for a connection in the sub-project areas is shown below. No survey was conducted at Bogor Barat or Muara since they were was added by the PDAMs at too late a stage.

Table 107: Survey Results for Willingness to Pay for Connections

Location	≤ Rp 0.5 Mil		Rp 0.5 – 1.0 M		> Rp 1.0 Mil	
	Cash	Credit	Cash	Credit	Cash	Credit
Serang	**69%**	**71%**	**41%**	**47%**	**17%**	**38%**
Ciruas/Serang	7%	71%	7%	49%	0%	2%
Banjar	**17%**	**98%**	**17%**	**98%**	**0%**	**0%**
Sorean/Bandung	61%	45%	7%	9%	0%	0%
Barru	**61%**	**36%**	**0%**	**0%**	**0%**	**0%**
Bogor Timur					0%	71%
Bogor Tengah					**4%**	**53%**
Bogor Barat						
Maros	**52%**	**54%**	**0%**	**0%**	**0%**	**0%**
Jeneponto	54%	91%	0%	0%	0%	0%
Palopo	**61%**	**84%**	**0%**	**0%**	**0%**	**0%**
Pemalang	10%	67%	10%	67%	0%	24%
Semarang	**25%**	**88%**	**25%**	**88%**	**0%**	**3%**
Sidrap	70%	99%	0%	0%	0%	0%
Tarutung/Taput	**30%**	**69%**	**10%**	**56%**	**2%**	**18%**
Sipoholon/Taput	100%	100%	0%	130%	0%	60%
Muara/Taput						
Tapteng	27%	63%	4%	16%	1%	1%
Simple Average	**46%**	**74%**	**9%**	**40%**	**1%**	**17%**
Weighted Avg	37%	59%	10%	30%	2%	16%

659. Comparing the two tables has several uses. First they show that the assumed coverage is well below the numbers who would like a connection, Second it shows how many who would like a connection do not appear to be willing to pay cash or even credit for one. These results must be suspect, however, since the correct contingent valuation survey techniques were used only in Serang and Ciruas, where the results show significantly higher wtp. At Bogor, in particular, households were asked only if they were willing to pay the present connection fee of Rp 1.75 million. Thirdly, they show how important lower connection fees and/or credit could be.

660. Willingness and ability to pay for water in the sub-project areas are shown below. Willingness was recorded directly in the survey; ability was calculated from the proportions of the population for whom the quoted monthly bills are no more than 4% of household income/expenditure. The present average household bill is some Rp 25,000 per month but the assumed tariff increases mean that this will need to rise to some 2005Rp 60,000 per month. The table shows that there is little if any expressed willingness to pay that amount. Ability to pay also imply that there could be problems with bills of that size since on average only some 11% on average of presently unconnected households could "afford" the average bill. Households do have the option of lowering their consumption but the data given here

imply that both willingness and affordability could be issues. The willingness problem is reflected in the low EIRRs (see K.1 and affordability is discussed further in L below.

Table 108: Willingness and Ability to Pay for Water (2005 Rp/HH/Month)

Location	2011	Willingness					Ability @ 4% Household Expenditure				
	Bill Rp000	<10	10-20	20-35	35-50	50-75	<10	10-20	20-35	35-50	50-75
Serang	47.1	15%	66%	8%	3%	2%	15%	66%	8%	3%	2%
Ciruas/Serang	49.7	15%	66%	8%	3%	2%	15%	66%	8%	3%	2%
Banjar	48.0	25%	65%	8%	2%	0%	2%	19%	29%	29%	21%
Soreang/Bandung	53.7	6%	22%	28%	42%	3%	11%	15%	52%	11%	11%
Baru	72.0	56%	40%	4%	0%	0%	0%	35%	42%	17%	6%
Bogor Timur	63.7	29%	21%	43%	7%	0%	38%	31%	15%	15%	0%
Bogor Tengah	61.0	24%	12%	45%	10%	10%	37%	19%	26%	15%	4%
Bogor Barat	64.1										
Maros	50.9	32%	66%	2%	0%	0%	0%	59%	35%	5%	2%
Jeneponto	66.9	64%	28%	7%	1%	0%	0%	48%	21%	25%	5%
Palopo	74.1	43%	57%	0%	0%	0%	0%	25%	66%	7%	2%
Pemalang	54.1	27%	53%	18%	3%	0%	17%	30%	24%	17%	11%
Semarang	77.5	42%	39%	8%	10%	0%	42%	17%	22%	7%	12%
Sidrap	79.2	83%	11%	2%	2%	3%	0%	52%	28%	9%	10%
Tanutung/Taput	44.9	53%	43%	4%	0%	0%	0%	26%	39%	23%	11%
Sipoholon/Taput	44.7	48%	52%	0%	0%	0%	0%	60%	40%	0%	0%
Muara/Taput	44.8										
Tapteng	59.8	52%	33%	10%	5%	0%	0%	14%	30%	23%	32%
Simple Average	58.7	38%	42%	12%	5%	1%	11%	36%	30%	13%	8%
Wted Average	62.2	33%	35%	16%	11%	2%	17%	29%	30%	12%	8%

3. WATER SUB-PROJECT FINANCIAL EVALUATION

661. The financial benefits of the proposed sub-projects are shown in Table 109. The long run cost of water is given by the AIFC, and the 10% addition for capacity building would increase them accordingly. They are below the tariffs required to repay loans shown in Table 97. The costs and revenues shown depend on willingness to connect. Survey data given in Table 106 above can be used to judge the likelihood of such willingness.

662. The calculations follow standard ADB procedures as specified in their guidelines. Constant price cash flows were discounted over 20 years. Both replacements and an end value were included. Demand, base costs and revenues are the same as those used in the economic analysis. The FNPV and AIFC are calculated at the weighted average cost of capital (WACC). This is shown in the table and varies by PDAM as a result of different shares of government and consumer funds in the 30% not funded from the loan. The nominal cost of government counterpart funds has been taken as the 12.5% rate the central government has recently had to offer to obtain bonds. The cost of consumer funds is assumed to be the 6.0% available on bank deposits. Loan interest is adjusted for corporation tax at 30%; the other two sources are not adjusted. All are converted to constant prices at the ADB's forecast 5.5% inflation rate for Indonesia.

663. The WACC averages 1.3% but varies from 1.0% to 2.7%. The higher values and so cut-off point occur when immediate tariff increases would have to be too high and the RG have agreed to provide an equity injection. The FIRR is calculated before funding and so that equity injection does not count as cash flow income in the FIRR calculation. It might be thought that that is applying a double penalty to the project but the very fact that equity rather than tariffs does give cause for concern.

664. The direct sub-project costs do not include institutional development (ID), for several reasons. First, the costs of ID have not yet been fully formulated, discussed or accepted; past experience implies that the latter will not occur until well after the physical projects are defined and accepted. Second is uncertainty as to how to allocate the costs to projects. Certain of

them will be essential to project success; others will be useful in the long run but for non-project related reasons. Similarly, some will be water supply related, some sanitation and some more general. Obviously, at the very end of project preparation it could be useful to properly allocate ID costs. Until that time, however, all that can be done is to make some global estimate for the amount to add to the direct costs of each project. As a reasonable first estimate this is that it will increase investment by some 10%. The results of this assumption are also shown in the table.

665. Even after the addition of ID, the FIRRs are more than the WACC for most sub-projects.. Problem sub-projects are: Banjar, Barru, Maros and Tarutang. The Tarutang FIRR is not below the average WACC, however.

Table 109: Sub-project Financial Viability, With and Without Technical Assistance

Location	Before Cap. Bldg. Costs			After Cap. Bldg. Costs		AIFC
	WACC	FNPV (05Rp M.	FIRR	FNPV (05Rp M.)	FIRR	Before CBC 05Rp/M3
Serang	1.1%	55,945	4.8%	50,429	4.1%	2,803
Ciruas/Serang	1.1%	8,493	4.8%	7,589	4.1%	2,782
Banjar	2.2%	12,792	4.5%	11,114	4.0%	1,893
Soreang/Bandung	1.1%	145,321	5.8%	135,175	5.0%	2,408
Barru	1.2%	41,692	9.6%	39,654	8.5%	3,204
Bogor Timur	1.1%	45,437	4.5%	40,499	3.8%	2,974
Bogor Tengah	1.1%	9,619	1.6%	2,662	1.2%	3,666
Bogor Barat	1.1%	49,646	13.8%	48,050	12.1%	2,197
Maros	1.2%	60,704	12.5%	58,584	11.0%	2,181
Jeneponto	1.1%	155,009	11.8%	149,327	10.5%	2,659
Palopo	1.0%	34,499	3.5%	29,865	3.0%	3,082
Pemalang	1.0%	12,267	2.0%	8,588	1.6%	2,669
Semarang	0.9%	284,989	10.5%	276,912	9.4%	2,972
Sidrap	1.1%	112,766	10.6%	108,699	9.4%	2,640
Tarutung/Taput	2.5%	-2,295	1.9%	-3,830	1.6%	2,545
Sipoholon/Taput	2.5%	1,414	3.2%	649	2.8%	2,189
Muara/Taput	2.5%	5,833	7.1%	5,336	6.4%	1,545
Tapteng	1.9%	35,894	8.0%	33,722	7.1%	1,716
Simple Average	1.4%	59,446	6.7%	55,724	5.9%	2,562
Weighted Average	1.2%	101,963	6.6%	96,151	5.8%	2,747

J. SANITATION SUB-PROJECTS

1. IDENTIFIED SUB-PROJECTS

666. Projects identified are as follows:

- construction of a sludge treatment plant (IPLT) at Serang;
- pilot Community Sanitation Centres (CSC);
- pilot Simple Community Sewerage Systems (SCSS);
- school sanitation centres (SSC).

667. 35 CSCs have already been built in migrant settlements in Jakarta, Surabaya and Denpasar. These facilities were designed by the Bremen Overseas Research and Development Association (BORDA). Each contains six WCs, six bath cubicles, a washing room for clothes and a room for an operator. A simple underground wastewater biological treatment plant is incorporated, which distinguishes it from an old style MCK. This eliminates surface water pollution and also provides biogas as a renewable energy source.

668. Some SCSSs designed by BORDA have already been built. They contain sewerage and a small waste water treatment plant. Community involvement is the same as CSCs.

669. In previous BORDA projects investment costs were provided 40% by central grants, 30% by the local government, 10% by the community and 20% by donors. In order to better previous experience, grants were provided only if a participatory dissemination approach involving local NGOs as well as communities was followed. This meant that the facilities were provided only in places where the community had demonstrated commitment and had agreed to provide 10% of the investment in cash or labor. In some cases, the offer of a facility was advertised generally and communities were invited to bid to have one.

670. In addition to the Serang IPLT, the sub-projects assumed are in packages of 3 CSCs, 3 SCSSs and 20 schools. Bandung, Bogor and Semarang would have two packages. The other RGs one each. The costs of the assumed pilot projects would be some Rp 60 billion, 1.5% of the RGs combined borrowing capacity in 2005 with the 75% rule and 0.6% of that with the DSCR rule.

2. SANITATION SUB-PROJECT COSTS AND FINANCING

671. The following table summarizes the fixed investment costs for the proposed sanitation physical improvement works. There remains some controversy regarding central government grant funding to regional governments for urban infrastructure. Elements of the government believe that the existing national funds allocation (see Table 74) is sufficient and that that should be enough to cover decentralized regional responsibilities for urban services. Others believe that the central government still has a responsibility, particularly in sanitation. This is a controversy which will continue and solutions specific to each example will have to be found. Discussion and examples in the following section imply that appropriate loan funding to regional governments for sanitation projects could provide a solution. In the meantime, however, the consultants have been instructed to assume: (a) central grant funding, from ADF loans, of CSC and SCS pilot projects; (b) ADF loan funding passed on to regional governments for IPLTs, with 30% RG equity injections.

Table 110: Investment Costs of Sanitation Projects 2006 – 2010 (Current Rp Million)

Description	IPLT	CSCs	SCSSs	Schools	Total	%
Kab. Serang	18,342	1,671	1,633	455	22,102	28.2%
Kota Banjar	0	1,671	1,633	455	3,759	4.8%
Kab. Bandung	0	3,341	3,267	911	7,519	9.6%
Kab. Barru	0	1,671	1,633	455	3,759	4.8%
Kab. Bogor	0	3,341	3,267	911	7,519	9.6%
Kab. Maros	0	1,671	1,633	455	3,759	4.8%
Kab. Jeneponto	0	1,671	1,633	455	3,759	4.8%
Kota Palopo	0	1,671	1,633	455	3,759	4.8%
Kab Pemalang	0	1,671	1,633	455	3,759	4.8%
Kota Semarang	0	3,341	3,267	911	7,519	9.6%
Kab. Sidrap	0	1,671	1,633	455	3,759	4.8%
Kab. Taput	0	1,671	1,633	455	3,759	4.8%
Kab. Tapteng	0	1,671	1,633	455	3,759	4.8%
Total Fixed	18,342	26,728	26,134	7,287	78,492	100.0%
IDC	2,677	614	608	188	4,087	5.2%

3. SANITATION SUB-PROJECT FINANCIAL EVALUATION

COMMUNITY SANITATION CENTRES

672. Cash flows for an example CSC project derived from previous BORDA experience are shown in Table 111. On average some 200 plus people use each CSC and user fees are said to provide some Rp 20 million (US$ 1,800 – 2,400). That is some Rp 255per person per day; around 2% of equivalent per capita GDP and some 3% of average per capita expenditure in urban areas, derived from the 2003 Susenas. Existing MKKs in several towns charge Rp 500 per visit. The difference might be the result of the focus in BORDA projects on migrant as against local populations.

673. The table shows that, at Rp 255/visit, revenue from users would provide 26% more than direct operational costs. It also shows, however, that if conventional capital costs are added revenues would be only some 51% of total (full cost recovery) costs. A more detailed cash flow analysis shows that a charge of Rp 440 per visit would be needed to give an FIRR equal to the WACC. At Rp 500 per visit, the present charge at many MCKs, the FIRR before loan funding would be 2.7%.

674. If 70% of the investment cost was funded by an ADF loan to the RG (with 20% as RG equity and 10% from the community), the required fees per visit to give the RG a return on investment equal to the WACC would be: (a) Rp 413 with the expected 5.02% mark-up on loan interest; (b) Rp 332 with zero mark-up; (c) Rp 383 with a mark-up of 3.4% which would equalize the present value of loan flows to the central and regional governments.

675. These results would depend, of course, on the ability of each facility to continue to attract 200 persons per day at the fee charged. They do indicate, however, that local funding of poverty based sanitation facilities need not be as expensive as is often assumed. As instructed, however, the three pilot projects are assumed to be funded as a grant from the ADF loan.

Table 111: Community Sanitation Centre Costs in 2005 Prices

Description	US$	Rp 000	% O&M	% Total
Investment, construction	30,092	294		
Investment, incl. preparation and monitoring	43,634	426,300		
Annual Operations				
Salary	600	5,862	37%	15%
Electricity	360	3,517	22%	9%
Cleaning Materials	120	1,172	7%	3%
Social Contribution	180	1,759	11%	4%
Maintenance/Repairs	360	3,517	22%	9%
Total Operational	1,620	15,827	100%	40%
Annualized Capital Costs (1%, 20 years)	2,418	23,624	149%	60%
Total Annual Costs	4,038	39,451	249%	100%
Tariff, Rp 255/person/day				
Annual Revenues	2,100	19,950	126%	51%
Annual Deficit, Total	-1,938	-19,501	-123%	-49%
Tariff, Rp 500/person/day				
Annual Revenues	4,117	39,107	247%	99%
Annual Deficit, Total	79	-344	-2%	-1%

SIMPLIFIED COMMUNITY SEWERAGE SYSTEMS

676. The investment costs for a simplified community sewerage system (SCS) to serve 100 families would be the same as given above for a CSC. Operational costs are estimated by BORDA to be Rp 45 for tools and maintenance plus salary for an operator, say Rp 400 per month in total. The charge to give a standard FIRR equal to the WACC would have to be Rp 290 per person per day.

677. If 70% of the investment was funded by an ADF loan (with 20% as RG equity and 10% from the community), the required fees per person per day to give the RG a return on investment equal to the WACC would be: (a) Rp 261 with the expected 5.02% mark-up on loan interest; (b) Rp 180 with zero mark-up; (c) Rp 231 with a mark-up of 3.4% which would equalize the present value of loan flows to the central and regional governments.

678. These results indicate that local funding of poverty based sanitation facilities need not be as expensive as is often assumed. As instructed, however, the three pilot projects are assumed to be funded as a grant from the ADF loan.

SCHOOLS

679. The costs of a school sanitation toilet block are expected to be some base Rp 15 million per school. On average, 20 such school facilities have been assumed per regional government. These facilities are assumed to be funded as grant from the ADF loan.

SLUDGE TREATMENT PLANT (IPLT)

680. A sludge treatment plant was designed by the Environmental Office in the Serang regional government in 2004. The base costs of the proposed works given in the study were Rp 12.6 billion, including access road. The capacity would be 90 m3 of sludge per day, which would be sufficient to serve 50% of the population in Kota Serang in 2014. Annual operating costs at full capacity would be 2005 Rp 200 million. The plant is expected to be funded by charges to private sludge truck operators who will be forced to use the plant instead of dumping the sludge in rivers etc as at present. Charges given below are all in constant 2005 prices.

681. Cash flow costs before debt imply that a charge per m3 of Rp 19,700 would be necessary to provide an FIRR equal to the WACC. This compares unfavorably with similar charges at eg Surabaya, where the charge is Rp 8/m3. The facility in Surabaya is some 15 years old, however, and charges do not cover full costs.

682. The charge in Serang could be lowered by the use of ADF funded debt. The nominal cost of the IPLT project including physical and financial contingencies would be some Rp 18.6 billion, less than 5% of the RG borrowing capacity. If 70% of this was funded by an ADF loan and the remainder as RG equity, the required charge per m3 to give the RG a return on investment equal to the WACC would be: (a) Rp 19,400 with the expected 5.02% mark-up on loan interest; (b) Rp 14 with zero mark-up; (c) Rp 17,500 with a mark-up of 3.4% which would equalize the present value of loan flows to the central and regional governments.

683. These charges are considerably below the equivalent charges per household assumed in the Environmental Office's feasibility study. The latter was Rp 250 per household per year. The highest charge of Rp 19,400/m3 calculated here is only Rp 13 per household per year, since households are expected to produce only some 0.7 m3 sludge per year (from 0.4 liters per capita per day).

K. SUB-PROJECT ECONOMIC ANALYSIS

1. WATER SUB-PROJECTS

684. WSSP water sub-projects have been evaluated in accordance with ADB guidelines. The ADB Handbook estimates these benefits from: (a) shadow priced cost flows; (b) value of non-incremental water; (c) value of incremental water; (d) health cost savings. An alternative way of looking at the same thing, but easier to explain to the layperson, is to add: (a) financial cash flow at economic prices; (b) avoided costs of obtaining water from other sources; (c) additional value of incremental water; (d) health cost savings. As demonstrated in WSSP1, both presentations produce the same final result. In order to save space, the results and explanation given here are based on avoided costs, however.

685. **Financial cash flows at economic prices** are the financial cash flows converted to economic prices at the domestic numeraire by the use of the following shadow prices: (a) foreign exchange (the SERF), 1.00; (b) unskilled labor, 0.70; (c) power, 2.0; (d) other local costs, 1.00. The share of costs in the first two groups is assumed to be 10% and 30%. The share of power is taken from individual PDAM operating costs and is between 5% and 10%. Taxes at 10% on investments are then deducted to give economic costs.

686. **Avoided costs** are estimated from survey results for each sub-project. Detailed data as shown in the SPARs are used but the overall picture is summarized in the following table. This shows the following input parameters: (a) the present average cost of obtaining water from traditional sources, including the value of time at 70% of the local unskilled wage rate; (b) average distance to sources used; (c) the percentage using electric wells, bucket wells and vendor water; (d) lpcd of vendor water use; and (e) vendor water cost per m3. Bottled

water costs are not included since, although many respondents purchase such water, the proportion is highest for PDAM connected customers.

Table 112: Economic Evaluation Parameters, Water Supply

Location	Meters To Source	% Using Electric Wells	% Using Bucket Wells	Well Depth Meters	Vendor Water % Using	Vendor Water lpcd /user	Vendor Water Rp 000 /M3	Cost of Time Rp/Hour	Full Cost Rp/M3
Serang	5.4	50%	27%	5.0	14.4%	7.1	40.0	2,625	2,390
Ciruas/Serang	1.9	77%	23%	5.0	0.0%	0.0	0.0	2,625	1,946
Banjar	2.4	57%	14%	15.0	0.0%	0.0	0.0	2,100	2,263
Soreang/Bandung	55.9	72%	6%	6.2	13.4%	4.6	75.5	1,894	3,799
Barru	110.6	42%	41%	4.2	0.0%	0.0	0.0	1,531	2,487
Bogor Timur	3.4	75%	13%	12.5	0.0%	0.0	0.0	3,063	2,386
Bogor Tengah	2.1	74%	7%	15.0	0.0%	0.0	0.0	3,063	2,239
Bogor Barat	2.1	74%	7%	15.0			0.0	3,063	2,239
Maros	28.8	9%	59%	7.2	0.0%	0.0	0.0	1,488	2,104
Jeneponto	38.8	9%	61%	3.5	10.6%	3.7	62.7	1,750	1,977
Palopo	4.5	42%	21%	4.0	0.0%	0.0	0.0	2,188	1,190
Pemalang	3.8	53%	0%	0.0	0.8%	2.5	15.0	0	1,398
Semarang	5.4	28%	0%	0.0	32.8%	3.3	15.0	2,625	2,068
Sidrap	4.2	90%	13%	5.7	0.0%	0.0	0.0	2,400	1,948
Tarutung/Taput	45.7	1%	15%	4.0	0.0%	0.0	0.0	4,200	2,754
Sipoholon/Taput	56.7	20%	21%	4.2	0.0%	0.0	0.0	4,200	3,308
Muara/Taput									3,007
Tapteng	111.3	4%	36%	2.6	11.4%	3.1	9.5	2,673	4,668
Simple Average	28.4	46%	21%	6.4	5.2%	2	12.8	2,440	2,454
Weighted Average	22.6	50%	16%	5.9	9.5%	2	23.1	2,281	2,432

Source: WSSP Socio-economic survey 2005.

687. **The value of incremental water** is estimated from a straight line demand curve joining the points of present and estimated piped consumption. While the costs of present consumption are derived from the survey data given, the volume is derived from piped water sales adjusted in accordance with the assumed price elasticity. The same price elasticity is used to estimate piped water demand as tariffs change and so the consumption estimates are internally consistent.

688. **Additional health benefits** are the decrease in health costs which can be expected when people move from a traditional to a piped water supply. Estimation requires estimates for WSS disease health costs and for the likely effects of change in water source and/or sanitation habits.

689. WSS health costs should be location specific but it is difficult to obtain local indicators, from which to make specific estimates. There are two main sources from which national indicators for health costs might be drawn, (a) WHO based DALY data; and (b) the results of the World Bank funded JUDP III study. Since these studies are not cross-sectional, it is necessary to use another source for the likely effects of change.

690. The costs of disease in terms of disability adjusted life years (DALYs), uses a methodology introduced for the WHO[17] in 1996 and promulgated by the World Bank in their 2000 World Development Report. The WHO publish data only by regions and the latest available international data is for 2002. With WHO assistance, the National Institute of Health Research and Development, Indonesia, has analysed available health data and estimated DALYs for Indonesia in 2004. Their findings have been further analysed by the consultants to determine the share of water and sanitation in the total.

691. Water related diseases can be separated into: (a) water borne, where water acts as the passive vehicle for the infective agent; (b) water washed, infections that decrease as a

[17] The Global Burden of Disease, Murray and Lopez, 1996. A DALY is defined by the WHO as the "present value of the future years of disability-free life that are lost as a result of premature death...or disability".

result of an increased volume of available water; (c) sanitation, infections related directly to excreta; (d) water based, where a necessary part of the life cycle of the infective agent takes place in a aquatic organism; (e) water related, infections which are spread by insects that breed in or bite near water. Obviously, these definitions allow for some overlap. They do, however, make it possible to separate out the WSS diseases which are likely to be decreased by increased access to piped water and/or sanitation. Essentially these WSS diseases are water borne, water washed and sanitation; they are not water based or water related. The latter include two of the major health hazards, dengue and malaria[18]. Data on DALYs lost to the different WSS disease types in Indonesia[19] are summarized in the following table. In order to put the WSS problem into context, the table also shows total DALYs caused by all forms of disease, injuries and death, the share of WSS determined diseases in those DALYs and corresponding data for other areas.

Table 113: Annual DALYs per 100 Population (Indonesia 2004, Other 2002)

Description	Indonesia			SE Asia	Africa	Europe	World
	Total	Male	Female				
Water Borne	692	691	693	1,343	3,581	95	1,049
Water Washed	30	37	23	27	89	9	231
Sanitation	2	2	2	50	169	0	46
WSS Determined	724	730	718	1,419	3,790	105	1,118
Other:							
- Water Based	0	0	0	0	198	0	27
- Water Related (incl. dengue/malaria)	250	245	256	420	6,668	3	893
All Causes	22,291	22,132	22,449	26,814	53,757	17,123	23,938
WSS as % Total	3.2%	3.3%	3.2%	5.3%	7.0%	0.6%	4.7%

Source: WHO

692. As can be seen, WSS disease costs in Indonesia are significantly below the regional and world average. One explanation for this would be the almost 100% boiling of water for human consumption. Another would be the substantial and heavy rainy season which moves pollutants towards the sea where they can do much less if any damage. The comparison with Europe, however, shows that further savings are available.

693. Several alternative methodologies can be used to estimate the value of a DALY, depending on the age profile and the intrinsic value of life assumed, ie whether based on earning potential or willingness to pay. The WHO do not suggest methods to calculate the value of a DALY but say that any intervention which saves a DALY at less than three times national per capita income can be seen as being cost effective. This would imply a present value per DALY in Indonesia of some US$ 3,543 and implies an annual cost of WSS diseases per person in Indonesia of US$ 25.6.

694. The JUDP III study, on the other hand, estimated WSS disease costs directly from hospital admissions, outpatient visits, home treatment and work-days lost, derived from survey data. The present consultants used the JUDP data and derived a 1999 cost of US$ 23.4[20] per person per year. This was accepted for use in the WSSP1 economic analysis. In 2005 prices it is US$ 26.2 per person, only some 2% different from the WHO based estimate. The provides an estimate for total annual costs of WSS diseases in Indonesia of US$ 5.7 billion, a figure which can be compared with a World Bank estimate of US$ 6.8 billion. The World Bank estimate is believed to have been made earlier when WSS DALYs were probably higher. In any case, given the order of magnitude of possible errors in the calculations, the two estimates can be seen as supporting each other. The low level of DALYs in Indonesia compared to other countries, however, does make the low level of investment in sanitation in the country more understandable.

695. The effects of changed water sources in Indonesia might be obtained from a detailed analysis of Susenas data, cross-referencing diarrheal disease with water source. It is not

[18] These are often incorrectly added into internationally quoted estimates of the costs of WSS disease
[19] Source: National Institute Health Research and Development, Indonesia
[20] If a WTP based VOSL was used, instead of a production based value, the 1999 cost per person would be US$ 75.8.

known if this has been done as yet and the present PPTA does not have the resources to do it. In its absence, there are three sources available to estimate the effects. A meta study performed for the WHO [21] found that in-house WSS could reduce WSS related mortality by 65% and morbidity by 25%. Second, a study on diarrhea prevalence in 8 Countries in Africa, Asia and Latin America concentrating on child morbidity found the results shown in the following table. A similar study for WSSLIC1 found the more detailed data given in Table 115. The largest effect, and one of the few which was statistically significant, was water boiling. As noted above, it is the prevalence of this water boiling in Indonesia which might "explain" the comparatively low level of WSS diseases in the country.

Table 114: Diarrhea, Water Supply and Sanitation in Urban Children

Description	**Diarrhea Prevalence (24 Hours)**		
	Sanitation Supply		
Water Supply	Poor	Intermediate	Optimum
Poor	25%	17%	14%
Intermediate	23%	20%	18%
Optimum	20%	18%	15%

Source: American Journal of Epidemiology, Vol 143, No. 6, 1996

Table 115: Reduction in Child Diarrhea Morbidity

Intervention/Background Variable	**% reduction**	**p value**
Water Supply Facilities		
Mixed Quality	9%	0.6040
Good Quality	28%	0.0007
Sanitation Facility		
Home Latrine	15%	0.0387
Sanitation Activities		
Boiling drinking water	48%	0.0101
Washing hands before child feeding	11%	0.1429
Social Involvement		
Village User Group (KPS)	2%	0.8392
Rural Womens' Group (PKK)	10%	0.1901
Mother's Education Completed		
Primary	7%	0.5028
Intermediate	26%	0.0160
Secondary	37%	0.0008
Tertiary	30%	0.1825

Notes: 1: The % reduction is 1 minus the adjusted odds ratio
2: The finding is statistically significant if $p < 0.05$
3. Source - WSSLIC1 Study

696. These studies give data only for children, which do not allow the economist to factor up to the total population. The only known study in Indonesia which does was a before and after survey also done under WSSLIC1. This separated the effects by mortality and morbidity and also those on users of the new system and others in the vicinity[22]. Users had a 25% drop in mortality and non-users a 10% drop. Similar decreases for morbidity were 15% and 5%. The net effect was a 13.2% drop in WSS disease costs following the provision of WSS interventions. This has been used here, as it was in WSSP1.

697. Total economic benefits of the water supply sub-projects are given in Table 116. The AIEC is the long run economic cost of water supply and does not include allowance for health benefits. Economic benefits start with financial cash flows at economic costs. Adding avoided costs normally increases the benefit but does not do so in many sub-projects since the costs of alternative sources are below those of piped water. Similarly, adding incremental water adds little since the large tariff increases required imply that there will be little. Health benefits increase the EIRR but to above the ADB assumed cut-off of 12% in only seven sub-projects.

[21] Esrey, S. A., J. B. Potash, L. Roberts and C. Shiff (1991), Effects of Improved Water Supply and Sanitation on Ascariasis, Diarrhea, Dracunculiasis, Hookworm Infection, Schistosomiasis, and Trachoma. WHO Bulletin OMS, Vol 69.

[22] Since WSS diseases are communicable, decreased disease in one family will decrease the likelihood of disease in a neighbor.

One of these fails the EIRR test when capacity building costs are included. NPVs are shown by project in the SPARs and sum to minus Rp 264 billion.

698. One factor which is not included in the ADB calculations is the convenience value or utility of piped as against traditional source water. In order to estimate this directly would require better and more costly contingent valuation survey techniques than were available. Instead, a calculation has been made of the increase to the present cost of alternative water sources, shown in the table above, which would be necessary to give an EIRR of 12%.

Table 116: Water Sub-Project Economic Benefits

Location	AIEC	EIRR Financial Cash	EIRR plus avoided	EIRR plus incr.	EIRR plus health	EIRR After Cap.	Utility Mark-up
	Rp/M3	Flows	costs	water		Bldg.	for 12%
Serang	4,672	6.9%	2.2%	2.2%	6.6%	5.6%	55%
Ciruas/Serang	7,173	7.6%	3.3%	3.3%	6.8%	5.6%	40%
Banjar	3,596	7.0%	6.1%	6.1%	9.8%	8.7%	35%
Soreang/Bandung	4,056	9.6%	13.2%	13.3%	17.5%	15.3%	0%
Barru	4,946	14.2%	2.5%	2.5%	8.0%	6.7%	45%
Bogor Timur	5,097	6.2%	2.1%	2.1%	5.4%	4.5%	65%
Bogor Tengah	9,687	2.5%	-0.8%	-0.8%	1.3%	0.9%	170%
Bogor Barat	5,920	18.7%	8.8%	8.8%	15.9%	13.3%	0%
Maros	3,338	18.7%	9.3%	9.1%	16.5%	14.0%	0%
Jeneponto	4,500	16.8%	4.3%	4.5%	10.1%	8.7%	35%
Palopo	5,900	6.1%	-2.1%	-2.1%	0.6%	0.2%	300%
Pemalang	6,132	3.8%	-0.4%	-0.4%	3.0%	2.4%	250%
Semarang	4,327	16.6%	4.4%	4.4%	10.2%	8.8%	25%
Sidrap	4,119	15.4%	0.9%	0.7%	5.4%	4.6%	70%
Tarutung/Taput	4,380	3.6%	5.8%	5.8%	8.8%	7.7%	40%
Sipoholon/Taput	4,402	5.3%	10.3%	10.3%	13.6%	12.1%	0%
Muara/Taput	3,198	10.5%	16.5%	16.5%	22.1%	19.6%	0%
Tapteng	3,720	11.2%	18.3%	18.3%	21.7%	19.6%	0%
Simple Average	4,954	10.0%	5.5%	5.4%	10.2%	8.8%	63%
Weighted Average	5,108	10.1%	4.8%	4.8%	9.2%	7.9%	74%

2. SANITATION SUB-PROJECT ECONOMIC EVALUATION

699. For water supply, the majority of the economic benefits are monetary willingness to pay by consumers. That is often not the case for sanitation projects, however, since consumers may not be able to fully appreciate the benefits or can be quite willing to pass on the external costs to others.

700. JUDP III estimated health benefits directly for particular types of sanitation projects and these were used as basis for the sanitation EIRRs calculated for WSSP1. This type of calculation is not possible for the present WSSP, however, since the sanitation projects being considered do not fall into the types evaluated, as shown in Table 117. The JUDP III EIRRs allowed for the costs of management, training, advisory consultants and public awareness programs. That for community septic tanks was surprisingly low. One reason was the short time-period assumed but extending this would not have increased the return sufficiently. JUDP III also included significant costs for management and awareness campaigns etc but the experience of Serang is that these are probably a necessity. Even excluding them, however, raises the EIRR to only some 4%. The finding is important since it is believed to be government and MDB policy to support community facilities such as these. It can be noted, however, that BORDA, who do have direct experience in the field, have ceased to support community septic tanks.

Table 117: JUDP III Project Generic EIRRs

Project Type	EIRR
Rubbish Collection/Disposal	26.2%
Toxic Waste Management	19.0%
Septic Tank Maintenance	23.2%
Community Septic Tanks (see below)	Neg.
Local Drain Treatment	14.9%
Diesel Vehicle Smoke Control	20.1%
CNG Large Bus Fuel	26.5%
LPG Small Bus/Taxi Fuel	17.0%
Environmental Protection & Pollution Control	
Inspection/Advisory Service	28.0%

Source: JUDP III Phase III Report, MMP, June 1994

701. In the absence of JUDP III data, it is thought best to use a technique developed for drainage projects in earlier IUIDP projects in Indonesia and formalized in an ADB ERD technical note[23]. This technique essentially asks how much of a known benefit would need to be allocated to the project in order to give the required 12% EIRR. In this case, the benefit is reduction in the WSS disease DALYs shown in Table 113 above. The shares, which are additional to direct financial benefits, are as shown below. As with water supply, benefits will not be limited to the direct beneficiaries and a mark-up of 30% has been included. The share required for CSCs is higher than those for the IPLT but attendance at the CSC will provide a direct health benefit whereas sludge treatment will affect people through its affect on the environment. The required shares are considered to be low enough to justify the projects on economic grounds.

Table 118: Sanitation Economic Benefits

Description	Community Sanitation Centre (CSC)	Simplified Community Sewerage (SCS)	Sludge Treatment Plant (IPLT)
Financial Benefit	Rp 500/trip	Rp 290/person/day	Rp 13,200/HH
Share Economic Benefit	23.0%	46%	2.1%

L. AFFORDABILITY ANALYSIS

702. Affordability is a most important concept but one which is difficult to define and even more difficult to put into practice. Firstly, it relates to a social consensus that all citizens should be able to consume a certain minimum of particular consumer items. Given the cost of those items, the required minima can be used to define a minimum income, which in turn can be provided in some way through a welfare state system. When countries do not have the ability or will to provide such a minimum income, however, the concept becomes significantly less workable.

703. In order to deal with this, international practice has been to consider what share of a person's income "should" be spent on particular items. In the case of water, a figure of 4% has gained significance. 5% is used similarly for water and waste water disposal, even though the costs of the two, if provided hygienically, are actually similar. The 4% number suffers from several other limitations. First is the question of whether it should be for all consumption or for some socially set minimum base requirement. According to the WHO this should be some 50 liters per capita per day, or around 7.5 m3 per household per month. Second is the very wide range in actual practice, which can range between less than 1% for the rich to 6% or more for the poor. This implies that consideration should be given to affordability for more than one social group. Third is the fact that much of the costs of water supply, particularly but not only for the poor, can be the time spent obtaining the water. Time is not included in standard percentage of income affordability calculations. If time were included, it would certainly show that public tap customers, and the non-connected poor, pay significantly above 4% for their water.

[23] Contingency Calculations for Environmental Impacts with Unknown Monetary Values, David Dole, ERD Technical Note No. 1, ADB, February 2002.

704. The affordability results are shown in Table 119 below. They indicate potential affordability problems, particularly at Barru, Maros and Palopo. The lower income of newly connected customers could also cause affordability problems at Banjar, Bandung, Semarang, Taput and Tapteng.

Table 119: Piped Water Affordability (Share Household Expenditures)

Description	Existing Customers 2006	Existing Customers 2011	New Customers 2006	New Customers 2011
Serang	0.9%	2.4%	1.6%	4.2%
Ciruas/Serang	1.5%	4.1%	2.6%	7.3%
Banjar	1.9%	3.5%	3.3%	6.2%
Soreang/Bandung	2.1%	4.5%	3.6%	7.7%
Barru	1.7%	7.2%	2.6%	10.9%
Bogor Timur	0.8%	1.9%	1.0%	2.5%
Bogor Tengah	0.8%	1.8%	1.0%	2.4%
Bogor Barat	0.7%	1.9%	0.9%	2.5%
Maros	3.0%	7.3%	4.4%	10.7%
Jeneponto	1.9%	6.6%	2.5%	8.6%
Palopo	3.1%	7.1%	4.8%	11.1%
Pemalang	1.2%	4.0%	1.2%	4.2%
Semarang	1.4%	3.0%	4.2%	9.1%
Sidrap	0.9%	3.2%	1.2%	4.3%
Tarutung/Taput	0.7%	3.7%	1.0%	5.4%
Sipoholon/Taput	0.7%	3.6%	1.0%	5.2%
Muara/Taput	0.7%	3.7%	1.0%	5.2%
Tapteng	1.3%	4.0%	1.5%	4.8%
Simple Average	1.4%	4.1%	2.2%	6.2%
Weighted Average	1.5%	3.9%	2.6%	6.5%

M. SENSITIVITY TESTS

705. The ADB ask that sensitivity analysis produces (a) sensitivity indicators (SI) and/or (b) switching values (SV). In practice, since the one is the inverse of the other, only one is strictly necessary and only the SV is shown in Table 120 below. The ADB also ask for indicators against both the NPV and the IRR. The former requires the value judgement of an assumed discount rate, on which international opinion is divided. The difference is normally minimal and so, in the interests of economy, only the SV against the IRR is shown here. The switching value against the IRR is the extent by which the indicator would have to change to give the required return, the WACC for financial analysis and 12% for the economic.

706. The ADB ask that sensitivity analysis should be conducted for the parameter or parameters which are considered to be most uncertain. Costs are important, of course, and it might be that the feasibility study has, say, under estimated these by some 20%. This is less important, however, than the benefit estimates which are sensitive to three important and inherently uncertain indicators: (a) willingness to pay to connect and/or to lower connection fees to affordable levels; (b) the political will required to raise tariffs by the amount necessary for cost recovery, often a factor of two or three; and (c) willingness to pay those tariffs. Therefore, the tables show the results of a 20% increase in project costs but a 40% decrease in project benefits. The latter may seem extreme but was the experience with the last round of MDB funding for PDAM expansion. The tables also show the effect of a one year delay in raising tariffs to the required level. This is less important than the willingness to raise tariffs per se.

707. Due to inherent uncertainties in the value of sanitation benefits, and the way in which those benefits have been estimated, calculation of sensitivity indicators for sanitation is not considered reasonable.

Table 120: Financial Sensitivity Analysis

Location	Base	+ 20% Costs		- 40% Benefits		1 Year Delay	
	FIRR	FIRR	SV	FIRR	SV	FIRR	SV
Serang	4.8%	2.2%	14.3%	0.4%	8.3%	3.7%	32.1%
Ciruas/Serang	4.8%	1.3%	10.4%	1.2%	6.2%	3.3%	24.5%
Banjar	4.5%	2.7%	12.4%	1.3%	7.2%	3.8%	30.1%
Soreang/Bandung	5.8%	2.9%	16.6%	0.9%	9.7%	4.5%	35.9%
Barru	9.6%	6.4%	25.9%	4.0%	15.0%	7.7%	42.9%
Bogor Timur	4.5%	1.9%	13.0%	0.1%	7.7%	3.4%	31.1%
Bogor Tengah	1.6%	-0.2%	2.8%	-1.4%	1.6%	1.0%	7.9%
Bogor Barat	13.8%	8.4%	23.5%	4.8%	14.2%	10.2%	35.0%
Maros	12.5%	8.3%	27.2%	5.4%	16.0%	9.7%	41.0%
Jeneponto	11.8%	8.2%	30.3%	5.7%	17.5%	9.4%	45.6%
Palopo	3.5%	1.6%	12.8%	0.1%	7.4%	2.7%	30.1%
Pemalang	2.0%	0.6%	7.1%	-0.3%	4.1%	1.5%	18.9%
Semarang	10.5%	6.1%	21.6%	2.9%	12.7%	7.9%	36.9%
Sidrap	10.6%	6.9%	25.9%	4.2%	14.8%	8.3%	41.5%
Tarutung/Taput	1.9%	0.5%	-4.5%	-0.4%	-2.6%	1.4%	-12.6%
Sipoholon/Taput	3.2%	1.6%	4.6%	0.5%	2.7%	2.6%	11.4%
Muara/Taput	7.1%	4.7%	19.1%	2.9%	11.1%	5.9%	39.1%
Tapteng	8.0%	5.8%	27.9%	4.2%	16.1%	6.8%	50.8%
Simple Average	6.7%	3.9%	16.2%	1.9%	9.4%	5.2%	30.1%
Weighted Average	6.6%	3.7%	16.4%	1.6%	9.6%	5.1%	31.4%

Table 121: Economic Sensitivity Analysis

Location	Base	+ 20% Costs		- 40% Benefits		1 Year Delay	
	EIRR	EIRR	SV	EIRR	SV	EIRR	SV
Serang	6.6%	3.3%	-16.3%	1.0%	-9.6%	5.1%	-33.8%
Ciruas/Serang	6.8%	2.0%	-10.8%	-1.1%	-6.6%	4.6%	-23.5%
Banjar	9.8%	7.2%	-8.9%	5.4%	-5.1%	8.2%	-14.2%
Soreang/Bandung	17.5%	12.6%	11.3%	9.2%	6.6%	13.6%	14.1%
Barru	8.0%	4.4%	-10.9%	1.9%	-6.4%	6.1%	-20.8%
Bogor Timur	5.4%	2.2%	-20.6%	0.0%	-12.3%	4.0%	-47.3%
Bogor Tengah	1.3%	-0.6%	-54.6%	-2.0%	-32.0%	0.7%	-162.0%
Bogor Barat	15.9%	8.8%	5.5%	4.5%	3.4%	10.9%	7.9%
Maros	16.5%	10.8%	7.8%	7.0%	4.7%	12.2%	10.5%
Jeneponto	10.1%	6.6%	-5.5%	-4.1%	-3.2%	7.9%	-8.6%
Palopo	0.6%	-1.1%	-67.8%	-2.3%	-39.6%	0.0%	-199.6%
Pemalang	3.0%	1.4%	-58.3%	0.3%	-33.8%	2.3%	-132.5%
Semarang	10.2%	5.5%	-3.7%	2.2%	-2.2%	7.5%	-6.4%
Sidrap	5.4%	2.2%	-20.5%	-0.2%	-11.8%	3.8%	-40.9%
Tarutung/Taput	8.8%	6.2%	-12.4%	4.4%	-7.2%	7.3%	-21.1%
Sipoholon/Taput	13.6%	10.4%	5.0%	8.1%	2.9%	11.3%	6.9%
Muara/Taput	22.1%	17.2%	20.7%	13.7%	12.0%	17.5%	21.9%
Tapteng	21.7%	17.9%	25.8%	15.1%	14.8%	17.9%	25.8%
Simple Average	10.2%	6.5%	-11.9%	4.0%	-7.0%	7.8%	-34.6%
Weighted Average	9.2%	5.6%	-15.9%	3.1%	-9.3%	7.0%	-44.6%

N. SUMMARY OF FINANCIAL AND ECONOMIC ANALYSIS

708. RGs have sufficient borrowing capacity to cover the proposed water and sanitation projects. This need not be necessary, however, since both sectors could be self-financing.

709. PDAM tariffs are only marginally above operating costs. PDAMs have continued to receive central government grant funded investments but data maintained remains insufficient. Seven of thirteen PDAMs have not had their accounts audited since 2002.

710. Seven PDAMs still have outstanding arrears owed to MOF. Agreement to reschedule these is in process. The effects of rescheduling and other payments on existing loans have been included in the financial forecasts.

711. Two PDAMs have a 2004 debt to debt plus equity ratio greater than 70%. A different two PDAMs have an existing DSCR lower than one.

712. Expenditures of non connected households average around 65% of presently connected households. As the former connect, average consumption will lower by some 17%.

713. Analysis of past PDAM tariff increases implies varying price elasticities, averaging -0.27.

714. Past capacity increases have not led to corresponding sales increases, implying that capacity limitations are not the main cause of low consumption.

715. National tariff guidelines include at least implicit consideration of each of the goals outlined in ERD Technical Note 10, ie good governance, financial sustainability, distributive justice, economic efficiency and fair pricing and do not disagree with any of them. Different PDAMs apply the national tariff guidelines differently and there are large differences in the ratio between the tariffs applied to different groups. Eight of the thirteen PDAMs have a low tariff for poor households, which on average are 65% of the normal household rate. In some cases, however, the average rate to the poor is increased by the operation of a minimum 10 m3/month policy. The tariffs to the poor are above short run variable costs and so supplying the poor does not cause the PDAMs a loss.

716. Existing tariff guidelines ask for average tariffs equal to partial full costs, which include debt interest but not a return on all assets. A new presidential decree asks for a reasonable profit. These requirements can be reconciled by the assumption that historic assets were provided by central government grants and the government does not wish that a "profit" be made on those investments.

717. In 2004, actual average tariffs in evaluated PDAMs covered cash flow costs. ERD TN 10 asks for financial sustainability into the future but does not specify how year by year tariff levels should be set. Therefore, cash flow cost recovery can be seen as being in compliance with the letter if not the spirit of TN 10. Average PDAM tariffs were 30% below PFC at historic prices, 60% below PFC at replacement prices and 100% below full costs. By 2011, however, when cash flow tariffs must cover debt repayments, there is little difference between cash flow and full cost tariffs.

718. The cash required 2006 to 2008 to provide counterpart funds would on some occasions require impractical tariff increases. Discussions with the PDAM and RG have led to a combination of RG cash or equity injections and tariff growth to the 2011 level. Where feasible, the injections have been assumed to be repaid from connection fees since there is no reason for the general tax payer to fund PDAM customers overall. On average, the advances would need some 1.4% of RG revenues and the equity 0.6%. Kota Banjar would have the highest shares, 3.7% each.

719. PDAM tariffs after 2010 have been estimated on an average annual basis as the maximum of partial full costs and that required for cash flow cost recovery. Overall, this implies that real tariffs must increase by a factor of 254%. In five PDAMs average tariffs in 2011 would be above Rp 4,000 per m3 in 2005 prices. Tariff increases would lead to consumption decreases which would take some time to be offset by income growth.

720. With the tariff increases and cash/equity injections assumed, the PDAMs would be in reasonable financial condition. The ADB defined debt service coverage ratio would be acceptable in all years.

721. A financial management assessment (FMA) of the executing agency, DGHS / PU, is unnecessary since they have passed similar assessments in the past. FMAs of the implementing agencies implied that significant support will be required.

722. Sub-projects have in several cases been cut down in size as a result of the consultants' assessments of demand and practical implementability. Even so, however, coverage assumed, although less than people would want, is more than they are willing to

pay for. Similarly, although ability to pay is higher than recorded willingness to pay, neither indicator implies that the sales at the high tariffs required can be simply assumed.

723. The WACC has been calculated separately for each PDAM since sources of funds differ. One average it is 1.2%. All sub-project FIRRs are above their WACC, even after the inclusion of capacity building costs. The weighted average FIRR is 5.8%. The similar AIFC before capacity building is 2005Rp 2,750 per m3.This can be compared to the average tariff of Rp 4040 required in 2011 to start loan repayment.

724. The CSC and SCS sanitation sub-projects are assumed to be funded by on-granting. The CSC financial analysis shows that the present charge per visit would give an FIRR of 2.7%. If the projects were funded by a sub-loan, the required charge per visit would depend on the GOI mark-up to the ADB loan, varying from Rp 332 with zero mark-up to Rp 413 with the mark-up of 5.02$ assumed for water supply. For SCS, a charge of Rp 290 per person per day would give an FIRR equal to the 1% WACC. Cost recovery charges would vary from Rp 180 with zero mark-up to Rp 261 with a mark-up of 5.02%.

725. The new sludge treatment plant at Serang is assumed to be funded by an ADF on-loan. A charge per m3 of Rp 19,700 would provide an FIRR equal to the WACC. Cost recovery charges would vary from Rp 14 with zero mark-up to Rp 19,400 with a mark-up of 5.2%.

726. At Rp 2,440per m3, the cost of water from traditional sources is below both the AIFC and the AIEC. The latter averages 2005Rp 5,100, much higher than the AIFC as a result of the higher assumed rate of discount which offsets the value of future water sales. The low cost of traditional water is the result of low vendor water use, high electric well use and reasonably shallow wells. These imply little water carrying by women and children in the sub-project areas.

727. Health benefits have been estimated from national DALY data. These imply that water and sanitation health costs in Indonesia are well below the regional average.

728. Economic benefits include financial cash flows at economic costs, avoided costs, incremental water and health benefits. These give base EIRRs, which average 9.2%. Adding capacity building costs lowers that to 7.9%. Including capacity building, only six of the 18 sub-projects have EIRRs above the ADBs 12% cut-off.

729. Piped water does have a convenience benefit which people are willing to pay for but this is not included in standard ADB water supply economics, possibly because it is difficult to estimate. The consultants have reversed the question and estimated what that benefit would have to be as an addition to the direct costs of existing water supplies in order to give the required 12%. In general, the consultants would suggest that anything below 100% is arguable. This would pass all projects except: Bogor Tengah, Palopo and Pemalang.

730. The economic analysis of sanitation projects was estimated as the percentage of the share of health costs which would have to be reduced. This was 23% for CSCs, 46% for SCSs and 2.2% for sludge treatment. These health benefits are additional to the assumed financial benefits.

731. Affordability would be a problem for several sub-projects. The household bill as a share of expenditure in 2011 would be 3.8% on average for existing and 6.5% for new customers. Three projects would have the share for the former above 4%, the standard cut-off point. All but three would fail for new customers.

732. The project is not particularly sensitive to a 20% increase in costs and one year's delay in benefits. The former would lower the FIRR below the WACC for only two projects; the latter none. Similar figures for the EIRR are five and two.

733. As might be expected, however, the project is sensitive to assumptions related to revenues or benefits. These include: willingness to pay for connections; willingness to increase tariffs to cost recovery levels and willingness to purchase water at those levels. In the sensitivity analysis all of these have been combined into a single parameter and the effects of a 40% decrease in benefits has been calculated. This would lower the FIRR below the WACC for nine of the eighteen sub-projects and only two of the sub-projects would have EIRRs above 12%.

IX. IMPLEMENTATION ARRANGEMENTS

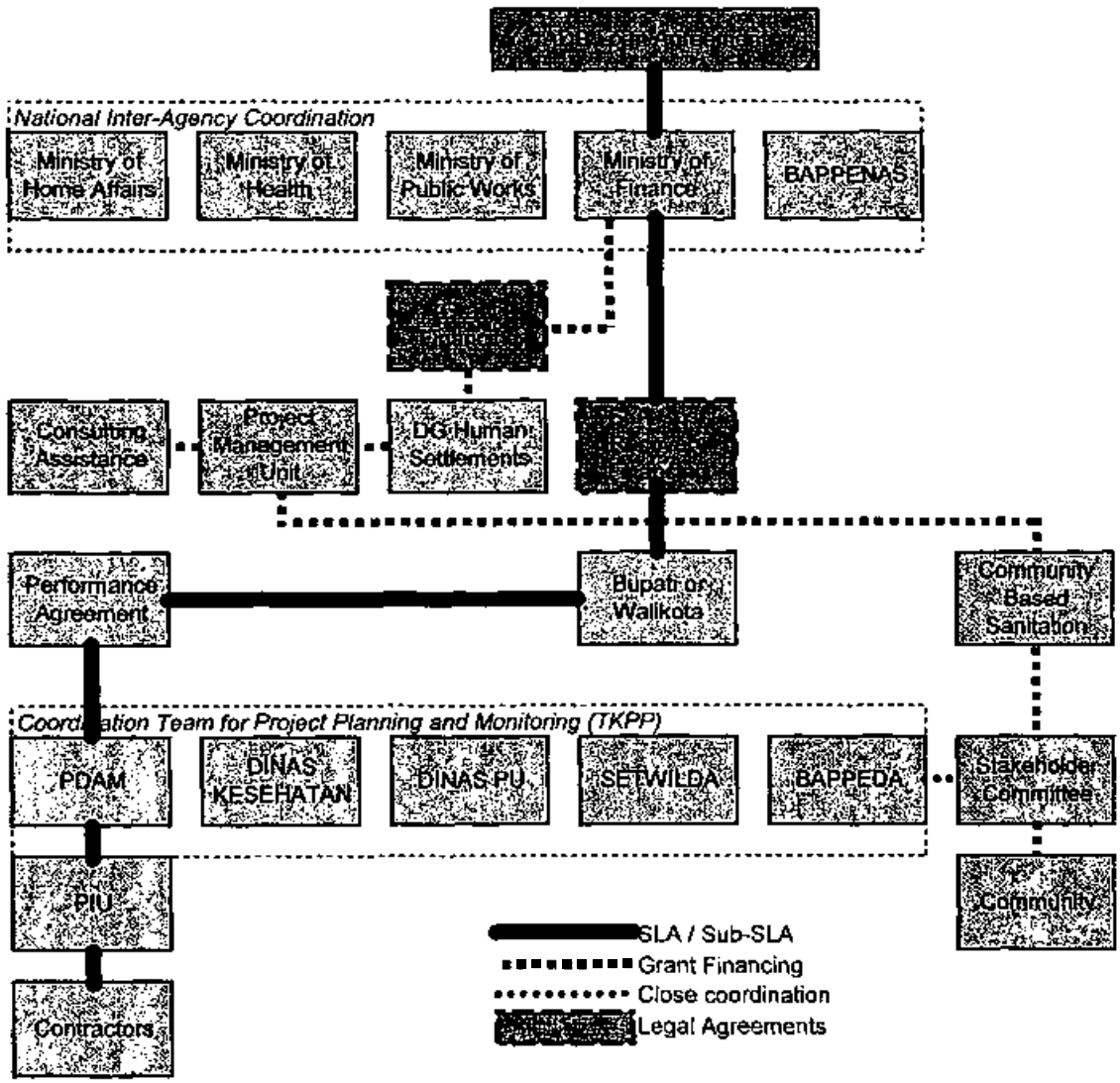
A. ORGANIZATION

1. PROJECT STRUCTURE

734. The project organization structure is such that for the on-lent portions of the ADB Loan, the Ministry of Finance will prepare a Sub-Loan Agreement directly with the Regional Government as represented by the Bupati (Walikota). The Bupati (Walikota) will in turn prepare a project related Performance Agreement with the PDAM determining the conditions under which the funds will be allocated for water supply facilities.

735. For grant funded works including the Community Based Sanitation components and the Consulting Assistance, funds will be directed from the Ministry of Finance to the Executing Agency, the Directorate General of Human Settlements (DGHS). The Community Based Sanitation works will be implemented direct through the DGHS. This work will be coordinated with the Stakeholder Committee at the local level.

Figure 20: Outline Arrangements for Implementation



736. At the Central Government level a National Inter-Agency Steering Committee will be formed which will include representatives of Ministry of Finance, Ministry of Public Works, BAPPENAS, Ministry of Home Affairs and the Ministry of Health.

737. At the Regional Government level a Coordination Team for Project Planning and Monitoring (TKPP) will be set up which will chaired by BAPPEDA and include representatives of the local Public Works office, the Regional Secretariat, the local Health office and PDAM. This team will coordinate its activities with the Stakeholder Committee.

738. A Project Management Unit will be set up at Central Government level within the Executing Agency, DGHS. This unit will direct the Consulting Services and coordinate the implementation of the project works with the Project Implementation Unit, which is set up within the PDAM.

739. At Central level the PMU will have the following tasks and responsibilities:

- Coordinate the activities of the PIUs in the PDAMs.
- Coordinate the activities of the Stakeholder Committees, particularly with regard to the community based sanitation elements of the Project.
- Advise on procurement related matters.
- Select and manage the Consultants for:
    - DBO contract preparations,
    - Project management, and
    - Institutional development and capacity building.
- Coordinate activities with the Quality Control Consultants to ensure best practices in construction activities, consulting services and project financial management.
- Review specific reports, with special regard to environmental and social development activities, and forward a copy to the ADB.
- Ensure that all relevant ADB policies and guidelines are complied with particularly procurement, financial management and safeguards against corruptive practices and negative social and environmental impacts.
- Prepare periodic reports, such as progress and audited financial reports, to the ADB as required.

740. The Regional Governments will provide staffing, accommodation and facilities for a Project Implementation Unit located in the PDAM. The total number of staff to be assigned to the PIU is (insert no. e.g. eight) persons. In addition the PIU will accommodate the DED (where necessary) and Supervision Consultant staff who will be procured direct by the Regional Government. The Project Management, Institutional Development and Capacity Building Consultant who will be procured by, and under the direction of, the Executing Agency will also provide one full time specialist Consultant to work within the PIU.

741. The tasks and duties of the PIUs will include:

- Where necessary prepare documentation and procure project contract packages, including local consulting services, as part of the project.
- Direct and administer the execution of the project contract packages.
- Carry out necessary surveys and gather data as is necessary and required as part of the PPMS.
- Monitor and report to PMU on compliance with Loan Covenants on a bi-annual basis.
- Prepare periodic reports including progress and financial management reports for submission to the PMU. PMU will collate these reports and forward them to the ADB.
- Review specific reports as necessary, particularly social assessment and environmental reports, and ensure actions as outlined in the reports are carried out at the local level. Ensure that all relevant ADB policies and guidelines are complied with particularly procurement, financial management and social and environmental safeguards.

- Ensure compliance with quality and best practices of consultancy services and physical works carried our by contractors.

B. CONTRACT PACKAGING AND PROCUREMENT

742. The entire water supply works will be constructed in a single Design, Procure, Build and Operate (DBO) contract. DBO implementation brings all three functions together into a single contract. The contractor will build new facilities which will be owned by the municipality, but which the contractor will commission and then operate. The period of operation of the water treatment plant will be two years during which time the Contractor will work jointly with the PDAM. The contractor will be required to both rehabilitate the current distribution system and develop the new distribution system working with the PDAM. In parallel with the rehabilitation and development of the distribution system the Contractor will be required to mount a joint marketing campaign with the PDAM so that a minimum of say 80% of the design assessment for new connections will be added to the system over the two year period of joint operation. The Contractor must bring UFW to an acceptable level and the operation of the system to a level whereby drinking water is supplied to customers on a 24 hour basis and with adequate pressure. The system would therefore be brought to the level required by PP16/2005. The DBO contract would include a bonus paid on achievement of the required level of operation. The contract will be procured on an ICB basis.

Table 122: DBO Contract Packaging and Scheduling – US$ Millions

Contract	Year of bid	Type	Rp Million	US$ 000	ADB Portion
Kab. Serang WS DBO	2006	ICB	106,699	$10,074	$7,052
Kab. Bandung WS DBO	2006	ICB	209,887	$19,774	$13,842
Kab. Barru WS DBO	2006	ICB	31,838	$3,009	$2,106
Bogor Timur WS DBO	2006	ICB	93,021	$8,775	$6,143
Bogor T & B WS DBO	2006	ICB	81,569	$7,695	$5,387
Kab. Maros WS DBO	2006	ICB	51,030	$4,794	$3,356
Kab. Jeneponto WS DBO	2006	ICB	31,603	$2,992	$2,094
Kota Palopo WS DBO	2006	ICB	70,237	$6,610	$4,627
Kab. Tapteng WS DBO	2006	ICB	36,968	$3,480	$2,436
Total DBO			712,851	$67,203	$47,042

Note: All ADB funding for the DBO Contracts will be from the OCR Loan. ADF funding is reserved for Sanitation, Institutional Development and Capacity Building (including Public Health and Hygiene and Gender Development)

743. The sanitation works including the Community Sanitation Centres, the Simplified Community Sewerage Systems and the School Sanitation Centres will be developed using a community based approach involving the local community in the development and construction of facilities.

C. TECHNICAL ASSISTANCE

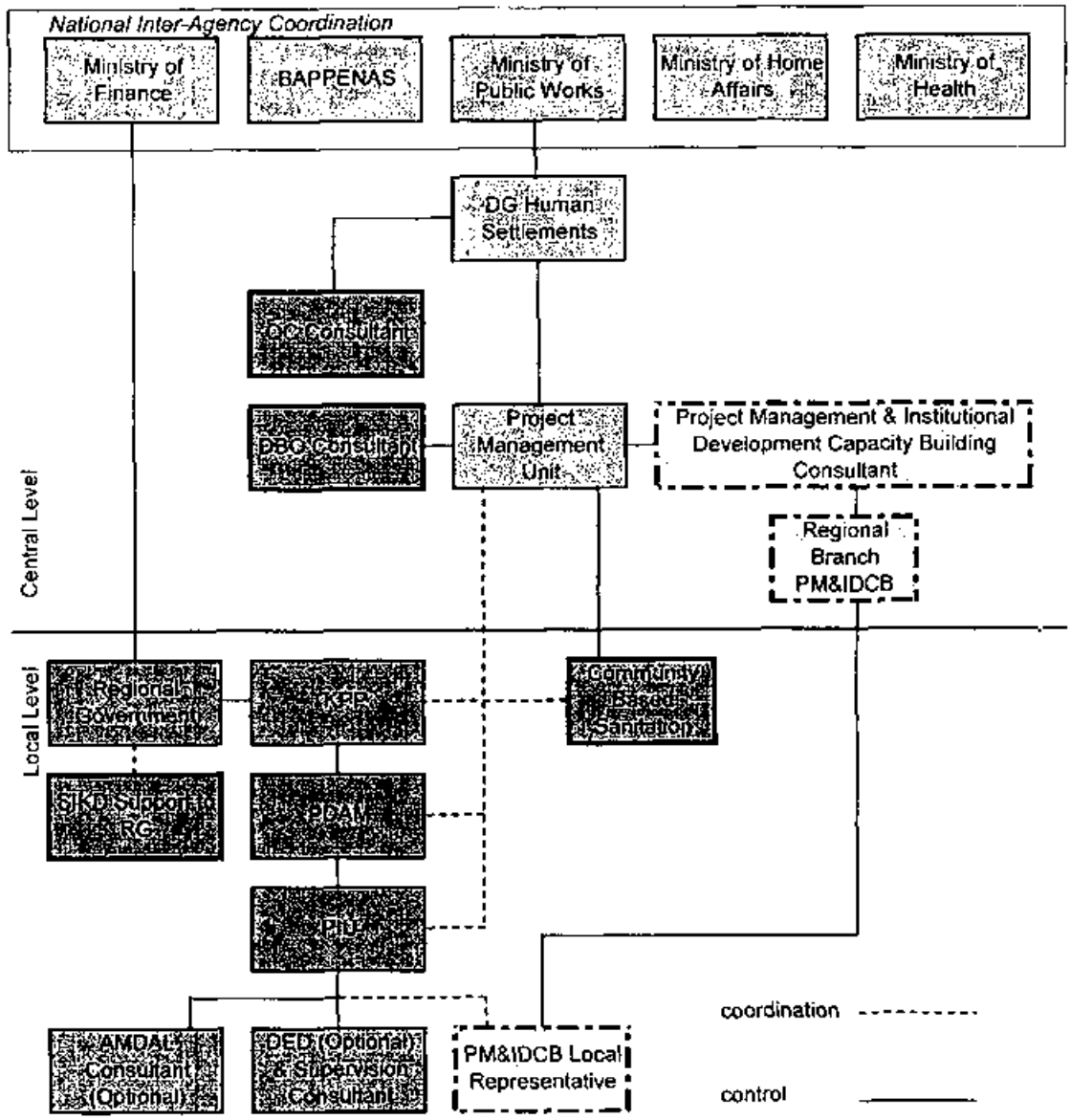
1. GENERAL

744. The areas of expertise of Technical Assistance will include:

- DBO contract preparation, bidding and execution.
- AMDAL preparation and execution.
- Project management (PM), including contract administration, civil and mechanical engineering expertise and financial control.
- Institutional development and capacity building (IDCB).
- Quality control (QC) over project execution, performing both physical works quality audits and also financial audits.
- DED (Semarang only) and Construction Supervision consultants within the PIU.

- Data Collection and Analysis System (SIKD) support to RG (not funded from WSSP loan).

Figure 21: Framework for Technical Assistance



2. DEVELOPMENT CONSULTING

DBO CONTRACT PREPARATION

745. The recruitment of the DBO Contract Preparation Consultant should commence during the second quarter of 2006, possibly after the Tim Penilai have completed their review of the SPARs and RG loan requests. This Consultant will be required to:

- Prepare pre-qualification documents and guidelines on short-listing of contractors.
- Prepare outline designs and general arrangement drawings for proposed water supply works.
- Prepare schedules of quantities based on outline designs. These schedules to be arranged for use:
  - in selection of the successful contractor during the bid evaluation process, and

  - in execution of the contract works on a schedule of rates basis.
- Schedules of quantities to include for:
  - Construction of the facilities.
  - Operation and maintenance of the WTP and distribution system for a two year period concurrent with development of the distribution system.
  - Training of PDAM staff in the operation and maintenance of the complete system.
  - House connection public campaign.
  - House connection installation costs for a contracted number of customers.
- Prepare performance based specifications for the works with salient criteria to include:
  - Area to be serviced and minimum number of connections to be added to the system (i.e. 80% of the WSSP design figure).
  - Drinking water quality.
  - 24 hour service.
  - Adequate pressure.
  - UFW reduced to target figure – 15% to 20% for new distribution area, 5% to 10% reduction on current figure (agreed during year 1) for existing distribution area.
- Compile bid documents to include:
  - Definition of the Contract Service Area including
    - Definition of boundary.
    - Description of sites proposed for use in the Project.
    - Details of any existing facilities.
  - Outline of the scope of works to be executed.
  - Performance criteria to be achieved.
  - General arrangement drawings.
  - Schedules of quantities and rates.
  - Technical standards to be observed in the construction of the works.

AMDAL PREPARATION

746. AMDAL Consultants will be procured using GOI standard Terms of Reference for these Consulting services. Staffing for these studies generally consists of Team Leader and Co-Team Leader who are environmentalists, supported by chemical engineer, electrical engineer, social expert, water quality expert and biological experts. The total national specialist allowance is 12 person months and the cost Rp400,000,000 (US$40,000) per study.

3. PROJECT MANAGEMENT AND QUALITY CONTROL CONSULTING

PROJECT MANAGEMENT

747. The recruitment of the Project Management Consultant should commence immediately the Loan has been signed. As indicated in Figure 21, this consultant would be based in Jakarta working alongside the PMU. It is also proposed that the Consultant have a branch office in Makassar. Additionally the Consultant would have one staff resident in each of the Project locations working alongside the PIU staff. This Consultant will be required to:

- Maintain a master schedule of all Project activities and monitor performance against progress, identifying problem areas and working with the PMU and PIU to solve these problems.
- Monitor financial performance of the Project and report to PMU as necessary.
- Coordinate the activities of the Stakeholder Committees, particularly with regard to the community based sanitation elements of the Project.
- Ensure compliance with quality and best practices of consultancy services and physical works carried our by contractors. This work would include design review and checking responsibilities.
- Advise on procurement related matters.
- Coordinate activities of all Consultants working on the Project to ensure optimal and effective utilization of resources.
- Coordinate activities with the Quality Control Consultants to ensure best practices in construction activities, Technical Assistance and project financial management.
- Review specific reports, with special regard to environmental and social development activities, and forward a copy to the ADB.
- Ensure that all relevant ADB policies and guidelines are complied with particularly procurement, financial management and safeguards against corruptive practices and negative social and environmental impacts.
- Carry out necessary surveys and gather data as is necessary and required as part of the PPMS.
- Monitor and report to PMU on compliance with Loan Covenants on a bi-annual basis.
- Prepare periodic reports, such as progress and audited financial reports, to the ADB as required.

Quality Control

748. The Quality Control Consultant would be a separate and independent Consultant who is recruited through a higher level office in the DPU. The Consultant would ensure quality control of works in two areas:

- Construction of physical works including random checks of works to ensure that specified technical standards are being observed in Construction; and
- Contractual and financial audits to ensure that corrupt practices are not being employed in the execution of the Project works.

4. Institutional Development and Capacity Building Consulting

749. Although designated as a separate Consultant it is expected that the Project Management and the Institutional Development and Capacity Building Consultants will be employed under a single major contract. The Consultant Team Leader would be expected to be a Project Management specialist and be responsible for direction and management of the Consulting Team as a whole. The IDCB Consultant would be responsible generally for the implementation of the FOPIP and LIDAP along with the development and implementation of the Public Health and Hygiene activities. This Consultants tasks would include:

- Local Institutional Development Action Plan activities for:
    - Water Supply
        - Mobilize Leadership and Communicate Action Plan
        - Clarify the Overall System for Sustainable Service Delivery
        - Improve Resource Acquisition and Allocation

- Increase and Improve Means of Service Delivery
- Information Management and Planning
- Increase Accountability
- Improve Legal Certainty and Enforcement
- Upgrade Set of Local Legal Instruments
- Improve Human Resources Development at Sector level

o Sanitation

- Clarify the Overall System for Sustainable Service Delivery
- Improve Resource Acquisition and Allocation
- Expand and Improve the Means of Service Delivery
- Information Management and Planning
- Increase Accountability
- Improve Legal Certainty and Enforcement
- Upgrade the Set of Local Legal Instruments / Framework
- Improve Human Resources Capacity at Sector level

- Financial and Operational Performance Improvement Plans:
  The performance of the PDAM depends upon factors which are under their control and others which are not. This plan concerns those factors under the control of the directors and personnel. The Plan is based mainly on the project objectives and activities, the results of an organizational audit conducted by survey among PDAM personnel, and the opinions of senior PDAM managers and the consultants. The work includes:
  - Training programs
  - Establishment of an internal Performance Improvement Team (PIT)
  - Annual review and update of the Corporate Plan including its indicators and targets
  - Annual benchmarking and associated information system improvements
  - Implementing annual customer satisfaction surveys
  - Establishment of a complaints receipt and processing function
  - Implementing routine employee perception surveys
  - Implementing a revenue enhancement program
  - Implementing a water loss reduction program.

750. In addition it is proposed that each of the participating PDAMs seek short-term improvements in their financial performance through the introduction of basic business procedures by means of an Immediate Action Plan as outlined in the SPAR documents. With the exception of meter exchanges, none of the recommendations requires capital investment.

5. TECHNICAL ASSISTANCE COSTS

751. Estimates for WSSP Technical Assistance manmonths are shown below.

Table 123: WSSP Technical Assistance

Services	International (person months)	National (person months	Estimated Base Cost US$ Total	Remarks
DBO contract documents	5	31	$252,600	8 contract documents
AMDAL	0	36	$120,000	3 locations
Project Management	54	432	$3,492,000	
Quality Control	12	60	$564,000	
IDCB	108	1,242	$7,000,000	
Total	179	1,801	$11,428,600	

752. The detailed breakdown of costs for Institutional Development and Capacity Building Consulting is included in Table 26 and Table 33.

753. Apart from the AMDAL Consultants who are required in Bandung, Bogor and Palopo, the costs are based on service to all 8 project locations. Decisions have not yet been made on who will pay for these services and it is unlikely that any decisions will be finalized until Loan Agreement. It is expected, however, that the SIKD will be funded from a separate sector loan to GOI and will be passed on as a grant to the RG's.

6. FLOW OF FUNDS

754. The primary fund flow arrangement is from the Central Government, through the Regional Government to the PDAM. The Regional Government will be required to have a formal Performance Agreement with the PDAM which clarifies conditions for use of the funds, agreed performance targets and improved autonomy of PDAM.

Figure 22: Flow of Funds – PDAM

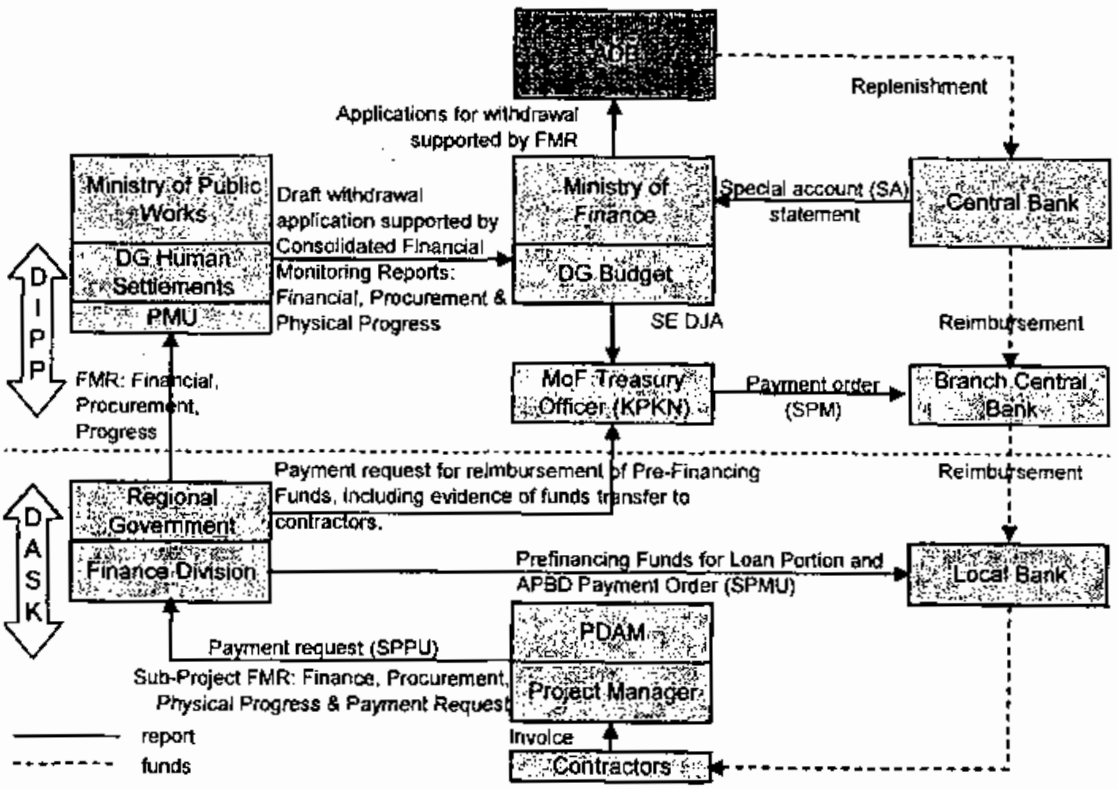
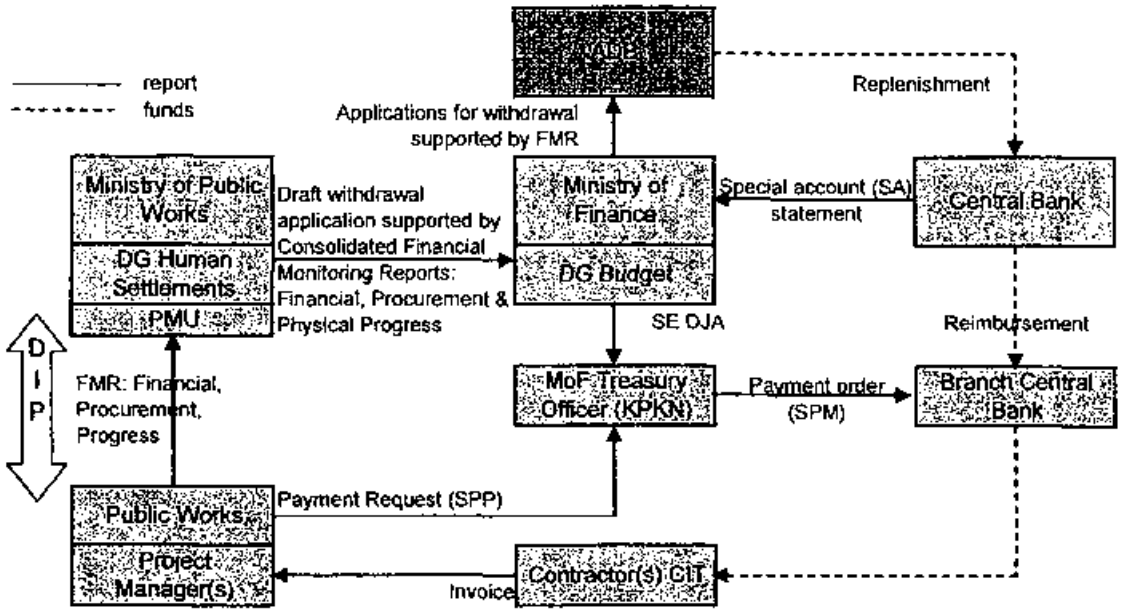


Figure 23: Flow of Funds – Central Level



D. IMPLEMENTATION SCHEDULE

755. From a timing viewpoint the DBO contract preparation and AMDAL Consulting should be initiated in parallel with the loan negotiations. The project management, construction supervision and IDCB expertise may be provided under a second package. The QC consultant should be separate from others and act as an independent check, not only on the DBO contractor's work but also the work of the PMU and PIUs.

756. The proposal for the Project locations is therefore that the DBO contract be signed at the same time as the loan becomes effective and the costs of the DBO preparation work might either be included as part of the counterpart contribution, or alternatively retroactive financed. The DBO contract would include not only construction of the new intake and production but also rehabilitation and extension of the distribution system. The contractor would also be expected to market the new water supply services and install a minimum of around 80% the Project proposed new connections during the period of the work on the distribution system. When the system is fully operational it would be handed over to the PDAM over a period of three months. This period would allow full handover including all as-built drawings, operations manuals and customer records updating.

757. Since an AMDAL is also required for the development of the water source in Kabupaten Bandung, it is proposed that this also be prepared in parallel with loan negotiations. The cost of the AMDAL would be considered as part of the counterpart funding for the project or alternatively retroactive financed.

X. PROJECT FRAMEWORK AND RISK

A. GENERAL

758. The design and monitoring framework (formerly termed Logical Framework) for the project (see attached Table 124) summarizes the objectives of the project and the chain of cause and effect relationships presumed to prevail. At its simplest, it says (starting from the bottom left hand corner of the table – the "design summary column"):

- By providing certain inputs and performing certain activities - such as procurement of designs, works and services - supervision, management, audit etc, the outputs (the next higher component of the intended design) specified will be delivered;
- Outputs (distribution system expansion, provision of on-site sanitation facilities etc) as designed should achieve the outcome specified; and
- If the project outcome or immediate objective (expansion of water and sanitation services) is fulfilled, the intended project impact will be achieved; and
- The project resulting impact (or long-term objective) is improved water and sanitation services in the participating regional governments, with attention to low-income communities.

759. Each design summary component can be very intricate and have different meanings for different persons, so it is important to have performance indicators for each design. These are to the right in the second column headed "Performance Indicators". Performance indicators and the data needed for their construction should be as simple, measurable, accessible, relevant and timely as possible. Hence the framework in the third column, "Data Sources", summarizes from where and how the performance indicators are obtained.

760. The final column, "Assumptions and Risks", summarizes influences which may help or hinder the design, resulting in the next higher design. Assumptions and risks need explicit management.

B. BASIS – IDENTIFICATION OF A SECTOR PERFORMANCE PROBLEM OR OPPORTUNITY

1. WATER SUPPLY

761. The imperative in participating Regional Governments (RGs) is sustainable expansion of piped water supplies. With the exception of Semarang, the problem is one of coverage, before any other. Coverage in the Project locations is low. In the proposed Project areas it is around 13% which is well below the national average of 39%.

762. What is the cause of this low coverage? Increasing difficulty in obtaining satisfactory water sources, low labor productivity, high water losses, poor management and ineffectual governance have all contributed to a vicious cycle of poorer service, lower willingness to pay and consequent ever lower performance. And all at a time of rising expectations as to the level of service government should be providing.

763. A low state equilibrium is then reached. Poor governance means low transparency in how the water enterprise (PDAMs) resources are being used while low accountability reinforces stakeholder perceptions that providing further resources to the PDAM is not the solution. This lack of trust is especially evident in tariffs that are set with little reference to costs.

764. How to achieve the objective of increased coverage? Breaking out of this cycle requires provision of an opportunity for investment in physical aspects as well as the institutional arrangements, and making use of a latent willingness of the community to pay for water supply because its benefits are immediate and private. A virtuous cycle of improved

service, increased willingness to pay and so a greater allocation of resources must be established through project outputs.

2. SANITATION

765. Poor sanitation impacts negatively on public health, with the burden falling disproportionately on the poor. But the benefits are unclear to a household of any payment the household makes to the government to collectively solve "the problem". The benefits are mostly misunderstood and undervalued; the costs are very real but many are external to the polluter. The government then has little incentive to act in the collective interest on sanitation matters, especially when good sanitation involves improved coordination among a wide range of actors and the changing of individual behavior.

766. Householders firstly need facilities to safely remove excreta and urine from their immediate proximity – as well as behavior change – such as hand-washing and personal hygiene practices that aid this removal. The waste must then be stored and treated "on site" or transported safely to "off-site" treatment facilities. Subsequently the effluent from the treatment must also be disposed of safely into the environment. Finding and implementing "the solution" requires coordination of a much wider range of actors than does water supply.

767. Lack of leadership in devising collective solutions, communicating and planning public investments and the associated effort of structuring institutions frustrates efforts to significantly improve sanitation conditions in urban areas of Indonesia, the participating RGs being no exception. The "default" option of placing responsibility for sanitation (broadly defined) with PDAMs has served no-one well. Poor coordination, lack of leadership and low community awareness lowers access of the community to improved sanitation. The cause of the coordination, communicating and planning problems is largely rooted in governance arrangements, where the local elite have little incentive to consider the need of the broader community. But, with introduction of decentralization in 2001, local governance arrangements are changing rapidly in Indonesia.

768. An opportunity is now available to put sanitation onto the RG's agenda, where it is firmly placed under decentralization laws. A wider range a solutions must be sought than for water supply, starting with creation of clear leadership and coordination to guide a range of nascent interventions in community sanitation and public health. Creation of an effective RG level "Sanitation Advisory Board" or similarly named group to lead, communicate and help plan interventions is seen as critical.

769. Help is required to assist this local leadership group to promote a range of solutions (ranging from children's behavior to sludge treatment plants) that, although regarded as "minor", are successful, and so likely to be sustained, replicated and further developed.

3. INSTITUTIONAL DEVELOPMENT AND CAPACITY BUILDING

770. While provision of water supply and sanitation works are essential to expanding coverage, sustained provision of planned services or growth in access is unlikely if the governance of the sector and the service providers in it are not reformed, along with their financial and operational performance. Current governance and management arrangements need reform to ensure the water supply and sanitation sector responds more to the community needs, to reorient it to more efficient and effective provision of services and to ensure those services are fairly distributed within the community.

C. INPUTS AND ACTIVITIES REQUIRED TO DELIVER DESIGN OUTPUTS

771. The amount of input and arrangement of activities (civil works, equipment, capacity building and other services, training etc) depends on the outputs required and capacity of the Implementing Agencies (IAs). The capacity of IAs is expected to be low, suggesting the contracts should be larger, thus lessening the administrative burden, improving coordination and providing greater opportunity to improve quality. The performance of the Executing Agency in managing the inputs is also an important factor in project success.

772. There is a problem with typical management arrangements. A typical arrangement of having a Project Management Unit (PMU) and a cascade of Implementation Units (PIUs) staffed entirely by public employees is problematic. The typical Unit employee works under civil service terms and conditions, operating with poor quality information, and no performance management. The few incentives to work in these Units are short term and opportunistic. The project management skills acquired by personnel in their time in the PMU / PIU are often not valued in the core of government. And advisory support from consultants is often not valued, with the consultant having little authority or accountability.

773. Outsourcing to a greater degree than normal could improve both performance and accountability. Simultaneously improving the management information system (the PPMS) would reinforce achievement of the same ends.

Table 124: Design and Monitoring Framework

REF	DESIGN SUMMARY	PERFORMANCE TARGETS	DATA SOURCES/ REPORTING MECHANISMS	ASSUMPTIONS AND RISKS
IMPACT				
IM1	Lower incidence of diarrhea	Reduce to 75% of current figure in project area by 2010	Annual health statistics	• Correlation between good sanitation and good health is robust • Health statistics are accurate and consistent
IM2	Provide efficiently economic infrastructure	Cost per HH served is less than: • WS: Rp6.4M/HH • Sanitation: Rp3.0M/HH	Project records in PPMS	
OUTCOME				
OC1	Increased access to improved water services for urban population	Increase number of persons accessing piped water from 25% to 53% by year 2010	Annual performance audit and evaluation, based on coverage indicators in the PPMS i.e. new connections, MCKs and sewerage systems operational	• Appropriate use of water and appropriate hygiene behavior in house • Sanitation improvements fully utilized
OC2	Increased access to improved sanitation services for urban population	Improved sanitation services provided to 110,000 persons by year 2010		
OUTPUTS				
OP1	Cost reflective average water tariffs	Operating ratio more than 100% within 2 years	Indicator in Benchmarking System	• Regular tariff increases are politically acceptable
OP2	Reduced NRW	NRW reduced by 2% per year in period 2007 to 2010	Indicator in Benchmarking System	• Incentives for maintaining high water losses removed.
OP3	Improved corporate governance of PDAMs	A 'good governance index' composed of 7 criteria. Baseline score year 2006 and target year 2010 to be determined.	Annual survey of about 10 key informants in the RG	• Owners trust Board of Supervisors • Directors responsive to demands of Board
OP4	Increased awareness among decision-makers of sanitation benefits	Annual increase in sanitation budget more than 5% for 2006 to 2010	Indicator in PPMS	• Sanitation will receive more attention and DPRD will increase budget.
OP5	School sanitation improvements	200 new water supply connections and 200 new toilet blocks by 2010	Annual count for PPMS	• New facilities are allocated to children and they make use of these
OP6	Increased safe disposal human waste	Effluent from IPLT passes environmental standard	Operation records of IPLT	• Regulations on indiscriminate dumping are enforced

REF	ACTIVITIES	INPUTS
1	**WATER SUPPLY WORKS**	
1.1	Rehabilitate existing water supply facilities Milestones: (1) Bid docs complete (2) Contractor mobilized (3) Facilities handover	• Bid documentation • Civil, hydraulic, electrical & mechanical works
1.2	Provide measuring equipment enabling performance contracts with PDAM management. Milestones: (1) Bid docs complete (2) Equipment installed (3) Equipment in use for performance assessment systems	• Design and install meters etc. • Design and procure technical support
1.3	Instigate a program to reduce non-revenue water (NRW). Milestones: (1) Decree for Surveys teams (2) Budget for work (3) Equipment procured (4) Z% target reduction in NRW by 2010	• "Cadastre" surveys • Customer meter program • Zoning etc
1.4	Incremental production and network expansion to reach access targets set in SPAR Milestones: (1) Contractor(s) mobilized (2) Production designs complete (3) Production works complete (4) Distribution Network designs complete (5) Network expansions complete	• DBO tender docs • DBO contractor • Supervision and hand-over consultants
2	**SANITATION WORKS**	
2.1	Sanitation awareness campaigns targeted at (1) decision makers (2) civil society and (3) community leaders and households Milestones: (1) Stakeholder Committee approves content (2) Campaigns conducted (3) Effectiveness evaluation	• Prepare materials • Conduct Information Dissemination Campaigns
2.2	Construction of pilot MCK and Simplified Community Sewerage systems. Milestones: (1) Community agreement (2) DED complete (3) Construction complete (4) Connections achieved (5) Management sustained	• Community development activities • DED • Bid, construction, initial operation
2.3	Conduct a Schools Sanitation Program, including physical works to upgrade all sanitary facilities and child behavioral change. Milestones: (1) Materials ready (2) Targets service standards achieved for facilities (3) Effectiveness evaluation	• Prepare docs. • Construct facilities • Deliver behavioral component
2.4	Sludge Treatment Plant (IPLT) rehabilitation or new construction Milestones: (1) FS complete (2) EIA complete (3) Land acquisition (4) DED (5) Construction complete (6) Operating budget secured (7) Quality of effluent acceptable	• Complete EIA • Land acquisition • Bid documents • Construction contract • Supervision
3	**INSTITUTIONAL DEVELOPMENT AND CAPACITY BUILDING**	•
3.1	Implementation and routine update of a Local Institutional Development Action Plan (LIDAP) for both sectors overseen by the Water Supply and Sanitation Advisory Board and TKPP. Milestones: (1) Standard package complete (2) RG completed choice/ adaptation (3) Yearly actions complete (4) Yearly up-date	• Consultancy to prepare a "standard" package • Adaptation by RG • Materials, equipment, remuneration & services.
3.2	Develop performance contracts between selected local government owners and their PDAM. Milestones: (1) Model performance contract (2) Specific contract available for each PDAM (3) Performance audit end of first year.	• Standard agreement and indicators • Adaptation for PDAM • Assistance to PDAM to negotiate with RG
3.3	Implementation and routine update of a Financial and Organizational Performance Improvement Plan (FOPIP) Milestones: (1) Baseline performance indicators established (2) Strategic Plan updated and targets approved (2) Annual plan approved (3) Yearly actions completed (4) Years results in terms of performance indicator improvement measured	• Annual surveys • Benchmarking of indicators as per FOPIP • Update Strategic Plan • Annual updated FOPIP
3.4	Training of agency management and operational personnel to improve competencies in activities associated with successful project delivery. Milestones: (1) Training plans as part of FOPIP (2) Completion of annual training program (3) Numbers of accredited personnel	• Training course preparation • Training delivery • Accreditation system establishment
3.5	Consultant design and supervision services for DBO contracts. Milestones: (1) Approval of TORs (2) Appoint consultant (3) Bid document (4) Progress payments of DBO contractor	• Preparation of TORs • Procurement of services • Consultant services

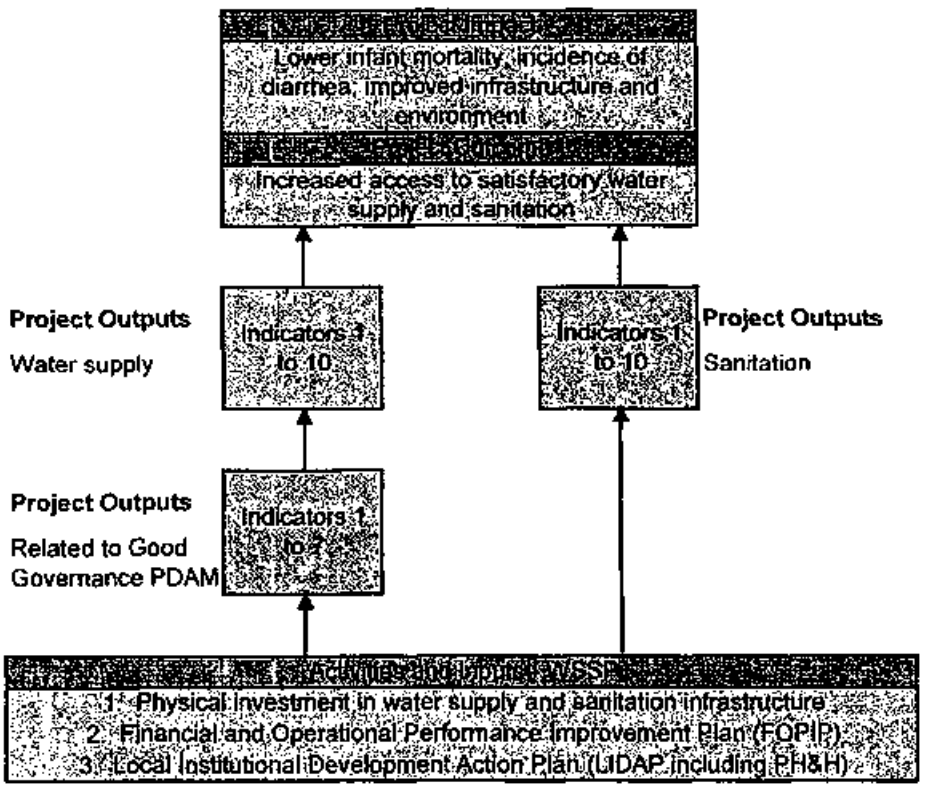
REF	ACTIVITIES	INPUTS
3.6	Consult Services for (1) city-wide sanitation strategies (2) IDCB design and implementation and (3) construction supervision. Milestones: (1) Sign-off of Plan by Board of Supervisors (PDAM) or Sanitation Advisory Board (2) Progress compared with planned and (3) Actual disbursement compared with planned.	• Preparation of TORs • Procurement of DED / ID consultants • Delivery of DED / ID services
3.7	Management Services to the Executing Agency for overall WSSP project management. Milestones: (1) Actual mobilization of services (1) Satisfactory establishment of the PPMS (3) Disbursement	• Preparation of TOR • Procurement of Services • Delivery of Consultant Services
3.8	Independent technical and financial audit services. Milestones: (1) Approval of TORs (2) Appoint consultants / auditors (3) Recommendations made (4) Follow-up actions.	• Preparation of TOR • Procurement of services • Delivery of services

D. PROJECT PERFORMANCE MONITORING SYSTEM

1. THE ELEMENTS OF THE SYSTEM

774. The project design and monitoring framework is based on achieving project objectives through a series of related activities (cause and effects) which lead to delivery of improved water supply and sanitation services in a sustainable way. To effectively monitor performance of the project, measurement is necessary of activities (i.e. inputs), outputs, and outcomes/impacts in a chain of cause and effect. To measure, indicators of performance are needed. Figure 24 summarizes the elements of the measurement system to be used.

Figure 24: The Elements of the PPMS



775. Implementation of the System will begin upon project launch, with assistance from the Project Management Consultants. The QA consultants will provide independent validation of the data. The water supply, sanitation and good governance elements of the System are described below.

2. WATER SUPPLY INDICATORS OF OUTPUTS

776. Indicators that the project activities are having the desired effects are shown in the "scorecard" of indicators shown below. Most current indicator values are shown, as well as targeted values by the end of the project in 2010. Values which are currently not available will be measured during the first year of the project (2006). All indicators are part of the PERPAMSI benchmarking system, which is a service available to PDAMs for assessing performance on an annual basis. The PPMS will use the benchmarking indicators, as it enables comparisons with peers and has a number of other advantages, including enabling the PPMS to become a sustainable performance improvement tool and as an aid to increasing transparency.

Table 125: Indicators of Performance of the PDAM

I	PERFORMANCE PERSPECTIVE	Unit
I	CUSTOMER INDICATORS	
1	Customer Satisfaction Index	-
2	Population Served in the Service Area	%
II	FINANCIAL INDICATORS	
3	Operating Cost Ratio	%
4	Debt Service Ratio	%
5	Current Ratio	%
6	Tariff Revision	%
III	OPERATIONAL INDICATORS	
7	Non Revenue Water	%
8	Water Quality Index	
9	Continuity of Service	hrs /day
IV	PERSONNEL INDICATORS	
10	Employee Satisfaction Index	-

Notes:
1. Values for 2005 (the year before the first year of the project) and targets to the last year of the project (2010) will be determined in the first year (2006) of the project.
2. A full set of definitions of data and indicators as well as data sources are already available under the PERPAMSI Benchmarking System, which also collects data annually on, and calculates indicator results for, the MoHA and the International Benchmarking Network performance assessment systems.

3. SANITATION INDICATORS OF OUTPUTS

777. There are no widely accepted indicators of performance of the sanitation sector. Trends in the sector performance therefore cannot be detected. Without tends it is difficult to identify performance improvement actions in a logical manner. In the absence of agreed indicators, the following will be used (see Table 27). Current values and targets for 2010 will be set as part of the WSS Sector Planning in the first year of the project.

Table 126: Suggested Indicators of Performance for the Sanitation Sector

	Performance Perspective		Description
I	**Community Perspective**		
1	Incidence of Diarrhea	%	Preferably measured for children less than 5 years of age, and recalled incidence in the last 2 weeks
2	Access to improved HH sanitation	%	BPS considers this to be the % of total population who regularly use (i) a "Jamban keluarga (Jaga)" (sealed-flush toilet) or (ii) a "Jamban Jamak" or "Jamban Umm" (a communal or a public toilet)
3	Improved disposal of HH waste	%	BPS considers this to be % of total population who regularly dispose of their waste through (i) "Cublik" (a unlined pit) or (ii) a septic tank (no distinction is made as to whether there is or not an overflow from the tank to a "resapan" (leaching drain) or open drain.
II	**Financial Perspective**		
4	Cost recovery ratio of existing public-provided facilities	%	Actual O&M funds received / needed O&M funds. Received includes from APBN/D as well as directly from "retribusi"
5	Annual Increase in Sanitation Budget	%	Total budget in the year to provide services under one or more of the 8 sanitation sector activities of all agencies (central, provincial and local) within the project area, divided by last year's budget. Training costs included only for local personnel.
III	**Operational Indicators**		
6	Disposal capacity	%	Actual desludging capacity (m3 /day) / required desludging capacity.
7	Treatment Efficiency	%	% of effluent tested not meeting the required discharge standard
8	Water quality in rivers	%	% of tests in the year not meeting ambient standards.
IV	**Personnel Indicators**		
9	Training Budget	%	Expenditure of local government on training staff in sanitation matters as a % of the total sanitation budgets

Note: The values for each indicator will be determined for each location during the first 12 months of the Project and targets set thereafter for 2011.

4. Good Governance Indicators

778. Good governance of the sector and the PDAM is important to sustainability of the physical investments. Improved governance is therefore an important output of the project. There are two levels of governance – (i) the WSS sector as a whole and (ii) the PDAM (ie, corporate governance).

779. Objective monitoring of governance performance requires agreement on a definition of the practices that constitute governance, indicators of the practices, measurement of how well the practices are currently being implemented as well as targets for the future.

780. Good corporate governance of the PDAM is defined as:

"The combination of policies, systems, structures and a strategic / operational framework which the governing body puts in place to ensure the leadership of the organization makes appropriate decisions, and takes appropriate action to deliver services in an effective and accountable manner. This includes transparent and accountable stewardship of resources which will sustain the organizations , and keep it relevant to both the community in which it operates and the clients / customers it serves."

781. No attempt will be made to measure improvements in sector governance arrangements to be made under the Local Institutional Development Action Plan (LIDAP). However, Table 28 shows the "scorecard" of broad areas of governance practices in the PDAM (the corporate governance level) that will be monitored. The FOPIP in Appendix 1 of each SPAR provides details of the components of each practice and a scoring sheet to be used. The practices will be implemented by the Badan Pengawas. Like sanitation and

certain of the water supply indicators, a baseline is to be established in 2006 for the first year of the project (2006) and targets set for the last year of the project (2010).

Table 127: Good Corporate Governance Indicators

	Good Corporate Governance Practices	Weight
1	Established Components of System of Good Corporate Governance	30
2	Appropriate Role played by the Board of Supervisors (Badan Pengawas)	10
3	Appropriate Role played by the Board of Directors (Direksi) in support of good governance initiatives	10
4	Fulfillment of Disclosure, Transparency and Compliance Obligations	10
5	Control of Risks, Corruption and Fraud	20
6	System to Protect Rights of Government Owners / Shareholders	10
7	System to Protect Rights of Stakeholders, including provision of consultation and participation mechanisms	10
	GCG INDEX VALUE	

Notes:
1. "Practice Score" is based on the "Degree of Adoption / Achievement" awarded to each Practice, calculated from the sum of the score awarded to each component.
2. See Table of Attachment 5 of FOPIP for the components of each Practice and scoring
3. "Weight" is an arbitrary value determined by authorities to reflect the importance of each Practice in achieving a state of good corporate governance.
4. "Total Score" for each Practice is component score multiplied by weight.
5. "Index Value" is a single number calculated by summing the Total Score for each Corporate Governance Practice. The higher the score, the better. It can never be more than 1000 under the stipulated scoring method.

E. PROJECT ASSUMPTIONS AND RISKS

782. The main project risks relate to:

i. the projected demand and/or willingness to pay for water supply and sanitation services not materializing,

ii. stakeholder committees not providing the necessary input to the project implementation,

iii. land acquisition and water abstraction rights not being finalized in accordance with project schedules,

iv. counterpart funding not being provided by RGs in accordance with the Project requirements,

v. institutional development and capacity building of PDAMs not being achieved to the levels required to support the significant increase in sizes of systems,

vi. PDAMs failing to develop the good corporate governance which might lead to proper management of systems,

vii. credit facilities must be provided for connections and interest on the credit shall be no more than is being paid on the loan,

viii. interest-free credit must be offered to low-income households as defined in the tariff regulation or by Pemda,

ix. regular water supply tariff increases to adequate levels being politically unacceptable,

x. appropriate use of water and improved hygiene behaviour not being achieved in households,

xi. the correlation between improved sanitation and improved health not proving robust, and

xii. sanitation facilities not being fully utilized in line with their proposed use, especially in schools

783. These risks will be mitigated by measures including:

i. use of contingencies in cost estimates.
ii. project implementation monitoring arrangements,
iii. support from key central government agencies in the implementation of the project,
iv. appointment of project implementation consultants,
v. a series of specific assurances being obtained from GoI, and
vi. regular ADB project reviews.